Acquisition of competence: An analysis of clinical teaching and learning of midwifery at Kamuzu College of Nursing

by

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ABSTRACT

Introduction: Malawi has one of the highest maternal and neonatal mortality rates globally. In response a competence-based education (CBE) approach in midwifery education was introduced at Kamuzu College of Nursing (KCN). KCN adopted the International Confederation of Midwives' seven essential competencies for basic midwifery practice to produce professional midwives. However, there are reports that the performance of the graduates is below standard.

Purpose: To explore the clinical teaching and learning practices utilized by midwifery lecturers and students at KCN in preparation of students for effective midwifery practice.

Design: A sequential qualitative study was conducted at KCN in Malawi. Data were collected from multiple sources for triangulation. Purposive sampling was used to select a sample of six senior midwives and six educators in first phase. In the second phase, 26 student midwives, and five graduates from KCN, and for comparison, four graduate midwives from another local institution, Mzuzu University (Mzuni). Face to face semi structured interviews were conducted in the first phase. In the second phase focus group discussions were conducted to collect data from the students and graduates from KCN, and face to face interviews were used for Mzuni graduates to obtain participants' accounts of the phenomenon. Timetables, the curriculum and students' clinical assessment forms were checked to verify data from respondents. Using NVivo software, a thematic analysis approach was used for data analysis.

Findings: Findings reveal that learning is compromised. Although the curriculum document indicates that the program is competence based, teaching and learning methods, and assessment of students' clinical learning are inconsistent with CBE, including learning theories such as cognitive load, situated learning, psychomotor skill learning and experiential learning theory. There is paucity of resources, poor infrastructure, and poor personal relationships.

Conclusion: The study portrays a negative impact of introducing change using top management as a change agent.

DECLARATION STATEMENT

I declare that this thesis is my own work and has never been submitted for any degree. The research which it reports is also my own work any other sources have been acknowledged by references and a bibliography is included. All university ethical procedures were followed, and ethical approval was granted. The evidence of all ethical approvals has been appended.

Signature _____ Date____5.02.2025 _____

THESIS DECLARATION

I declare that this thesis has no Bar on Access.

Signature:  Date: 13.02. 2026.

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DEFINITIONS/ABBREVIATIONS

BSc	Bachelor of Science
CBE	Competency based education
CBME	Competency based medical education
CHAM	Christian Health Association of Malawi
CLT	Cognitive Load Theory
CMA	Community Midwife Assistant
CINAHL	Cumulative Index to Nursing and Allied Health Literature
DP	Deliberate Practice
ENM	Enrolled Nurse Midwife
ELT	Experiential Learning Theory
ICM	International Confederation of Midwives
KCN	Kamuzu College of Nursing
KCH	Kamuzu Central Hospital
MEDLINE	Medical Literature On-Line
MSc	Master of Science
NMCM	Nurses and Midwives Council of Malawi
NMC	Nursing and Midwifery Council (UK)
NMT	Nurse Midwife Technician
NSO	National Statistics Office
OBE	Outcome based Education
OSCE	Objective Structured Clinical Examinations
PhD	Doctor of Philosophy
QED	Quasi experimental design
RNM	Registered Nurse Midwife
RTC	Randomised Controlled Trial
SLT	Situated Learning Theory
ScBS	Scenario-based simulations
TBA	Traditional Birth Attendant
UCM	University certificate of midwifery
WHO	World Health Organisation

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CHAPTER 1
BACKGROUND

1.Introduction

This is a qualitative study about midwifery education at Kamuzu College of Nursing (KCN), a constituent college of the University of Malawi. It was conducted in Malawi, a country situated in southern eastern part of Africa, in the Sub-Saharan region. The study focuses on teaching and learning of midwifery in a country that has persistently recorded one of the highest maternal mortality rates globally (WHO, 2023). The purpose is to explore the teaching and learning practices in midwifery, in response to reports of poor graduates' performance. Midwives form the backbone of maternity services in the country; hence it is important that preparation of midwives focuses on achievement of competence and ability to act decisively and independently (Moridi et al, 2022). It is vital that any midwifery programme prepares and promotes the midwives' ability to conduct most births, to determine risks in a timely way and, where necessary, to manage complications of childbirth as they arise. Moreover, in developing countries, midwives function in the community, health centres and in hospitals, with minimal or no supervisory support (Peters,1995). In Malawi, the midwife is generally the most suitable and cost-effective health care provider to be assigned to the care of pregnancy and birth, including risk assessment and the recognition of complications (WHO, 1996). There are 0.2 obstetrician/gynaecologists, 10 registered nurse midwives and 52 enrolled/nurse midwife technicians for every 200,000 populations (Ministry of Health, 2015). 0.5 nurse/midwives per 1000 patients, The World Health Organi sation recommends a nurse/midwife patient ratio of 1 to 175 (Chirwa et al, 2023).

1.1 Midwifery education in Malawi

From pre-independence to the post-independence era, midwifery has evolved from a form of vocational training to a more academic education in accredited academic institutions offering certificate, diploma, and degree programme under the regulation of the Nurses and Midwives Council of Malawi (NMCM).

1.2 Pre-independence Era

During the pre-independence era maternity services were provided by traditional birth attendants (TBA). These were relatives of the pregnant woman or another village woman within the age range of 35-60 acting as a village midwife. She assumed the role after experiencing childbirth. Midwifery training occurred within a community of practice whereby a close relation of the TBA got the skill through working alongside an established TBA (Smit, 1994). Since 2007 TBAs no longer conduct deliveries following a presidential directive because they did not identify obstetric emergencies early enough which contributed to increased maternal deaths. In 1932, missionaries started training midwives in the local language, with training lasting for a few months to two years. Only literate married women who were respected in their villages were enrolled into the programme. They learned the simplest form of anatomy and physiology and the basics of general nursing care, antenatal care, care of a woman in labour and puerperium. They were able to carry out normal deliveries, recognise abnormalities and refer the woman to a more senior person. The training continued till 1972 (Spiers, 1985).

In 1950 a training programme was introduced for girls to enable them to become enrolled nurse midwives (ENs). This programme was in English and consisted of a two-year course in general nursing followed by a year in midwifery, or a two-year course in midwifery. It has been phased out but some of the graduates are still providing midwifery services. The minimum entry requirements for this training were a full Junior Certificate of Education which was an examination taken following six years of primary education and two years of secondary education. 2,300 qualified as ENs and they formed the backbone of the midwifery service in the country.

1.3 Independence Era

In 1964 at independence the only registered professional nurses and midwives in Malawi were those who had trained elsewhere, and few were Malawian. A 3-year training programme for the registered nurse midwife begun in the southern part of the country at Blantyre School of Nursing in 1965. It was a hospital-based generic programme under the auspices of the Malawi government through the Ministry of Health. Upon successful completion of the programme, graduates were awarded a certificate in nursing and proceeded with a generic midwifery programme in 1968**.**

This programme continued until 1979. In November 1970, a training programme of registered nurses (RNs) to become registered midwives commenced. This was part of a 5-year Health Plan (1965-1969) that emphasised training of manpower. In October 1979, there was a presidential directive to uplift the status of nursing and midwifery education in the country from the National School of Nursing to University level as a constituent college of the University of Malawi under the name Kamuzu College of Nursing (KCN). KCN opened with a new curriculum, a diploma in nursing and University Certificate in Midwifery (UCM) programme. It was a four-year programme, of which the first three years led to a diploma in nursing. The fourth year was a compulsory one-year midwifery programme; successful candidates were awarded a UCM. The midwifery programme offered courses in all aspects of midwifery including teaching methods. Students had one day of lectures weekly and spent 36 hours per week in the maternity unit. Although the training was initially based on the British system it prepared learners to cope without a doctor, by then there were only 120 doctors in Malawi, therefore they were trained more on midwifery care of women with pregnancy related complications than their British counterparts.

As regarding skills, the NMCM required the graduates from this programme to perform a minimum of two breech deliveries, two twin deliveries, and five vacuum extractions as well as performing and suturing an episiotomy, six-week postnatal examinations and child spacing procedures during their training. These were in addition to antenatal examinations, vaginal examinations, normal deliveries, assisting at caesarean sections, postnatal examinations of mothers and babies, and putting up intravenous infusions. The students were also required to write up six care studies of women they have delivered, four of which were deliveries of mothers with complications. Towards the end of the training, student midwives spent two weeks in a district hospital and two weeks in a primary health centre under the supervision of a registered midwife. Before proceeding to sit for the NMCM licensure examinations the students had to pass their university courses. University assessments comprised 60% examinations, 40% continuous assessment, and an end of rotation grade. The NMCM written examination required students to demonstrate their ability to handle situations they would likely encounter as midwives and design a plan of care using the nursing process (Spiers, 1985).

In 1985, KCN started enrolling males, for nursing and midwifery training (Simukonda & Rappsilber, 1989). In 1996, a four-year Bachelor of Science (BSc) nursing programme that complied with the international and national standards of nursing and midwifery education commenced (WHO, 2009; NMCM, 2013). Nursing and midwifery schools were mandated to stipulate entry requirements that meet national criteria for higher education institutions including completion of secondary school education. At this point the midwifery course was no longer compulsory. At the successful completion of a four-year nursing programme, all graduates were deployed in different hospitals as RNs, and those interested in midwifery applied for a one-year UCM programme at their convenience. Successful candidates were awarded a university certificate in midwifery. Since the introduction of the BSc programme, the intake has increased from 10-25 to 150 or more students in one cohort. In contrast, a full-time midwifery programme within the United Kingdom lasts three years (Nursing and Midwifery Council, 2019).

In 2004, KCN conducted internal and external evaluations at the request of WHO to assess the strength of the BSc in Nursing and the UCM programmes. The evaluation recommended a review of the programmes in line with Malawi's current high maternal and neonatal morbidity and mortality rates which was at 381 deaths per 100,000 live births (WHO, 2023), and a neonatal mortality rate was at 24 deaths per 1,000 live births (National Statistical Office (NSO), 2024), and the disproportionately high disease burden. Comparatively, the United Kingdom has a maternal mortality rate of 8 per 100,000 live births (WHO,2015) and a neonatal mortality rate of 2.9 deaths per 1,000 live births an increase from 2.8 deaths per 1,000 live births in 2018 (NSO, 2021). The evaluation also recommended the integration of nursing and midwifery modules to cover a wider range of content to address persistent health needs of the communities without over-stretching existing limited resources. Since then, students study nursing courses from first to third year first semester and commence midwifery in second semester of the third year. From that point onwards, students have both nursing and midwifery courses. Additionally, the University of Malawi requested KCN to increase access of tertiary education to the youth. Consequently, the government considered the integration as an effective approach to meeting the reproductive health needs of clients as all nurses would attend to female clients holistically. KCN implemented the recommendations and

developed an integrated curriculum covering both the nursing and midwifery content in four years (BSc nursing and midwifery). Hence, the triggers for curriculum change were external (Uys, 2005), change imposed by external forces is unplanned, planned change is the discovery of problems that need improvement in a proactive manner (Khaw et al, 2023).

In 2005 the Malawi government established a three-year integrated nursing and midwifery technician (NMT) programme under the auspices of nine Christian institutions operating under Christian Health Association of Malawi (CHAM). CHAM is an ecumenical, non-governmental umbrella organisation of Christian owned health facilities. NMTs are a supplement to the registered nurse midwife (RNM), hence in the hospital setting, NMTs practise under the supervision of RNMs. But since professional midwives are reluctant to work in rural settings, NMTs are mostly the only nursing and midwifery staff available in rural health facilities. This means NMTs based in rural health facilities perform duties and skills of RNMs based on need and they usually work outside their scope of practice. The main difference between the NMT and the enrolled midwife is that NMTs go through a three-year programme and can provide care to pregnant women with pregnancy related complications. Whilst the ENMs had one-year training in nursing and one-year training in midwifery and they are only certified to assist women without pregnancy related complications. Statistics indicate that in 2015, 2,840 NMT and 696 RNMs were working in health facilities (Ministry of Health, 2015).

In 2006 a second public university, Mzuzu University (founded in 1997) inaugurated a four-year pre-registration BSc nursing and midwifery programme. In response to the recommendations of the WHO, KCN commenced a similar four-year BSc programme in 2008 and this is on-going. In 2016, KCN commenced a four-year direct entry BSc midwifery programme. This was a response to anecdotal reports of KCN graduates of the integrated programme which revealed that the integrated curriculum is overloaded hence, it hinders the attainment of the required midwifery competencies. The first cohort of this programme graduated in 2019. In 2010, KCN commenced a two-year clinical MSc programme in midwifery. In 2011, the government of Malawi commenced an 18-month training programme of community midwife assistants (CMAs), as a mechanism to increase skilled attendance at birth in rural areas to improve maternal and child health. 80% of the population of Malawi

lives in rural areas, where women cannot access health services due to geographical and infrastructure problems. Unfortunately, many midwives refuse to stay in rural settings. The programme was introduced because CMAs stay and work in the communities and understand the community's cultural background (White Ribbon Alliance Malawi, 2014). The programme is administered by the CHAM institutions. KCN has introduced a PhD midwifery programme.

In 2015, 2,840 NMTs and 696 RNMs were working in health facilities (Ministry of Health, 2015). This seems to imply that KCN student midwives mostly interact with NMTs rather than registered midwives as expected. This may have implications on students' learning during clinical practice because the NMTs may be good at assisting student nurses to develop psychomotor skills but may lack the ability to promote development of analytical and critical thinking skills. Additionally, as indicated earlier, the larger population of Malawi lives in the rural areas (Ministry of Health, 2012). Therefore, having less qualified midwives in rural than urban areas indicates that a larger population of childbearing Malawian women do not have access to midwifery care from highly qualified midwives. Below is a summary of categories of midwives providing midwifery services country wide.

Table 1: Categories of Malawian midwives: training institutions, duration of training and expertise

Category	Qualification	Training institution	Duration of midwifery training	Expertise in midwifery care
Registered nurse midwife	Certificate in nursing and certificate in midwifery	National School of Nursing Blantyre	1 year	Care of women with uncomplicated and complicated pregnancies, conduct complicated deliveries.
Registered nurse midwife	Diploma in nursing and university certificate in midwifery	University of Malawi (KCN)	1 year.	As above
Registered nurse midwife	BSc nursing and university certificate in midwifery	KCN	1 year	As above
Registered nurse midwife	BSc in nursing and midwifery	KCN, Mzuzu University & the Catholic University	4-year integrated nursing and midwifery	As above
Registered nurse midwives	PhD	KCN	4 years	Multi-tasks including policy making
Registered midwife	Diploma	Malawi college of Health Sciences	1-year midwifery programme	As above
Nurse midwife technician	Nurse midwifery certificate	CHAM	1-year programme	Care of women with uncomplicated and complicated pregnancies, conduct complicated deliveries
Enrolled nurse midwives	Nurse midwifery certificate	Missionary schools now CHAM	1-year midwifery course	Care of women with uncomplicated pregnancies, antenatal labour and postnatal
Community based midwives	CMA certificate	CHAM schools	18 months	Care of uncomplicated pregnancies in antenatal, labour, and postnatal

The NMCM as the regulatory body provides the syllabi for the theory components and prescribes the hours and the competencies to be attained by each student at the end of all generic programmes to qualify for licensure examinations which are administered by the council. The competencies for professional midwifery programmes are in line with the international confederation of midwives (ICM) and national needs. The table below indicates midwifery programmes offered at KCN since its inception to date:

Table 2: Midwifery programmes offered at KCN

Year of introduction	Nature of programme	Nature of candidate	Duration	Final award	Remarks
1979	UCM	Qualified nurses (females only)	1 year	University certificate of midwifery	Enrolled soon after nursing programme (compulsory)
1996	UCM	Qualified nurses (males and females)	1 year	University certificate of midwifery	Enrolled by choice after practicing nursing
1990	BSc midwifery Post basic	Qualified midwives	2 years	BSc midwifery	By choice
2008	BSc nursing and midwifery	Generic	4 years of nursing and midwifery	BSc nursing and midwifery	Compulsory midwifery programme
2012	MSc midwifery	Qualified midwives (post basic)	2 years	MSc in Midwifery	By choice
2016	BSc midwifery direct entry	Generic	4 years	BSc in midwifery	Enrolled by choice
2020	PhD midwifery	Post basic	4 years full time 6 years part time	PhD midwifery	Professional midwives

The programmes are offered at the Blantyre and Lilongwe campuses. Educators commute between the two campuses to fulfil their teaching responsibilities. The integrated programme, which is the focus of this study is housed at the Lilongwe campus. For this thesis, I chose to study the integrated programme because it has the largest intake consequently it produces the bulk of the midwifery workforce in Malawi. However, where necessary, reference to the other programmes will be made.

1.4 Rationale for the study

After implementing the integrated programme, stakeholders' anecdotal reports reveal poor performance and lack of skills among KCN graduates in maternity settings, hence, some stakeholders prefer Mzuzu rather than KCN graduates. This set the impetus for this study. As someone involved in classroom and clinical teaching of midwifery at KCN, I was concerned with such reports and decided to conduct this study to analyse the clinical teaching and learning of midwifery at KCN. Peters (1995) affirms that the inability to access competent caregivers throughout pregnancy, childbirth and the postpartum is the main cause of unsafe motherhood in developing countries, one of which is Malawi. Similarly, Filby et al (2016), asserts that the quality of care is crucial in the reduction of maternal and neonatal deaths. I wondered why a KCN midwifery graduate should perform below standards considering that currently the college has better qualified educators than was the case previously. Furthermore, KCN now has good infrastructure with modern library facilities to support students' learning. Additionally, some of the educators who taught me are still practicing and mentoring new educators at the college. Hence, my expectation is that KCN ought to produce better midwives than was the case previously. I was taught by RNMs who graduated from the national school of nursing, though highly experienced, they were not at BSc level. They later advanced their studies to PhD level. Library facilities were so limited that some courses had only one textbook for students and educators. Despite this, KCN graduates were able to work in maternity immediately after graduation. I remember being allocated to the maternity ward at a district hospital to oversee the antenatal clinic, labour and delivery suite and the post-natal ward which catered for both complicated and uncomplicated pregnancies. During the entire time, the hospital never experienced a single maternal death. Additionally, I was assigned to supervise all maternity units

in the district. Therefore, the reports of poor graduates' performance produced a sense of curiosity in me I wanted to know what has gone wrong with midwifery education at KCN. I felt that the perceived low performance of the KCN graduate midwives needed to be explored through analysis of teaching and learning strategies that are deployed during the educational process.

1.5 Reflexivity

Reflexivity is referred to as self-evaluation and self-criticism, founded on the idea that the involved researcher actively participates in the environment, interpersonal interactions, and interpretations. Field research requires knowing oneself, as well as how the research activity affects and changes the researcher. This self-knowledge develops throughout the study process (Probst & Berenson, 2014). In the following paragraphs, I introduce myself, present my motivations for the study, and my convictions regarding midwifery education at KCN. Furthermore, throughout the chapters I will add my reflections, discuss decisions I made and the reflect on the impact of the study on my practice as an educator.

I am a professional nurse midwife who graduated at KCN currently involved in classroom and clinical teaching of midwifery at the same institution since 2004. I have a passion for midwifery such that I have always worked in maternity settings since my graduation. I embarked on this study for my professional doctorate degree in health professions education to gain an understanding of what is involved in the clinical teaching and learning of midwifery. Stakeholders reported low levels of clinical performance and lack of patient management skills as major weaknesses among the graduate midwives. As someone who studied at KCN. I was surprised to hear reports of poor performance because I have always known that graduates from the institution have been commended by stakeholders for their performance in midwifery.

This gave me the impetus to embark on a study with the hope of getting to the root cause of the problem, to find out what has gone wrong with the teaching and learning, to bring change and improve practice. Although prepared at diploma level, midwifery graduates from KCN were highly commended for their exceptional performance such that most of them are now holding high positions in government and international organisations. Since 1996 KCN students are prepared at degree level, and with time the institution has better learning resources, such as books and

access to the internet, with more highly qualified educators than was the case previously. Therefore, I expect BSc graduates' performance to be of higher standard than that of the diploma graduates. There is evidence that there is substantial correlation between professional and educational backgrounds and the knowledge, skills, attitudes, and practices associated with evidence-based practice (Mollon et al, 2012, Swindells & Willmott, 2003; Gustini et al, 2024), they are more likely to question doctors, be assertive and confident (Harrison, 2004). I perceived that the graduates' poor performance may be associated with ineffective teaching practices which may impact negatively on students' learning practices. The educators teaching strategies have a direct impact on the learners learning (Trigwell et al 1999; Zhang et al, 2024; Zahid, 2025). I originally, planned to focus on the teaching and learning strategies, but during discussions with my supervisors I realised that I need to examine the curriculum as well because during the teaching, educators implement the curriculum.

My conviction regarding KCN is that the institution has an obligation to produce competent midwives who can provide quality care to mothers and neonates. Firstly, statistics from the Malawi Ministry of Health indicated earlier suggest that midwives are the backbone of maternity care in Malawi. Secondly, KCN claims to be the lead nurse midwife education institution in the country. Furthermore, in August 2012 the college was recognised by the WHO as a WHO Collaboration Centre, a centre of excellence within the Southern African Development Community, therefore, as the lead nurse midwife education institution in the region, the college has an obligation to all stakeholders to produce high quality midwives for the people of Malawi. Thirdly, it is important to realise that both government and families invest a lot of finances in the education of midwives therefore, learners deserve quality education that will enhance their employment prospects in a highly competitive environment. The purpose of the midwifery training at KCN is to prepare a midwife who can take a leading role in midwifery care. In many cases the professional midwife in Malawi is the only highly qualified midwifery related practitioner at a health facility due to the scarcity of obstetricians/gynaecologists**.**

KCN uses an outcomes-based curriculum approach, which involves competency-based teaching, with emphasis on knowledge, skills, and behaviours. Classroom and clinical teaching are done by lecturers who are qualified midwives in accordance

with ICM standards (ICM, 2025), the global standards for the initial education of professional nurses and midwives (WHO,2009; NMCM, 2012; Baker et al, 2021). This implies that the teaching and learning of midwifery at KCN is based on the ICM competency domains (ICM, 2012). According to Uys and Gwele (2005), the KCN curriculum has the potential to produce competent midwives if used properly, therefore, I am surprised that graduates of this programme do not seem to be competent for practice as per stakeholders' grievances. Hence, my assumption is that educators use poor teaching practices which impact negatively on students' learning. Evidence indicates that graduates with degree education are superior to diplomates in cognitive ability, reflective practice ability and professional practice which are critical to the development of the profession (Swindwells & Willmot, 2003; Zhang et al, 2024). Based on this, KCN graduates' performance should reflect their academic achievement.

1.6. Competency-Based Education

After a systematic review of published definitions, Fullerton et al (2017) define competency based education (CBE) as an approach utilised in the preparation of health care workers for practice that is essentially oriented to graduate outcome capabilities and organised around competences derived from an analysis of the needs of a specific society and patients. While de-emphasising time-based training, it emphasises learner-centeredness, accountability, and flexibility. For the discipline of midwifery, the explicit definition of CBE is a curriculum or study programme that has as its principal learning outcomes the acquisition and demonstration of International Confederation of Midwives (ICM) essential competences for basic midwifery practice. The seven evidence-based ICM competence domains and their associated knowledge, abilities, and professional behaviours that go along with them are used in CBE in midwifery to establish a clear connection between the curriculum's content and the learning outcomes, for the development of fully trained midwives who are prepared for the workforce. The ICM competencies are shown below:

Table 3: ICM Essential competencies for basic midwifery practice (2010)

Competency area	Competency
Competency in social, epidemiologic and cultural context of maternal and new-born care	Midwives have the requisite knowledge and skills from obstetrics, neonatology, the social sciences, public health and ethics that form the basis of high quality, culturally relevant, appropriate care for women, new-borns, and childbearing families.
Competency in pre-pregnancy care and family planning	Midwives provide high quality, culturally sensitive health education and services to all in the community in order to promote healthy family life, planned pregnancies and positive parenting.
Competency in provision of care during pregnancy	Midwives provide high quality antenatal care to maximise health during pregnancy and that includes early detection and treatment or referral of selected complications**.**
Competency in provision of care during labour and birth	Midwives provide high quality, culturally sensitive care during labour, conduct a clean and safe birth and handle selected emergency situations to maximise the health of women and their new-borns.
Competency in provision of care for women during the postpartum period	Midwives provide comprehensive, high quality, culturally sensitive postpartum care for women.
Competency in postnatal care of the new born	Midwives provide high quality, comprehensive care for the essentially healthy infant from birth to two months of age
Competency in facilitation of abortion-related care	Midwives provide a range of individualised, culturally sensitive abortion-related care services for women requiring or experiencing pregnancy termination or loss that are congruent with applicable laws and regulations and in accord with national protocols

In Malawi, as a signatory to ICM, the Nurses and Midwifery Council of Malawi (NMCM) adapted the competencies, however, they added the last two competencies

to suit the needs of the country, hence, the NMCM has nine essential midwifery competencies which focus on preconception, antenatal, labour and delivery, postnatal care and new-born care and post abortion care; emergency obstetric and neonatal care, leadership and management.

In CBE students are held accountable for their knowledge of competencies deemed essential for a subject of study. The foundation of CBE is always the products of an educational encounter rather than the inputs of the environment and system of education. Students are the focus of the learning experience, and all educational pathways have well defined performance practice expectations. All health professions' curricula, assignments, and practice sessions are intended to ensure the development of competences and encourage responsible learning. By regularly assessing their own performance, learners gain the capacity to appraise their performance and make inroads towards the accomplishment of learning outcomes and the continuous acquisition of necessary competences for practice (American Association of Colleges of Nursing, 2021).

The terms CBE and outcome-based education (OBE) are educational paradigms sharing the notion that medical education should be guided by specified outcomes. Both CBE and OBE focus on the product rather than the process (Morcke et al, 2013; Albanese et al, 2008). An outcome educational model identifies, describes, and communicates the abilities and attributes graduates are expected to possess. It emphasises and structures everything in the educational system around what is essential for all learners to perform at the completion of the learning experiences (Spady, 1994; Katawazai, 2021). In contrast a competency model, starts with an emphasis on patient care outcomes and goes on to specify the outcomes learners must achieve (Ross et al, 2018). This study focuses on CBE in midwifery. It is paramount to understand the common concepts used in CBE such as competence, competency, and performance for uniform usage and understanding of the concepts.

1.6.1 Competence

Competence is a group of coordinated skills thought to support performance. A person competent in a domain has the capability to utilise the body of knowledge and skills of that domain to achieve tasks and goals beyond the educational programme. Competent people contribute constructively within workplace and life settings. Competence is closely associated with the notion of proficiency and mastery (Vitello et al, 2021). Defining competence through descriptions of activities that can be verified, seen, or judged, is often called the behavioural or performance approach. The generic approach defines competence as a broad range of skills, including knowledge or the capacity for critical thought, that support expert performance (Fullerton et al, 2013). The holistic method integrates the fundamental characteristics of a practitioner, beliefs, and values as they are applied in a situation, as crucial in competent performance (Fullerton et al, 2011). In a systematic review on definitions of competence, Fernandez et al (2012) concluded that competence is composed of knowledge, skills and other components. Apart from attitudes and values, competence requires experience and personal growth that are fostered by proper role models in a training institution.

Competence is heavily stressed in midwifery practice because it relates to professional roles and the amount of knowledge expected of a midwife (Clements & Mackenzie 2005). Fernandez et al (2012) affirm that competence enables a practitioner to execute tasks at a sufficiently safe quality, to manage issues, and to make wise decisions. Therefore, a competent individual fulfils the needs of to manage issues, and to make wise decisions. Therefore, a competent individual fulfils the needs of clients as well as the employer's expectations. Epstein and Hundert (2002) assert that competence is beneficial to both the person providing the service and the client. The NMCM (2012) refers to continuing competence as a significant professional characteristic underpinning the standards of practice for registered midwives. Based on the above, apparently there is no single, universally accepted definition of competence. However, the ICM (2011) uses the holistic approach in defining competence in the context of midwifery education. They define competence as the set of abilities, knowledge, psychomotor, communication, and decision-making, that allow a person to complete a task to a certain degree of proficiency. This definition will be used in this study.

1.6.2. Competency

Fullerton et al (2011) define competency as a combination of knowledge, professional behaviour, and specialised skills that are exhibited at a defined degree of proficiency in the context of midwifery education and practice. Competency is multifaceted knowledge that involves an individual's effective use of information, skills, and abilities in a particular context (Fullerton et al, 2013; Englander et al, 2017). Whereas Carracio et al. (2002) define competency as a complex set of behaviours based on knowledge, skills, attitudes, and competence as a personal ability. Lockyer et al (2017), state that competency is an observable quality of a health professional that includes knowledge, skills, values, and attitudes. Fullerton et al (2011) assert that competency is fundamental in midwifery practice, and it is vital to midwifery education, law, regulation, and recruitment and retention of professionals offering reproductive health services. Midwives are expected to maintain their competence and advance it after achieving it (McCandlish, 2010). The process of developing competencies is a lifelong series of doing and reflecting (Peakovi et al., 2014). Within the framework of midwifery education and practice, midwifery competency is defined as a blend of professional conduct, knowledge, and particular skills displayed at a predetermined degree of proficiency (Fullerton et al, 2011).

Core concepts of definitions of the fundamental components of competence and midwifery competency are presented below:

Table 4: Competence and Competency: Core Concepts for International Midwifery Practice

Ability: The quality of being able to perform; a natural or acquired skill or talent.
Attitude: A person's views (values and beliefs) about a thing, process, or another person that often lead to positive or negative reaction
Behaviour: A person's way of relating or responding to the actions of others or to an environmental stimulus.
Competence: The combination of knowledge, psychomotor, communication, and decision-making skills that enable an individual to perform a specific task to a defined level of proficiency
Competency (midwifery): A combination of knowledge, professional behaviour, and specific skills that are demonstrated at a defined level of proficiency in the context of midwifery education and practice
Knowledge: A fund of information that enables an individual to have confident understanding of a subject with the ability to use it for a specific purpose
Skill: Ability learned through education and training or acquired by experience to perform specific actions or tasks to a specified level of measurable performance.
Task: A specific component of a larger body of work.

Adapted from ICM (2013).

1.6.3. Performance

Performance is the term used to describe an individual's visible behaviours. Competence can only be inferred from an individual's performance because it cannot be seen immediately (Grégoire, 1997). According to Rethans et al (2002) competence is a crucial pre-requisite for performance, but performance is influenced by an individual's physical and mental health as well as their emotional state at the

time of the performance. Performance results from competence coupled with individual characteristics such as health, relationships, and factors relating to the system, such as facilities and practice time. Rethans et al (1991) studied the differences and the relation between what the doctor does in daily practice (performance) and what he or she can do (competence) by using national standards for general practice. Findings revealed that assessment of competence under examination circumstances can be used to predict performance in actual practice only when factors such as efficiency and consultation time are considered. They concluded that below standard performance of physicians does not necessarily reflect lack of competence**.**

1.6.4. Historical background of CBE

Bisgaard et al (2018) assert that in 1978, McGaghie and his colleagues introduced CBE into medical education by their presentation of a paper on competency-based curriculum in medical education at WHO. Since then, competency-based education has attracted much interest in medical and the health professions because it primarily focuses on outcomes. This is important since graduates achieve competence in all essential domains, which is significant in an era of greater public accountability. According to Riley and Riley (2017) CBE has been active on a global scale for more than 60 years. It was founded in the United States of America. Competency-based medical education (CBME) has been proposed in medicine for more than 50 years but has recently gained attention (Leung, 2002). This was largely motivated by the political perception that the national workforce needed to be more competitive in the global market. CBE emerged because employers recognised that there was a discernible correlation between workers' higher educational attainment and their capacity to adjust or meet job performance standards. Therefore, a competency-based midwifery education curriculum teaches and models the knowledge, abilities, and related professional attitudes and behaviours for the professional practice of midwifery (Fullerton et al, 2011). In CBE curriculum planning is explicitly tied to the needs of those served by the graduates (Frank et al, 2010). Neufeld et al (1993) call this the demand-side medical education which begins with an analysis of needs, expectations, and trends of health status of a given population.

1.6.5. Theoretical underpinning of CBE

Behaviourism is the theoretical orientation of CBE. The emphasis of CBE is on observable behaviours as represented in the works of experimental psychologists (Morcke et al, 2013). Behaviourism is a concept in which learners make deliberate efforts to improve their performance beyond its current level (Anderson, 2008). The basic assumption of behaviourist learning theory is that learning is demonstrated by a change in behaviour. Conditioning can cause change, modification, or acquisition of behaviours, and the source of the principle of conditioning is the environment. The behaviourist learning orientation is most useful for competency development and demonstrating technical or psychomotor skills. It is advantageous when a behavioural change is the desired outcome of an educational intervention. Behaviourism is based on three basic assumptions: observable behaviour being the focus of learning, the environment shapes behaviour, and feedback is critical to the learning process. Behaviourism emphasises mastery of prerequisite steps before proceeding to subsequent steps. Therefore, the behaviourist model adopts a teacher-centred strategy in which the educator manipulates the environment for students to elicit a particular reaction (Torre et al, 2006). A behaviourist approach is advantageous when developing learning objectives or developing competency-based curricula. Specific behavioural objectives inform the student about the behaviour that will be learned, the conditions under which it will be performed, and the criteria against which it will be assessed. By defining learning objectives in this manner, the teacher can clearly spell out the expected level of competency for each element of the curriculum. This approach is frequently used in health care education in the development and assessment of clinical skills instruction and simulated case scenarios. Educators model specific desired behaviours; learners observe the precise manner or technique in which a clinical skill or behaviour should be performed (Torre et al, 2006). Tyler (1949) argued that curriculum design should be determined by explicit objectives expressed in terms of changes the learning is supposed to produce in the behaviour of students. The emphasis is on programme goals and objectives; this was widely accepted in the early 20th century. Midway through the 1970s, there was opposition to the behavioural objective's curriculum model because of its emphasis on the process rather than the outcomes of the programmes (Frank et al, 2010).

Outcome-based education (OBE) rose with emphasis on programme and learner outcomes than on the means and methods for achieving them. OBE refers to the process of focusing and organising an institute's entire programme and instructional efforts around the clearly defined outcomes that all students are required to demonstrate when they leave the institution (Spady, 1994). OBE is an educational system that prioritises goals, objectives, accomplishments, and outcomes. It is a realistic approach currently used as part of the quality assurance strategy, in which decisions about curriculum and instruction are driven by the exit learning outcomes that learners should demonstrate at the end of a programme. Learning outcomes are also referred to as intended learning outcomes, instructional objectives, educational objectives, behavioural objectives, performance objectives, terminal objectives, subordinate skills, subordinate objectives, general instructional objectives, specific learning outcomes and competencies (Rao, 2020). Whereas the traditional model is based on knowledge objectives, which tend to highlight the instructional process regardless of the programme's final product. OBE takes the opposite stance: outcomes determine all curricular decisions, while curriculum procedures are secondary (Harden, 1999). This is summarized in the figure below:

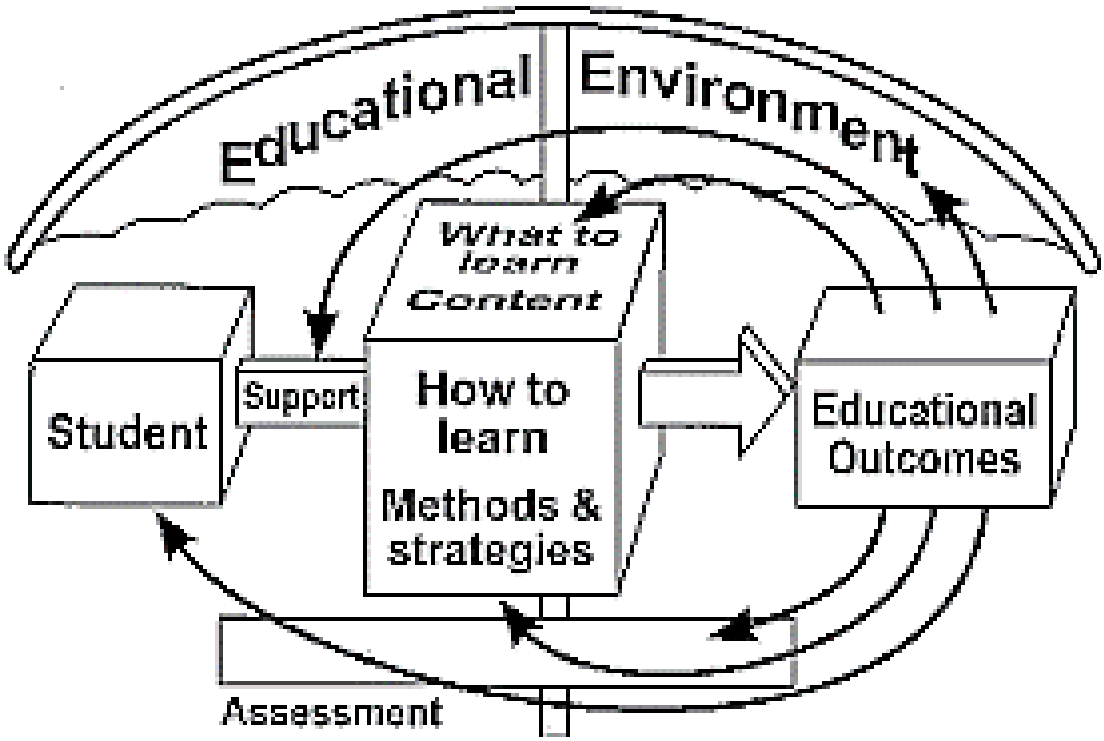


Figure 1: A framework illustrating a model curriculum showing how critical outcomes are in OBE. Adapted from Harden et al (1999).

This model indicates that educational outcomes are central in the creation of the students' educational environment, what should be taught, teaching strategies, the support to be rendered to students and the type of student assessment to be done for learners to achieve the outcomes.

An educational outcome is what a student should be able to do after completing an academic programme, course or instructional unit successfully. Outcomes serve as the foundation for effective interaction among stakeholders. Because the outcome is a product of learning, therefore, product defines process in OBE. It is results-oriented thinking the inverse of input-based education which emphasises on the educational process (Rao, 2020). According to Spady (1994) OBE has two purposes: ensuring that every learner has the skills, abilities, and qualities necessary for success after leaving the educational system. Organising and managing educational systems in a manner that all learners benefit from those outcomes. Furthermore, OBE has three premises:

- All learners can learn and succeed, however, not within the same period and not in the same manner. Outcome-based systems are in place to ensure that all students graduate as successful learners on outcomes deemed critical to their future. Therefore, OBE educators are constantly encouraged to explore better ways of designing and delivering instruction, particularly in light of student learning rate differences.
- Successful learning promotes more successful learning.
- Educational institutions control the conditions that directly affect successful learning.

Outcomes are not psychological states of mind, values, beliefs, or attitudes, instead, they are the practical applications of what is learnt; they are what learners can do with what they know and have learned. They are acts and performances that embody and represent learner competency to successfully utilise tools, knowledge, information, and ideas. A significant advancement from knowledge alone is having students apply what they have learned to meaningful tasks. Outcomes must be defined in accordance with the actions or demonstration processes being sought because they require actual doing rather than just knowing or a variety of other mental activities. Educators must use observable action verbs such as describe,

explain, design when developing outcomes, rather than unclear non-demonstration processes (Spady, 1994; Biggs & Tang, 2007). Learning outcomes apply at institutional level as a declaration of what skills university graduates are expected to possess, at programme level as a declaration of what individuals who complete a specific degree programme should be able to perform and at course level as a declaration of what learners ought to perform after taking a particular course. Graduate characteristics provide helpful guidelines for designing programme outcomes, which are then addressed by the outcomes of courses (Biggs &Tang, 2007; Rao, 2020).

Competency-based education is a strategy to preparing health care providers for practice that primarily focuses on graduate outcome abilities and structured on competencies drawn from an understanding of societal and patient needs. It offers increased responsibility, flexibility, and learner-centeredness while downplaying the importance of time-based training (Fullerton et al, 2013). The CBE model views the curriculum as the 'end result' of a needs assessment, rather than the structure that limits instructional objectives and assessments. In CBE success is based on the ability to achieve standards that are mostly set by stakeholders outside the educational programme. The critical issue is that the learner reaches the specified level of performance in a competency; how he or she reaches that point, the educational process, is secondary. CBE focuses on learner achievement of competence rather than time (Gruppen et al, 2012). CBE prioritises education results, making it more transparent and accountable to learners, policymakers, and stakeholders. Identifying a discipline's values, aims, and priorities is crucial to identifying competences. This allows for effective communication of these expectations to stakeholders both within and beyond the discipline. Priority is on learner performance on tasks and activities that align with competencies. Assessments emphasise behavioural metrics that integrate knowledge and skills from various educational experiences and curricular components (ten Cate & Scheele, 2007). Frank et al (2010) affirm that competency-based curriculum can be viewed as a sort of OBE and has been adopted by many professions. Firstly, the learning outcomes must be identified, made clear, and shared with all parties, including students, teachers, the public, and employers. Secondly, the learning outcomes should be the overriding issue in decisions about the curriculum. Educators should

consider the course content, instructional methods, and time allocated in line with the learning outcomes achieved by the course (Harden et al, 1999).

Morcke et al (2013) assert that both OBE and CBE focus on the product, as opposed to the process. Albanese et al (2008), affirm that the difference between outcomes and competencies is in the words ‘‘want’’ and ‘‘need’’. An outcome defines what skills and qualities learners should have, whereas a competency is a determination of what skills and qualities doctors need to have to care for patients. Focusing on learning outcomes is important since graduates achieve competence in all crucial domains, this is significant in an era of greater public accountability (Bisgaard et al, 2018). The needs of society the graduates serve are directly related to CBE curriculum planning (Frank et al, 2010). Hence, Neufeld et al (1993), refer to this as the demand-side medical education which starts by an examination of the demands, expectations, and trends in the health status of a particular population. McGaghie et al (1978) asserts that the educational programme is established after a thorough identification of important medical issues based on predetermined standards. Using outcomes as an organisational framework, educators create learning experiences that continuously integrate prior knowledge and emphasise on observable skills. The anticipated outcome of a competency-based programme is a health professional who can practice at a specific degree of proficiency, in accordance with local conditions, and to the satisfaction of local requirements.

CBE for the midwifery profession is a programme of study that has as its major learning outcome the acquisition and demonstration of all of the International Confederation of Midwives' Essential Competencies for Basic Midwifery Practice. CBE in midwifery uses seven evidence-based ICM competency domains and their associated knowledge, skills, and professional behaviours to provide a direct link between curriculum content and the expected learning outcome in the preparation of a fully qualified midwife for practice (Fullerton et al, 2013).

1.6.6 Comparison of CBE and the traditional model

An educational program that adheres to established standards and procedures is known as a traditional curriculum. This phrase describes a curriculum in its entirety, such as the courses that students must complete to graduate and the sequence in which they are offered, as well as the material covered in a particular class. Additionally, the traditional curriculum is strongly reliant on standards, with assessments used to measure student achievement and development. Standards-based curriculum adopts a teach-to-test structure, where students are given material that will help them pass a test but not necessarily information that they can utilise. The traditional curriculum does not give learners the chance to practise problem-solving and critical thinking abilities that are essential to thinking and learning (Gruppen et al, 2012). In CBE, students receive individualised support to keep them on track for graduation and career readiness. Under the traditional educational model, learners are expected to master college grade level and career ready standards. Students advance according to the instructor's pace regardless of whether they have mastered the learning objectives or need more time (Gervais, 2016).

According to Gruppen et al (2012), there are three fundamental characteristics that differentiate CBE from traditional model. Firstly, the traditional curriculum is frequently fixed to historical legacies which represent the traditions, priorities, and values of the faculty in that profession. The learning objectives reflect the educator's teaching preferences or priorities, what the educators want to teach, or think is significant. This curriculum driven learning objectives frequently falls short of meeting societal needs. In CBE a set of competences for the workforce to be trained is carefully mapped to the specific health requirements of the populations. Secondly, in CBE the educational outcomes are used to construct learning experiences to produce the necessary knowledge, values, and skills in the learners for them to achieve the competencies. Finally, the same set of competencies are used to create critical assessment procedures that examine how far they have been attained. The figure below illustrates the differences between traditional and CBE models**.**

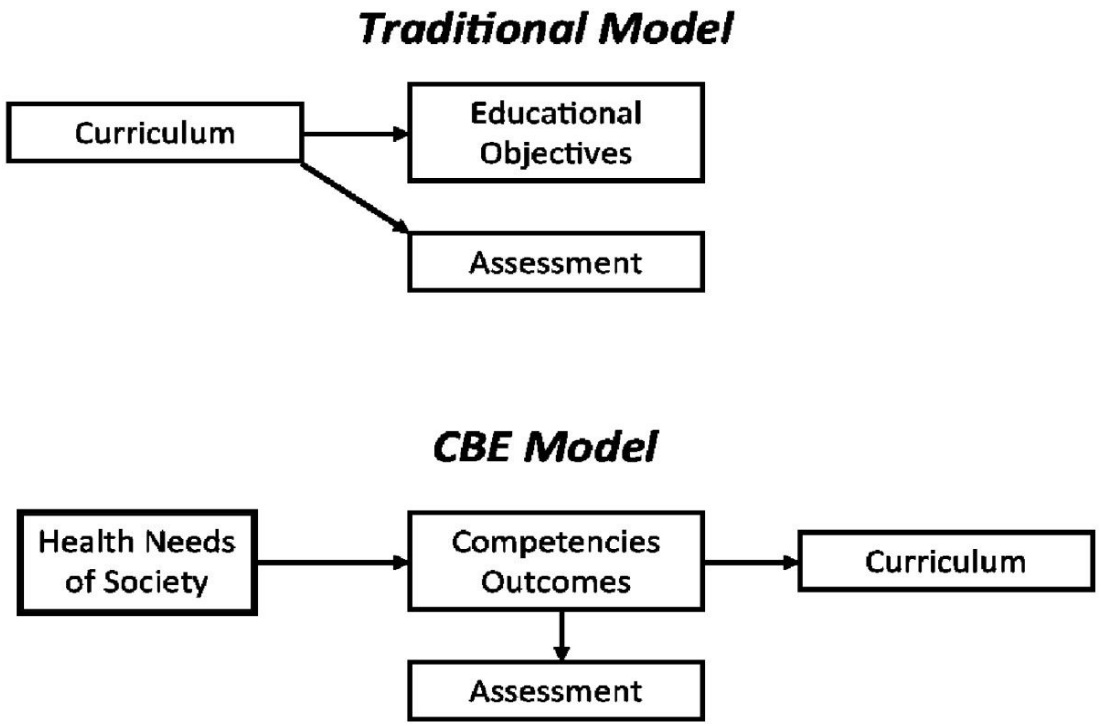


Figure 2: Comparison of traditional and CBE models**.** Adapted from Gruppen et al (2012).

1.6.7 What is learnt in CBE?

The acquisition of competence necessitates the learner's active participation in skill development. This heavily relies on understanding of the task's fundamental components, memory development and associations of the skills, repetition, and eventually the emergence of new ways of thinking and, consequently, the execution of the skill. Therefore, cognitive and psychomotor skills are interdependent. This domain of learning and movement together make up a psychomotor skill, and the theory that underpins it encourages the growth of all movement skills (Fotheringham, 2010). To attain the intended outcomes, learners must master the content specified in the intended outcomes. Miller et al (2009) assert that the educator's teaching activities and student's learning activities focus on the same goal. The intended outcomes outline the activity that students must complete to achieve the outcome as well as the content the activity refers to, and then assess the outcomes to determine whether they correspond to the intended outcomes. Educators in CBE emphasise more on what and how students are to learn than on the subjects that teachers are to cover. The teaching should incorporate the learning activity, activities are verbs, hence, educators stipulate the verbs learners should enact in the context of the

content discipline being learned. Educators describe the intended learning outcomes by teaching the topics not only in terms of the topic itself but also in terms of the learning activity the learner should engage in to achieve the outcomes**.** They outline not just what students should learn, but also how they should learn it and how to apply it**.** Their level of engagement is articulated by the verbs they use, which may be high- or low-level cognitive verbs (Biggs & Tang, 2011). Educators must design relevant learning opportunities that motivate learners to perform the learning activities (Saucier et al, 2012). In CBE what students learn and whether they learn it successfully are more important than when and how they learn it (Spady, 1994).

1.6.8 CBE Teaching and learning

Competency-based teaching is required in CBE. It is essential for midwifery educators to be competent in the practice of midwifery, with commitment to self-reflection and lifelong learning. Midwifery educators must be dedicated to the ideologies of CBE in the framework of adult and other modern learning theories, which include allowing learners to acquire and repeatedly perform or demonstrate the expected competencies in a supportive and enabling learning environment (Fullerton et al, 2001). The ICM (2012) affirm that the most crucial requirement is that learners actively participate in every facet of learning the professional behaviours, knowledge, and abilities required to demonstrate practice in a specific discipline.

Activating the intended verb in the outcome statement in the teaching and learning activity is constructive alignment (CA). CA combines a constructivist understanding of the nature of learning and a teaching design that is aligned to engage students in deep learning. Learning activities addressed in the intended outcomes are reflected in both the teaching and learning activities. It is founded on two principles: constructivism in learning and alignment in teaching and assessment design. It is constructive because it is based on constructivist theory, and learners construct their knowledge through their own activity. The 'alignment' in constructive alignment reflects that the learning activity in the intended outcome, expressed as a verb, must be activated in the teaching if the outcome is to be achieved, and in the assessment task to confirm that the outcome has been achieved. It is accomplished by ensuring that the intended verb in the outcome statement appears in the teaching and learning activity as well as the assessment task (Biggs & Tang, 2011). Constructive alignment

is an educator's best practice for defining and formulating good learning outcomes, designing interesting, instructive, and motivating learning activities, and selecting good and relevant assessment tasks; and strategically aligning outcomes, activities, and assessment tasks (Skoogh et al, 2012). Good teaching encourages students to use higher cognitive level processes (Biggs,1999). Misalignment can be problematic because even high-quality instruction cannot influence learner performance on given assessments if instruction is not aligned with assessments. The degree of alignment is determined by comparing outcomes to assessments, outcomes to instruction, and instruction to assessments. Misaligned assessment results do not reflect achievement of objectives (Anderson et al. 2001).

Defining attributes of competency-based teaching include:

- Understand how adults learn
- Match principles of learning and teaching
- Facilitate, rather than control learning
- Model humility, critical thinking, respect, competency and caring at all times
- Support acquisition of knowledge, skills and professional behaviours in all learning domains (cognitive, psychomotor, affective)
- Promote and expect learner accountability for learning
- Provide timely, specific feedback on learner progress beginning with learner self-assessment.
- Individualise learning experiences according to needs
- Expect increasing complexity of performance as the learner progresses throughout the programme.

These are presented in the figure below:

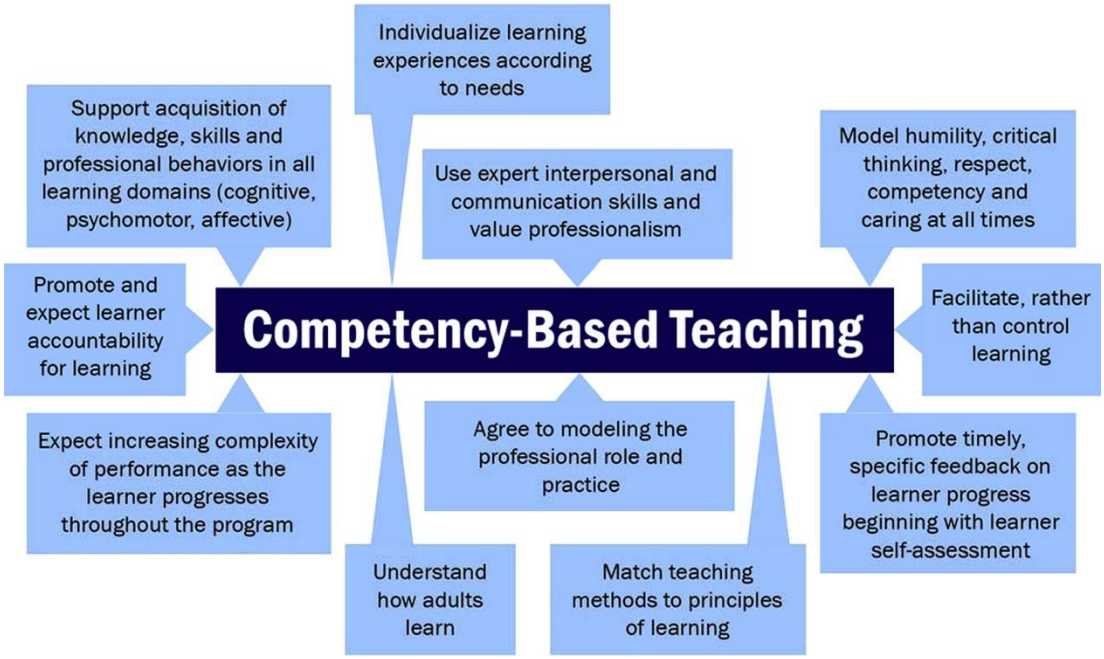


Figure 3: Attributes of competency-based teaching. Adopted from Knowles et al (2005).

The inter-relationships between the several attributes are based on:

- adult learning theories
- approaches to engage, support, and encourage active learner participation in their own learning
- knowledge of the domains of learning and how they require different teaching approaches to be successful
- a logical sequencing of expected outcomes from known to unknown, from simple to complex.

The most significant attribute for success in learning is the respectful partnership between teacher and learner (Fullerton et al, 2011). Educators help to create environments that encourage internal and external knowledge creation in relation to prior and present experiences, self-reflection, and social engagement, which is associated with simulation and constructivism. The educator constructs meaningful situations so that learners can naturally experience the value and significance of the competencies they must learn (Gervais, 2016).

Competency-based learning is defined by a set of characteristics of the student-learner, that complement the principles or attributes of competency-based teaching Learners should be clear in their understanding of what is expected, intended learning outcomes, and take responsibility for their own learning. Self-motivation, goal orientation, critical thinking, an obligation to life-long learning and ethical practice contribute to success (Fullerton et al, 2011). CBE learning methodologies require learners to share their knowledge and experiences as they interact in groups. The typical lecture approaches might not allow students to share their experiences together. It is crucial for educators to understand that students bring a variety of life experiences which the traditional lecture may not authenticate, thereby lowering students' confidence to actively participate in the learning process (Reynolds, 1997). In CBE the learning objectives for each competency are distinct and transferable (Gervais, 2016).

1.7 Thesis outline

An outline of what is contained in the subsequent chapters has been included to help the reader know what to expect. Chapter Two reflects the literature review of the study. This chapter is divided in two parts. The first part of the literature review reflects on four learning theories consistent with the teaching and learning practices at KCN. The second part presents a structured review of evidence relating to competency-based education. Chapter Three depicts the methodology and the methods which were employed in the conduct of this study. Chapter Four contains the results of the study exactly the way the participants narrated their real-life experiences in the teaching and learning of midwifery at KCN. The findings have been interpreted in chapter Five. In chapter Six each theme has been discussed reflecting the impact the teaching and learning practices have on the quality of KCN graduates. Chapter Seven is the final and concluding chapter; it provides recommendations to improve the teaching and learning of midwifery at KCN.

1.8 Conclusion

This is a qualitative study conducted at KCN in response to stakeholder complaints of poor performance of graduate midwives. The learning of midwifery in Malawi has always been situated within a community of practice from pre-independence, independence, and post-independence era. Before independence the learner worked alongside an experienced TBA until she was able to conduct deliveries. Later the training of midwives was done by missionaries at mission training institutions which are presently under CHAM. Currently, clinical learning occurs at public health facilities who have varying categories of midwives, equipment, resources, and clientele. Since independence to date there has been increase in enrolment, programmes, and the qualification of educators. With the blossoming of institutions offering the same programme, KCN now has competitors, consequently, stakeholders prefer Mzuzu University graduates who go through a similar programme. Based on these reports, I assume that the faculty utilise ineffective teaching practices which compromise students' learning. Therefore, this study explores the teaching and learning practices utilised by educators and students.

CHAPTER 2
LITERATURE REVIEW

2. Introduction

This chapter has two parts. The first is a narrative review on four learning theories that emerged from the data of this study. This is an inductive qualitative study. In inductive qualitative studies, theories, and patterns emerge from the collected data, the researcher does not test a pre-existing hypothesis. The inductive approach allows research findings to emerge from the frequent dominant or significant themes inherent in raw data without the restrains imposed by structured methodologies (Thomas et al, 2006). The inductive approach is used for meaning-making, hence, I allowed the data to speak to me and was able to pull out what is happening in the data and explained the findings using literature (Bingham, 2023; Bingham & Witkowsky, 2022; Rozzano & Savina, 2024). The second part is a systematic review of the literature on effective teaching and learning approaches in competency-based education.

2.1 Narrative review of learning theories.

The assumptions of learning theories and their applicability to KCN midwifery education and the recommended instructional designs are presented in this narrative review. Conducting literature review during data analysis and interpretation is consistent with qualitative research, it allows the researcher to compare findings with available evidence (Polit & Beck, 2012). The first theory is cognitive load theory (CLT), secondly, situated learning theory (SLT), thirdly, experiential learning theory (ELT), and fourthly, psychomotor skills learning theory. A justification regarding the relevance of each theory in this study will be provided. Concepts of these theories will provide the basis for the analysis of the teaching and learning practices reported by participants in this study. This will help in determining if educators and students utilise evidence-based teaching and learning strategies as required by the nurses and midwives' council of Malawi. Furthermore, the theoretical assumptions will be the foundation of recommendations in this study.

2.1.1 Cognitive Load Theory

CLT is a theory about the way the brain learns, stores and processes information. It presumes that certain aspects of information organisation and human cognitive architecture interact, and this interaction has significant effects on how people learn and comprehend (Pollock et al, 2002). Centre for Education Statistics and Evaluation (CESE) (2017) states that cognitive load theory illustrates that instructional methods are most efficacious when aligned with the cognitive processes of human learning and knowledge application. To comprehend CLT it is essential to understand how working memory and long-term memory process and retain information.

2.1.2 Working memory

Working memory, originally called short term memory is a system that temporarily holds and manipulates information when performing a variety of cognitive tasks such as comprehension, learning, and reasoning. What one is aware of at any given moment approximately corresponds to working memory (Rose et al, 2010). From a general perspective, CLT holds that processing instructional information results in cognitive load, which is located in working memory and impacts learning outcomes (Gerjets, et al, 2009). Information is actively processed and changed in working memory in real time after acquiring it from sensory systems via sight, touch, and hearing. Working memory is only capable of holding a finite number of items, but not for size, sophistication, or complexity (Sweller et al, 1998). It is frequently challenged with processing new knowledge; thus, it is simple to overload a person's working memory due to the mental processes required to complete and understand a new activity (Weidman & Baker, 2015) because it can only keep a certain amount of knowledge at a time (Miller, 1956). It is restricted in capacity; hence information is lost within thirty seconds (Clark et al, 2012).

2.1.3 Schema

Anything that has been learned and is regarded as a single entity is a schema. The schema combines a lot of information if the learning process has been ongoing for a while. It is a mental framework that organises the components of knowledge in a practical manner. The construction of schemata enables the structuring and storage of information in long-term memory, reducing workload on working memory (CESE, 2017). Schemas reduce workload on working memory by enabling an individual to disregard most of the associated information (Sweller & Chandler, 1994). The purpose of learning is to save automated schemas in long-term memory; this

distinguishes a novice's and an expert's performance because a large store of schemas is a prerequisite to skilled performance (Sweller, 1994). Educators can assist students to construct schema by using teaching approaches that enable learners to process information in the working memory and transfer it to the long-term memory for more learning to occur (CESE, 2017). Learning depends on the acquisition of schema and the transition of taught behaviours from controlled to automatic processing (Sweller,1994).

2.1.4 Automation

This is a significant step in the creation of a schema since it implies that data may be processed automatically with little conscious effort. It takes much effort to become automatic, but there is no upper limit to how complicated a schema can become (Sweller et al, 1998). Developing automaticity is essential for learning new abilities, and requires persistent practice. With enough practice, learners can become proficient in the skill, improve their performance, and do it swiftly and consistently in a variety of situations (Oermann et al, 2016). Information can be processed without placing a heavy burden on the brain's already constrained processing power due to automatic recognition (Sweller & Chandler, 1994). Automaticity frees the working memory, allowing it to focus on tasks requiring greater cognitive effort.

Learners with a large number of automated schemas can handle more challenging tasks than learners without (Weidman & Baker, 2015). According to Oermann et al (2016), acquisition of motor skills occurs in stages, hence attainment of automaticity occurs over time through repetition and enables the learner to perform familiar tasks accurately and efficiently. Educators and learners teaching and learning practices can help learners to achieve automaticity**.** A favourable learning environment may be created by giving learners adequate time to practice clinical skills, availability of mannequins, presence of educators to provide the appropriate support and feedback as students practice skills, and students making purposeful practice plans. Deliberate practice is a demanding activity that can be done for a short time daily without causing exhaustion (Ericsson et al, 1993; Oermann et al, 2016).

2.1.5 Long term memory

Long term memory is the system that stores a lot of information semi-permanently. Long-term memory is the large repository of knowledge and a record of preceding events (Cowan, 2008), its enormous capacity enables a person to be proficient in any subject. According to Sweller et al (1998), information stored in long term memory contains large, complex interactions and procedures. With the aid of information held in long term memory, working memory is capable of highly complex interactions. A person can organise and store knowledge using information stored in long term memory, which lessens the stress on working memory. Long-term memory spontaneously stores information and schemas without the person's knowledge, and activates it, when required, hence reducing the working memory (Josephsen, 2015). An individual's expertise in any subject including problem solving reflects knowledge stored in his or her long-term memory (Sweller, 2004).

2.1.6 Types of long-term memory

According to McLeod (2010) long-term memory is divided into explicit (knowing that, declarative) and implicit (knowing how, non-declarative). It refers to body movements in using objects. Explicit long-term memory is responsible for storing information about the world, such as knowledge about the meaning of words, and general knowledge. Knowledge held in explicit long-term memory focuses on "knowing that" it is declarative, it is learned and involves recalling meanings from statements about things (Biggs & Tang, 2007). Declarative knowledge is reportable, subject to verbal description when adequately activated. It is mostly indexed by overt memory tasks such as recognition and recall. Declarative knowledge can be acquired by observing and being instructed. It can be acquired rapidly, leading to significant changes in memory in a single exposure.

Procedural memory is a part of implicit long-term memory, it is unconscious and automatic thought, responsible for knowing how to perform skills or actions, it is memory of motor skills (Biggs & Tang, 2007). Procedural knowledge shows how to complete a task and is attained through following and performing instructions step-by-step (Yilmaz, & Yalçin, 2012; Ntim, 2013). It is acquired by 'doing', behaving in response to stimuli by repetition and practice. Procedural knowledge is often indexed by implicit memory tasks like performance of a skill or tasks subject to repetition. It is retained longer than declarative knowledge, by performing. Declarative and

procedural knowledge can be stored both visually and verbally; dual coded knowledge is easily recalled, and this has significant educational implications. It supports the general teaching principle of explaining and demonstrating new material to learners (Clark & Paivio, 1991).

2.1.7 Types of cognitive load

2.7.1.1 Intrinsic cognitive load

Intrinsic cognitive load relates to the learner's prior knowledge and the degree of difficulty of the material being studied (Young et al, 2014). A subject that is challenging for a novice may be quite simple for an expert (Sweller et al, 1998). The intrinsic load of a task is determined by the quantity of informational components and the degree to which those components interact with one another. Learning is difficult when there are large demands on working memory resources, but simpler when there are few demands because there are fewer working memory resources needed (Paas et al, 2010).

To reduces intrinsic load, the simple-to-complex technique is used. This involves providing learners activities that initially require them to apply fundamental physical concepts before giving them assignments that demand them to apply sophisticated tasks (van Merrienboer et al, 2010; Young et al, 2014, van Merrienboer et al, 2003). Another method is using the part-whole approach which involves presenting high-element interactive materials in their whole from the outset while using learning exercises that direct the learner's attention to specific subsets of interacting parts, known as a whole-part strategy.

2. 1.7.2 Germane load

Germane cognitive load is the load that learning, or the act of putting information into long-term memory, exerts on the working memory through the creation of a schema (CESE, 2017). It involves working memory capabilities that learners need to manage intrinsic cognitive load (Paas et al, 2010). Germane load enables the learner to cognitively assimilate information more deeply, structuring and integrating the chosen content to understand it (Stull & Mayer, 2007). Higher-level intricate activities that go beyond merely activating and memorising information cause germane cognitive load; these processes are directly related to schema construction and automation (Gerjets et al, 2009). Schnotz and Kürschner (2007), affirm that instructional designs that are supportive and beneficial for effective learning produce

germane cognitive load. Worked examples and expertise reversal effect are two teaching techniques that maximise germane load. With worked examples, an issue is given to the students that has previously been resolved, with each step being well discussed and shown. Guided examples reduce the load on the student's working memory, enabling the transfer of information into long-term memory (CESE, 2017). Paas and Van Merrienboer (1994) conducted an experiment in which they predicted that students in the worked conditions would demonstrate more effective and efficient transfer performance, that is, higher performance achieved with less time and less mental effort for training, than learners in the conventional conditions. Results showed that training learners with worked examples took less time than training learners with conventional problems. The idea of germane cognitive load is similar to the idea of deliberate practice (Van Gog et al, 2005). Deliberate practice will be discussed later.

2.1.7.3 Extraneous cognitive load

Extraneous cognitive load relates to the way the subject is taught; it hinders learning because it does not support the formation of schema and automation, but it can be changed by instructional interventions (van Merrienboer & Sweller, 2005). Worked examples and expert reversal effect are not connected to extraneous load. Additional tactics include: the redundancy effect, the split attention effect, and the duel model effect/ modality effect.

2.1.8 Redundancy effect

The redundancy effect entails avoiding reading the text that is displayed on the screen when presenting content via power point presentation. By doing this, educators give learners the same material in many formats, overloading their working memory (CESE, 2017). In this instance, both the text on the screen and the reader can be comprehended independent of one another. The same content is being delivered on two or more occasions and in a variety of formats (Sweller et al, 1998).

2. 1.9 Split attention

Split attention occurs when learners must consult two sources of information at once when learning something. In these circumstances, the learner must simultaneously keep both sources of knowledge in working memory and consciously combine them. Because of the significant cognitive load this exerts on working memory, it hinders learning and the transfer of pertinent information to long-term memory (CESE,

2017). Before the instructional material can be understood, learners are forced to divide their attention between the two sources and cognitively integrate the separate sources of information, which is likely to place a significant cognitive load on them (Chandler & Sweller, 1992). The effect occurs when learners must divide their focus between and cognitively integrate various sources of knowledge (Yeung et al, 1997). Tarmizi and Sweller (1988), assert that the split-attention effect can be lessened by physically integrating separate sources of knowledge so that the learner does not have to mentally integrate them. Split-attention effect was studied in two studies, and the results showed that physical integration may lessen cognitive load and hence promote learning (Chandler & Sweller, 1992).

2.1.10 Dual model effect/Modality effect

Working memory has a visual and auditory processing paradigm (Mayer & Moreno, 1998). Consequently, information given using a dual model enables the working memory of the visual and auditory systems to store visual and verbal representations, respectively. In a review of eight studies concerning whether multimedia instruction is effective, Mayer (1997) found that when text and animation are both presented visually, the learner's visual attention must be divided between the animation and the text. This disrupts the process of creating links between visual and verbal information and overloads the learner's visual attention, leading to loss of some of the information. Visual attention is maximised when text is delivered auditorily and the accompanying animation is shown visually. Because the learner can process the representation of the text inside an acoustic working memory and the representation of the animation within a visual working memory. The likelihood of the learner making connections between verbal and visual representations increases. Utilising both auditory and visual channels increases working memory capacity and promotes efficient learning (CESE, 2017). A crucial part of nursing students' clinical skill development is putting theory into practice. Achieving positive results and ensuring patient safety depend heavily on a learner’s capacity to apply knowledge in an efficient manner.

2.1.11 Situated learning theory

Situated learning theory (SLT) is another learning theory consistent with the implementation of the midwifery programme at KCN. According to the participants, learners are placed in authentic settings and they are involved in real settings of daily practice, among qualitied midwives of various qualifications. SLT recommends delivery of knowledge in an authentic setting, and the importance of learners' involvement in real settings of daily practice for knowledge to be useful (Lave & Wenger, 1991). The SLT contends that learners learn more effectively when they actively engage in the learning environment rather than passively listening to educators in classrooms. Situated learning is a process that gives meaning to the real-world activities where learning takes place. The idea is that learning should be seen as more than just the transfer of information but as an integrated process that involves participation (Gawande & Al-Senaidi, 2015). To contextualise learning is to position thought and activity in a certain place and time, to include other learners, the environment, and the activities to generate meaning. To locate in a particular setting the thinking and doing processes experts utilise to accomplish knowledge and skill tasks. Learners build their own knowledge from relationships with their peers, activities, environmental cues, and the social structure of the community they live in (Stein, 1998).

Three interconnected elements form the situated cognition principles used in nursing education: people (community, including patients, families, nurses, doctors, and auxiliary employees), ingredients or tools (previous knowledge or concepts), and activity (participation in authentic real-life events). The learner interacts with the context of the situation, which includes the participants, objects, and activity. There is a mutual exchange, and each is influenced by one another. The diagram below depicts components and principles within the situated cognition framework:

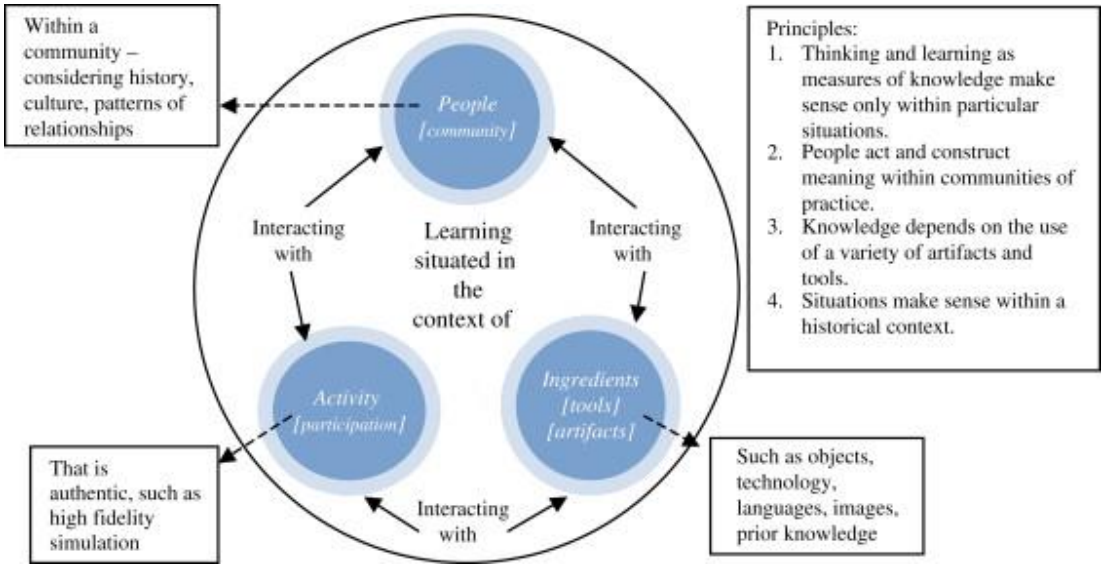


Figure 4: Situated cognition framework. Adapted from Paige and Daley (2009)

According to Lave (1991), learning is a social phenomenon established in the actual, lived-in environment. The process of changing knowledge is integrated with processes of changing identity through membership in a community of practice through legitimate peripheral participation in ongoing social practice. Communities of practice have a relational, organisational quality called mastery. Developing an identity as a member of the community and becoming a knowledgeable skilful member are part of the process. The more experienced members inspire, mould, and give meaning to the newcomers. According to Floding and Swier (2002), the presence of community members with various degrees of expertise enhances the quality and richness of the learning process for the newcomers. Newcomers gain tacit knowledge from older members through interacting with them and taking advantage of informal learning opportunities that facilitate the sharing of this knowledge. This provides newcomers the chance to experience real-world situations of everyday practice where they can observe and emulate the conduct of midwives, acquire the culture, learn pertinent language, and eventually begin to behave in accordance with the midwives' standards (Lave & Wenger, 1991). Brown et al. (1989), assert that learning is a sort of enculturation in which people, consciously or unconsciously, acquire the behaviour and belief systems of a new social group from an early stage**.** Learning is perceived as taking place in SLT when learners

enculturate into their communities and actively engage in the dissemination, reproduction, and transformation of knowledge about agents, activities, and artefacts. Knowledge allows you to participate competently in the intricate web of connections between individuals and events.

The situated learning approach provides educators with the opportunity to teach learners how to reflect in practice because learning occurs in rich real-life experiences that give sufficient learning opportunities to reflect on (Gonen et al, 2016; Ralston, 2005). Educators should recognise teachable moments, take advantage of them, and use them to facilitate student reflection. Reflection could take place later, in the conference room, following a significant event, such as a mistake made or noticed by one of the learners, a difficult client interaction, or even a great client management achievement (Branch & Paranjape, 2002). Nicole and Dosser (2016) assert that because people have different recollections of the same event, a colleague's perspective can be instructive and useful during reflection. A study undertaken by Gustafsson, and Fagerberg (2004) sought to explain registered nurses' reflection experiences in relation to nursing care scenarios and to comprehend how registered nurses employ reflection in their daily work. Findings showed that nurses could empathise with patients' situations, explain their emotions to patients, act in the patient's best interests, and had insight into their needs. Nurses admitted that reflection allowed them to be more emotionally invested in providing care.

2.1. 11. 1 Legitimate peripheral participation

A legitimate peripheral participation entails that beginners are engaged in real-world settings of everyday practice, applying knowledge, and using tools in a beneficial yet low-risk manner. It provides a two-way link between the development of knowledgeable skills, identity, the production of persons and reproduction of communities of practice. Newcomers transform into old timers through a social process of progressive central participation, which depends on rightful access to continuing community practice. Within the community of practice, social contact and teamwork are typically involved. Over time, novices progressively leave this group, engage in increasingly sophisticated and dynamic activities, and eventually take on the more dynamic and complex activities, and subsequently transition into the role of an expert. The entire process happens unintentionally. Such learning encompasses a whole person’s full participation in the community, the person participating in

performing new tasks and functions, mastering new concepts, and it is a construction of identity (Lave & Wenger, 1991). A community member is regarded competent when they can demonstrate their understanding of the situation and capacity to act in a way that is respected and valued by members of the immediate community of practice as opposed to the acquisition of skill or knowledge from textbooks. As the newcomer is drawn further in, more tasks are made available for him or her to complete to go from the beginner to mastery or competency level (Contu and Willmott (2003).

2.1.12. Experiential learning theory

This theory is also relevant to this study considering that learners are actively involved in care of clients. Learners have hands on experience as they provide care to clients along with qualified midwives in antenatal, labour and delivery suite, and the postnatal ward where learners interact directly with the realities they are studying. According to the ELT, learning is the process through which information is gathered from and transformed through experience. Active, interactive, or learning by doing are examples of experiential learning. It is thought that involvement of learners in the learning process improves their learning (Kolb & Kolb, 2011). Experiential learning, entails placing students in settings where they come into close contact with the realities being studied and where learners get an understanding of the skills through active engagement. Through the act of reflection, adaptive experience can improve future experiences (Kolb, 2014). Experiential learning differs from traditional education in that it takes an "inside-out" rather than an "outside-in" approach to learning. In traditional education, a teacher serves as a subject matter expert who transfers information and knowledge to the student. Instead, the "inside-out" method capitalises on students' natural motivation and internal interest while building on their past knowledge and experience (Kolb et al, 2014). The idea behind experiential learning is that learners can learn on their own; the educator's responsibility is to eliminate barriers and provide conducive learning environments (Kolb et al, 2014).

For effective learning, Kolb (1998) proposed a model of experiential learning as a reflective, repetitive, four-stage circular process that the learner must go through. In the model, concrete experience (CE) and abstract conceptualisation (AC) are two opposing aspects of understanding experience, while reflective observation (RO) and active experimentation (AE) are two opposing dimensions of transforming

experience. A concrete experience is an unfamiliar scenario or event or a reinterpretation of a current experience (McLeod, 2017).

The diagram below depicts Kolb's reflective cycle:

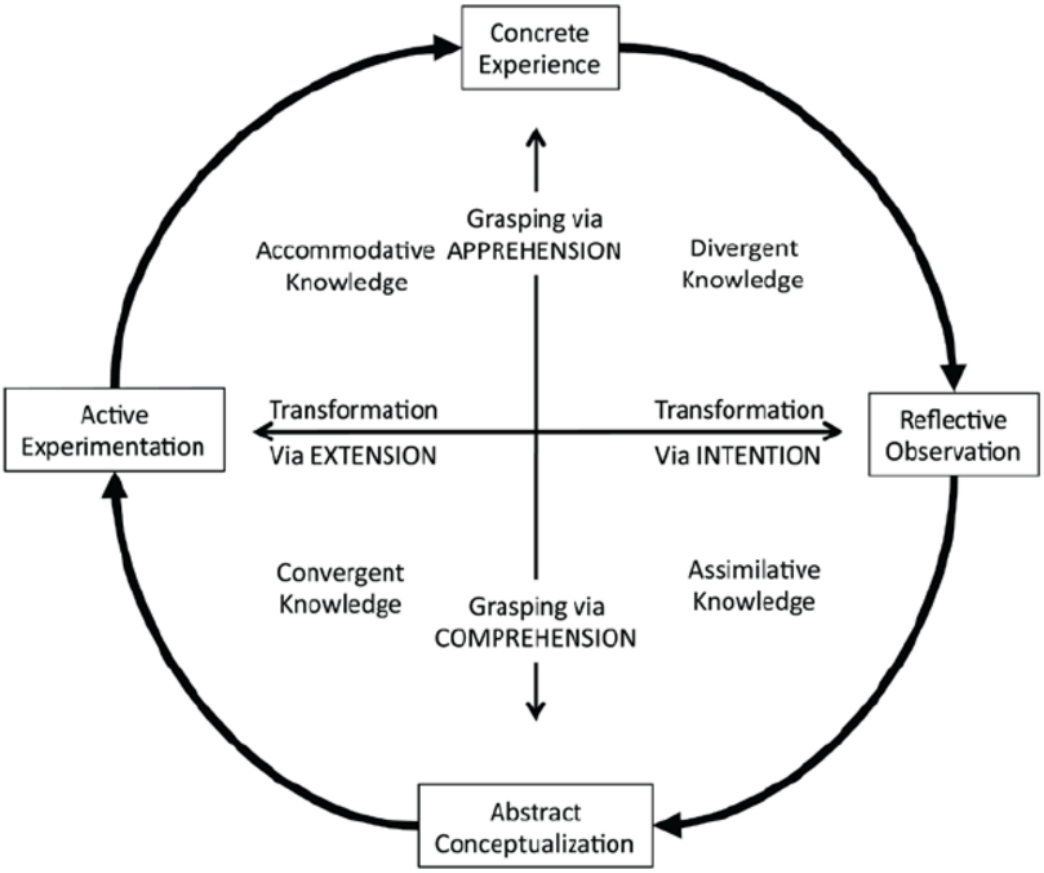


Figure 5: Kolb's Experiential learning cycle (Kolb & Kolb, 1984).

Experiential learning entails creating tension among the four learning modes in response to contextual demands. In response to the learning setting and what is being learnt, the learner goes through a cycle of experiencing, reflecting, thinking, and doing. Learning is a by-product of actual experience, and it serves as the foundation for observations and reflections. The learner absorbs these reflections, transforms them into abstract concepts, and uses those concepts to derive new actionable implications. The results can be explored in-depth and used as guidelines when developing fresh experiences (Kolb & Kolb, 2005). The process of experiential learning is connected to how the brain functions. The sensory cortex processes concrete experiences, the integrative cortex at the back processes reflective observation, the integrative cortex in front of the brain creates new abstract notions, and the motor brain processes active testing (Zull, 2002).

Learners who are placed in diverse medical settings interact directly with the realities being studied (Kolb, 2014). This gives learners the chance to comprehend both simple and complicated abilities through active participation. The approach focuses on providing educational opportunities that satisfy the requirements of all types of learners in a variety of settings, including the classroom (Kolb & Kolb, 2017). As novices, they are stimulated or challenged by their first exposure to the new, or "concrete experience," and they totally immerse themselves in the novelty that they find stimulating or challenging. When learners examine and reflect on their actual experience, they are engaging in reflective observation. An abstract conceptualisation, is the process of developing logical hypotheses by incorporating observation follows**.** Learners engage in active experimentation, the final stage, by using these novel theories to solve problems and make decisions (Amod & Brysiewicz, 2019). When learners complete all four phases of the cycle, it is deemed that they have learnt effectively (Kolb, 1984).

Educators can help learners complete all stages of the learning cycle. Depending on the objectives of the training session, a variety of teaching methods can be utilised during the initial phase of concrete experience, ranging from the more passive like lecture, to the more active, like skill practice. Other teaching approaches include case studies, role play, simulations, movies, slide shows, and games. This first stage gives learners the opportunity to participate actively in something (Edinyang, 2016). After the initial stage, the educator directs the students to the reflection phase of the cycle. (McLeod, 2017). It is crucial to pay attention to discrepancies between experience and understanding throughout the phase of reflective observation of the new experience. Students engage in a structured reflection on the activity they participated in during the experience phase and share their thoughts with their peers. They can speak up as a whole group, in small groups, or individually. They talk about their intellectual and emotional responses to the activities they were involved in. With the help of the educator, they work to connect these ideas and emotions to make sense of the event. During this stage, the educator adopts the role of a subject specialist and uses an authoritative, reflective approach to assist students in organising and connecting their reflections to the body of knowledge around the subject. The educator imparts knowledge by modelling and promoting critical thinking while systematically organising and analysing the subject-matter knowledge. Among the methods of

instruction are lectures, readings, and homework (Kolb et al, 2014). Techniques used to facilitate the application stage include:

- Individual work to create an action plan that "transforms thought into action"
- Students discuss each other's plans and assist in developing suggestions for action.
- The group shares portions of individual action plans to foster a sense of teamwork.
- Students identify additional learning needs (McLeod, 2017).

The teacher adopts a coaching role, assisting learners in using their knowledge to accomplish their objectives. He or she employs a cooperative, supportive approach working one-on-one with learners to assist them in drawing lessons from experiences relevant to their current situation. Assisting learners in developing personal development plans and providing methods for receiving performance feedback **(**Kolb et al, 2014).

During abstract conceptualisation or generalisation phase learners come to conclusions and generalisations that may stem from or be inspired by the first two phases of the cycle. Learners are helped to "step back" from the current experience and discussion, to critically analyse the material and draw conclusions that may broadly or theoretically apply to "real world." The following methods might be employed to assist with this step:

- Request and assist learners to summarise what they have learned into concise statements or generalisations
- Pushing back at students to help make them to think critically
- Correlating the findings and incorporating them into a theoretical framework.
- Making sure, that everyone who wishes to share a significant insight is given a chance to contribute within acceptable time frame
- Assisting the group to compare various conclusions, identifying trends where they exist, and recognising areas of disagreement

A new concept is created by reflection, or an old abstract concept is modified to reflect what the person has learned through their experience (McLeod, 2017). During this stage, the educator acts as the evaluator or standard setter. The educator supports students to learn how to use their knowledge and skills to meet performance requirements. Setting the knowledge requirements necessary for high-calibre performance, the educator adopts an objective, results-oriented style (Kolb et al, 2014). Learners are led into the cycle's active experimental stage after forming a few generalisations. Consequently, they instantly apply what they have learnt into practice and observe what occurs in their environment. Drawing upon insights and conclusions gained during the previous and other phases, students can begin to apply what they have learned into their lives by developing plans for more successful conduct in the future.

This idea is supported by the NMCM (2013) who require institutions to adopt evidence-based teaching and learning strategies that support a culture of lifelong learning. They highlight, reflective practice as one of the fundamental principles for maintaining competence NMCM's (2012). Reflection enables learners to incorporate new ideas, skills, information, and values into their already established knowledge frameworks (Black & William (1998). The aim of professional education is to provide learners with the ability to think like professionals (Grover, 1988).

2. 1.13 Psychomotor Skill Learning Theory

This is the last learning theory directly related to the teaching and learning of midwifery at KCN. Being a competency-based programme, learners are obliged to learn different skills necessary for the care of women and neonates throughout the maternity cycle. Therefore, it is paramount that educators understand the psychomotor skill learning theory for them to utilise appropriate teaching and learning strategies that facilitate retention and allow learners to apply and transfer what they learnt to new settings.

Psychomotor skills are movement-oriented tasks with an underlying rationale. Many of them involve clinical reasoning to determine the significance of the results and their consequences for patient management. The focus of learning motor skills is on the abilities themselves, as opposed to learning about the justification for their usage and the implications of findings. The learning of psychomotor skills emphasises on the development of precision, efficiency, and consistency over time (Oermann et al,

2016). The main objective of instruction is, or at least should be, to provide students with enduring and adaptable knowledge or skills. Skills are flexible when they are accessible in a variety of contexts of relevance, not just contexts that match those experienced during teaching, and are durable when they are accessible during periods of inactivity. Learning is the permanent modification of behaviour or information; therefore, instruction should enhance learning that supports long-term retention and transfer. Instead of facilitating performance, which is the temporary fluctuations in behaviour or knowledge that can be observed and assessed during or directly after the acquisition process (Soderstrom & Bjork, 2015)**.**

2.1.14 Automaticity

Automation is useful and significant in the development of psychomotor skills; it results from created schemas due of repetitive application. When performing a primary activity, a learner is very slightly impacted by other tasks that are happening. Increased automaticity increases performance speed (Taie, 2014). Because an automated schema serves as a central executive and directly commands behaviour without requiring working memory processing. Automation frees up working memory space for other tasks (van Merrienboer & Sweller, 2010). Logan (1985), affirms that automaticity is a process that takes time to develop; therefore, performance in later stages of practice becomes more skilful and automatic than performance at the beginning.

2.1.14.1 Skill practice

Dubrowski (2005), affirms that practice is the best learning strategy, and it results in relatively long-lasting changes in behaviour. Learning new motor abilities needs a significant amount of time and effort (Müssgens & Ullén, 2015). Extensive practice is necessary to reduce the time needed to complete a task, the proportion of errors, and the level of concentration needed (DeKeyser, 2020). Broadbent et al. (2015), states that the effectiveness of retention and application of knowledge from learning to real-world circumstances should be the primary goal of any training programme. Retention is the persistence of performance over time as a measure of learning. The training schedule impacts on how much skill transfer occurs. Greater performance, retention and transfer occurs with variable training schedules that alternate between multiple tasks than with blocked schedules where there is no task alternation (Müssgens & Ullén, 2015).

2.1.14.2 Important concepts in skill learning

White, Rodger and Tang (2016) define skill as a stable and consistent connection between perception of the body and the environment, and implementation of goal-directed motor actions, which is both consistent across recurrent performances of the action and can be flexibly modified in task constraints. Skill in this sense is mostly considered as a perceptual– motor function. Vanpatten and Benati (2010) refer to skill as the ability to do rather than underlying competence or mental representation. Cornford (1996) adds that skill and skilled performance have defining attributes as follows:

- The first defining attribute is that skill is acquired or learned and does not consist of inborn, instinctive actions, simple actions, or reflex reactions. Knowledge underpinning skilled performance involves a complex set of interrelated concepts and processes which must be acquired, learned, or constructed in the learner's mind. The complexity of the knowledge varies, just as skills vary in complexity and difficulty. This is the case with midwifery skills, which range from simple and less complex to difficult and more complex.

- Skill involves motivation, purpose and goals, motivation is imperative for initial learning and subsequent practice to achieve levels of proficiency. In line with this Ericsson et al (1993) affirm that student's motivation is instrumental for further improvements in performance. Cornford (1996) adds that motivation determines whether a skill will be performed well or poorly by an individual who has practised to high levels and continues to possess the capabilities to perform that skill to those levels. Furthermore, problem identification indicates motivation; it is, purposive behaviour that firstly identifies the problem and then engages in finding a solution. Shuell (1990) asserts that problem solving is a goal directed activity that neccesitates one's engagement in an active search for and identification of possible alternative actions and decision making regarding the course of action to be followed.

- Schemas are prerequisite for skilled performance. Skill acquisition occurs when there is accurate construction of mental schema through coding and rehearsal, and refined through practice before performance can be replicated and effective. Observation of skilled performance and analyses of skill tasks

from both behavioural and cognitive perspectives reveal that skilled performance consists of a series of linked steps whereby the sequencing and timing of the steps is of great importance. Effective skill training involves the development of schemas for recognition of appropriate or inappropriate times and places to engage in skill performance. It also involves knowledge of alternative approaches to utilise in certain contexts in response to different emergent stimuli. Educators and midwives in this study can utilise this when working with a student, by observing the sequencing and timing of activities during a procedure, the expert, can assess the skillfulness of the student. Similarly,when assisting a woman during childbirth, the skilled student would demonstrate his/her skills by knowing whether to flex or extend the head of the baby based on the situation at hand. This emphasises the importance of educator's availability during clinical practicum, to observe students' perfomance on daily basis to gain true reflection of a student's skillfulness.

- Skills require specific content and context knowledge and are performed and transferred in the presence of specific stimuli. Brown et al (1998) affirm that learning and problem solving are specific to content and context. In this study they are specific to midwifery education and practice at KCN. Additionally, Cornfold (1996) asserts that stimuli signal the skilled individual the appropriate time and circumstances to perform or apply the knowledge. Stimuli also serve as prompts to indicate the next appropriate step in a skilled process. Transfer of learning occurs when there are changes from the original context in which a skill was learned to where it is applied. Successful transfer of knowledge depends on the recognition of appropriate stimuli to show the need for transfer of formerly learned skills.

- Skills involve problem solving relevant to the context. Skilled performance involves elements of problem solving relevant to the particular context in which the skill is used.

- Skill involves relative judgements with evidence of individual differences in skilled performance. Individual differences exist among practitioners in specialist areas, in terms of skill and skilled performance. The quantity and quality of knowledge determine the observable individual differences.

Differences are also seen in aptitude and attainment of different levels of skilled performance, rates of acquisition and retention. Berliner (1988) concurs with this and states that there are differences in the behavior of the novice and an advanced practitioner related to difference in their experience such that a novice tends to conform to whatever rules and procedures they were told to follow unlike the advanced and competent practitioner.

- Standards of excellence are essential to judgements concerning skill existence and skilled performance. It is necessary for individuals to internalise standards of excellence for self judgement. Aditionally, standards of excellence are necessary for problem solving, in the absence of standards, it is impossible for the individual to prove that a performance is adequate and constitutes a skilled performance, or that a problem has been solved adequately. Kopta (1971) concurs with this and states that the assessment of motor skills is based on recognised standards of performance which originate from behavioural objectives which explictly define what is expected of the student. In Malawi, the reproductive health directorate has set standards regarding the acceptable levels of performance in midwifery which KCN educators are obliged to incorporate in their teaching.

- Skill involves comparable replication, this suggests that the performer can perform the skill to similar standards if replicated or repeated. Consistency of application over time is an important aspect of commonsense recognition of skilled performance in a learner. Such replication is possible if there has been an internalisation of consistent standards. This is the basis of this study, stakeholders perceive that KCN graduates do not perform to the expected standards post-registration regardless of being certified competent pre-registration, which suggests their lack of internalisation of the reproductive health directorate standards during the learning process. Cornford(1996) adds that single instances of assessment do not take into account that the skill may not have been adequately established to ensure consistency over time and replication to a comparable standard at a later time. However, the current, competency-based approaches in practice often rely on single assessments, whereby one correct performance may be considered sufficient to gain a satisfactory assessment of competence. In a pilot study that used simulators to

identify the most common breaches in asceptic technique during catheter insertion, Gonzalez, Sole (2014) found that one-time competency using simulator is not adequate to ensure skill mastery and retention.

- Considerable periods of time are required to achieve high levels of skill. Skill acquisition requires considerable amount of time for an individual to progress through the various stages in the development of expertise. And the more complex the patterns of thought or behaviour are involved in the development of skilled performance, the more time is likely to be required. This concurs with Ericsson et al (1993) who affirm that preparation time is required for attainment of exceptional performance.

2.1. 14.3 Phases of psychomotor skill learning

The cognitive phase

In this stage, learners are introduced to the skill, they are taught when and why it is used, what it entails, the equipment needed, the steps that must be followed, and the sequence in which they must be done. This phase focuses on accurate execution of the skill or technique. Learners learn the method and process primarily by observing a live or recorded performance by the educator and imitating that example. The educator describes the reasoning behind the skill, and the ramifications of the results (Oermann et al, 2016). The cognitive phase is brief, it involves paying attention, observing, and considering how and why the skill is accomplished (Osborne, 1986). Anderson (1982) affirms that this as the declarative stage, characterised by verbal mediation, because the facts need to be practiced in working memory in order to be accessed for the interpretative procedures. Soderstrom and Bjork (2015) reviewed the literature in the motor and verbal learning domains that necessitate the distinction between learning and performance. Findings revealed that providing support to learners when they are learning a skill minimises performance errors compared to when learners attempt to produce the skill without assistance.

Associative phase

During this phase, learners practice the skill to sharpen performance. They can implement the skill or procedure more consistently by practicing and mastering minute nuances like timing. Movements are subtly adjusted throughout this stage, resulting in more consistent performance than during the early learning stage (Oermann et al, 2016). Long practice sessions are necessary to produce proper performance (Osborne, 1986). Declarative knowledge is converted into procedural knowledge and applied directly, bypassing the need for interpretive procedures.

Autonomous phase

In this phase the learner keeps practicing and becomes proficient in performing to master the skill. The learner's actions become automatic, and he or she no longer needs to deliberate and pay attention to each step of the skill and what to do next. It is characterised by automatic correct performance, improved speed, accuracy, dexterity, and deeper understanding of application settings. Performance variations depend on the level that each learner is at (Osborne, 1986). Abernethy et al (1994), assert that experts differ from novices because of the knowledge they possess and how they utilise that knowledge. Therefore, experts have greater knowledge of both factual and procedural matters, are quicker and more accurate in recognising patterns, have information that is organised in deeper and more structured fashion, and have higher awareness of situational possibilities. They have better self-monitoring abilities, are better at anticipating actions, function with less effort and more automatically, develop movement patterns that are more consistent and adaptable, and can plan their movements in advance. Learning enhances the content and organisation of multiple memory states, producing more extensive, elaborate, and well-organised reference information as well as more thorough rule-based action procedures. Osborne (1986), affirms that college learners may achieve the ultimate autonomous stage of skill development, although this is not always the case. Gerrish (2000) studied newly qualified nurses' insights of the transition from student to qualified nurse. Findings revealed that newly qualified nurses had deficits in clinical skills.

2.1.15 Factors that enhance learning of psychomotor skills

Feedback

According to Oermann et al (2016), feedback is direct instruction from the educator that corrects performance flaws and reinforces the correct procedure. Sharma et al. (2016), assert that a learner has access to two types of performance feedback that can be used to predict how well they will do a motor skill. First, the task intrinsic feedback, or the sensory perception data that each sensory system naturally produces while performing a skill. The second is augmented feedback, which complements or enhances task intrinsic feedback. Extrinsic, or augmented feedback can be given to a learner vocally or nonverbally, as well as soon after or after a delay in time with respect to the relevant action (Winstein, 1991; de Oliveira et al, 2009) referred to this as concurrent and terminal feedback respectively (Lauber & Keller, 2014; Chiviacowsky & Wulf, 2007). Butler and Winne (1995) assert that feedback from outside sources can be incidental and result through unplanned interactions with the environment, peers, or adults. Even patients, family members, medical, and other midwifery students can provide feedback on a learner's performance (Glover, 2000). Gopee (2001) affirms that when learners critique each other's work, they give constructive criticism and participate in group reflection, and give each other truthful and helpful feedback. When learners assess the work of their peers and offer timely, specific, and personalised feedback they are also able to critically examine their own work. This is very significant for deep learning (Lombardi, 2018). Butler and Winne (1995) affirm that feedback is a crucial stimulus for self-regulated activities.

2.1.16 Effective learning practices

There are certain evidence-based practices that are recommended for effective learning that facilitate acquisition, retention of knowledge, and transfer to other contexts. These practices include: deliberate practice, goal orientation, metacognition, retrieval-based learning, dyad practice, and chunking strategy,

2.1.16.1 Deliberate practice

Weidman and Baker (2015), state that deliberate practice (DP) is a particular kind of practice that strives to improve performance. The learner intentionally practices a skill repeatedly to master it. DP is typically related with mastery learning because it focuses on the development and maintenance of crucial knowledge, skills, and values for practice (Kardong-Edgren et al, 2019). DP involves significant effort, is highly

structured, and focuses on overcoming deficiencies. It concentrates on well-defined tasks with manageable size and scope. Performance is observed throughout DP, and feedback is given for improvement. Any component of performance can benefit from DP, which improves both motor and cognitive skills. McGaghie et al (2011) conducted a quantitative meta-analysis to compare the effectiveness of traditional clinical education toward skill acquisition goals versus simulation-based medical education with DP. They concluded that DP is superior to traditional clinical medical education in achieving specific clinical skill acquisition goals.

2. 1.16.2 Spaced or distributed practice

Practice is preferable if it is spaced out across time rather than expecting learners to master a skill in one extended practice session. Interspersing practice sessions with breaks or other activities enhances long-term retention and skill transfer. The best way to practice a skill is to do so for twenty minutes a day, three days a week, for a few weeks (Oermann et al, 2016). In a randomised controlled trial Moulton et al (2006) examined the effects of a different approach in which learning is spread out over a number of practice sessions. They discovered that a skill that is learned in a distributed practice environment has better transferability than a skill that is learned in a mass practice environment. Massed learning is mass education, it is learning information without significant interruption, similar to cramming for a test. The ability to retain knowledge and apply it are crucial components of skill learning. (Weidman & Baker, 2015).

2.1.17 Goal orientation

Goal orientation is the term used to describe the implicit goals that students establish for themselves when put in situations where they have the chance to succeed or fail. The two main goal orientations are performance and learning orientation. Performance-oriented learners' primary objective is to demonstrate their abilities to others in order to validate those abilities. Their major objective is to demonstrate their proficiency; they avoid revealing their inability to perform the skill appropriately. In contrast, improving one's competency or knowledge in a subject is the primary objective of learners with a learning orientation. They are more concerned with genuine mastery than how others may believe them to be. Performance and learning orientation describe how a learner interprets obstacles and challenges**.** To performance-oriented learners’ failure signifies their innate ability or

weakness, hence they think abilities are fixed. Learning-oriented learners view setbacks as flexible and conclude that increasing their effort or modifying their approach will help them become more proficient because to them setbacks signify the need to get better (Weidman & Baker, 2015).

Ames and Archer (1988), affirm that a student's understanding and response to classroom events determines goal orientation. It is influenced not only by the activities taking place in the classroom, but also by the meanings that each student ascribes to them and the motivational stance that they adopt. Vandewalle (1997) asserts that learning goal-oriented students exhibit adaptive response patterns, are persistent, intensify their effort, participate in problem-focused self-instruction, and admit to enjoying the challenge. Performance-oriented learners exhibit maladaptive reaction patterns, which causes them to disengage from difficult tasks and lose interest in them. Learners who are focused on learning goals see effort as a valuable approach for building the skill necessary for future achievement.

2.1.18 Metacognition

Metacognition is the act of reflecting on one's own thinking, it includes admitting that one does not comprehend something (Weidman & Baker, 2015). The capacity to control one's thinking and employ appropriate techniques and procedures to fulfil one's goals (Medina et al, 2017). Knowing how to reflect on and evaluate one's own mind, how to draw inferences from that analysis, and how to put theory into practice are all aspects of metacognition (Downing et al, 2009). Flavel (1979) calls it an individual's awareness of and control over their cognitions. Metacognition has two components, metacognitive knowledge, and metacognitive regulation. The knowledge component refers to the knowledge one obtains about cognitive processes. The regulation component refers to real methods one uses to govern cognitive processes**.** Understanding what they already know and what they do not allows learners to concentrate on learning what they still need to learn, which is self-directed or self-regulated learning. Better critical thinking and action monitoring result from increased awareness of one's thought process.

Self-regulation refers to how a learner directs his or her goal-directed actions through time. Contrarywise, self-direction deals with one's motivation to learn more about a particular subject. To achieve the intended outcomes, self-regulated learning regulates a variety of processes, including cognitive and behavioural processes. Self-

regulated actions include planning, monitoring, attention, and effort. These controllable regulatory mechanisms are essential for self-regulated learning because they lay the foundation for future and ongoing professional development (Medina et al, 2017). Monitoring is a response to internal and external inputs regarding performance. A learner who values performance outcomes tends to pay greater attention to observing them. A learner must pay attention to behaviours that match the outcomes in order for self-monitoring to be successful (Kanfer & Ackerman, 1989). Thiede et al (2003) evaluated the role of monitoring accuracy in learning. They concluded that metacognitive monitoring is essential to learning because it gives a foundation for choosing what to restudy or how long to do so.

Metacognition is crucial in the health sciences, because it can help students learn more effectively and become better clinicians. It is required for the growth of critical thinking abilities (Medina et al, 2017; Ku & Ho, 2010). Halpern (1998), asserts that critical thinking is the application of cognitive techniques or methods that raise the probability of a desired outcome. It is intentional, logical, and goal-oriented, involved in problem-solving, developing consequences, weighing options, and coming to decisions. Evaluating one's thought process, the logic used to reach a conclusion, or the considerations considered when deciding are all examples of critical thinking. Critical thinkers apply the skills correctly, voluntarily, and purposefully in a variety of contexts. They assess the results of their reasoning, like the quality of a choice or the effectiveness of a solution. They employ sophisticated higher order skills like judgment, analysis, and synthesis. Higher level thinking involves reflection, context and self-awareness. Being mindful or metacognitively aware can reduce pharmaceutical errors in clinical settings because it improves awareness of one's thought process, critical thinking, and action monitoring (Medina et al, 2017). Educators can lead and evaluate learners' critical thinking by giving learners various opportunities for reflection and critical thinking practice. Halpern (1998) affirms that effective instructional strategies combined with assessment can help students develop their critical thinking skills. Similarly, the national regulatory body obliges nursing and midwifery institutions to incorporate scientific evidence-based methods including analytical and critical thinking in the curriculum NMCM (2013). Using problem-based learning (PBL) educators can help undergraduates to gain metacognitive abilities and growth, to enhance their learning (Nietfeld &

Schraw, 2002). Biggs and Tang (2007), affirm that PBL-taught learners think differently from traditionally taught learners.

2.1.19 Metacognitive apprenticeship

Medina et al. (2017) assert that cognitive apprenticeship is the most effective method for teaching metacognitive skills. It is a strategy for supporting and facilitating learning by giving learners the opportunity to develop, use, and acquire a variety of cognitive tools under real-world circumstances (Gardiner & Anderson, 2013). Cognitive apprenticeship, seeks to solve the issue of inactive knowledge by making the thought processes behind a learning activity transparent to both learners and educators. Wooley and Jarvis, (2007) affirm that the primary focus is on the prior and integrated thought to the task. Cognitive apprenticeship facilitates the efficient integration of academic and vocational education, which helps learners develop their conceptual knowledge of academic standards and internalise the thought processes involved in doing so. Cognitive apprenticeship comprises a cognitive element that emphasises on teaching the cognitive and metacognitive skills connected to a particular domain of knowledge (Ghefaili, 2003)**.** Consequently, Bloom developed a taxonomy of educational goals in the cognitive domain. He classified them into knowledge, skills, and attitudes. The cognitive domain includes information acquisition and the improvement of cognitive skills.

Blooms taxonomy is shown below:

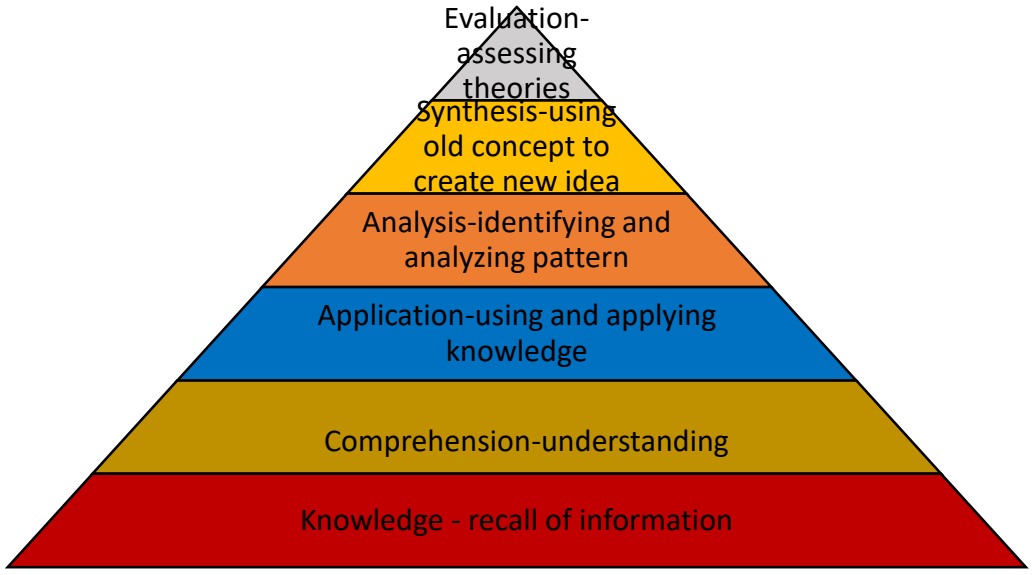


Figure 6: Original Bloom's Taxonomy (1956)

Later, Anderson et al (2001) revised the original Bloom's taxonomy and redefined the cognitive domain as the connection of the cognitive process dimension and the knowledge dimension. This is presented below:

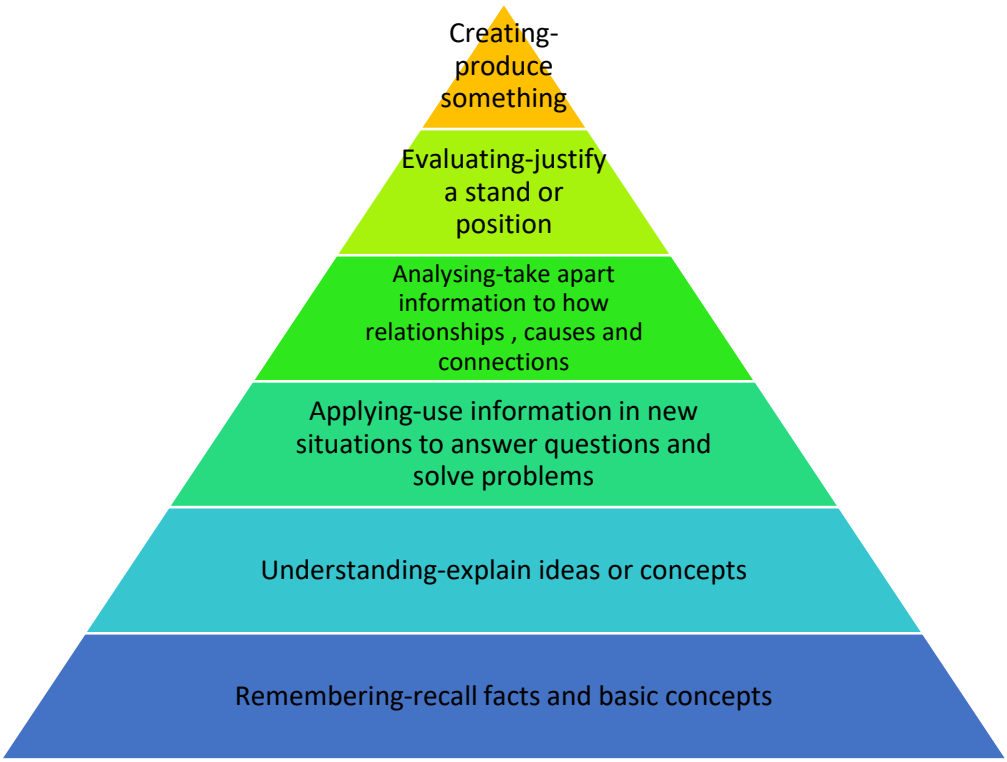


Figure 7: Revised Bloom's Taxonomy adapted from Anderson et al (2001).

The terminology of Bloom's categories was changed from nouns to verbs, and the last two categories were re-positioned, synthesis was moved to the top of the triangle under the name of create.

The updated Bloom's taxonomy is as follows:

- Recall requires bringing back details and ideas.
- The capacity to comprehend or to elucidate ideas or concepts.
- Applying information means using it in fresh contexts to address issues and find solutions.
- Analyse is the process of dissecting data to identify patterns, connections, and correlations.
- To evaluate is to defend a stance or viewpoint.
- To create is to produce something new.

The affective domain includes attitudes, feelings, and behaviours. Learning is not merely a cognitive process; it also involves learning behaviours, attitudes, and physical abilities. The way a learner interacts with things emotionally, such as emotions, values, appreciation, excitement, motivations, and attitudes, falls within the affective domain. The five sub-domains within this domain are: Receiving, the awareness of feelings, emotions, and the ability to utilise selected attention. Responding shows that the learner is actively participating. Valuing is the capacity to recognise and articulate the value of something. This involves the learner's capacity to express their thoughts and opinions on the many topics brought up in class. Organisation, is the capacity to prioritise one value over another and develop a distinctive value system. Characterisation is the capacity to internalise values and allow them to guide one's actions.

The final domain is psychomotor, whose goals focus on distinct physical acts, reflex reactions, and interpretive movements. It involves activities that involve movement or where the gross and fine muscles are utilised to express or interpret information or concepts. Reflexes or natural, autonomic responses are also included in this realm. Using motor skills and coordinating them are both parts of the psychomotor domain. It has seven categories: Perception is the capacity to incorporate sensory data into motor activity. Set refers to being prepared to act. Guided response, is the capacity to mimic a demonstrated behaviour or to use trial and error. Mechanism, is the skill and assurance required to translate taught responses into ingrained behaviours. Ability to accomplish intricate patterns of activities with skill. Complex overt behaviour, is the capacity to expertly carry out intricate action patterns. Adaptation is the capacity to change acquired skills to fit unique circumstances. Origination, is creation of novel movement patterns for a certain circumstance. Characterisation, involves internalising values and allowing them to guide the learner’s behaviour (Hoque, 2016).

The goal of the cognitive apprenticeship instruction model is making thinking visible. It differs from the traditional apprenticeship model because in traditional apprenticeship, the activities are presented as they occur in the real world and the process of carrying out a skill to be learnt is immediately observable. Learning is situated in the workplace; the skills are task-specific and it is rare that learners would come across circumstances where the ability to transfer skills to other contexts is

required. The expert demonstrates a task to the apprentice, observes the apprentice performing various steps of the task, then gradually gives the apprentice more and more authority until the apprentice is competent enough to complete the task independently. The fundamental concept of apprenticeship is guiding the apprentice through a task while also demonstrating how to complete it (Collins et al, 1991). In contrast, in cognitive apprenticeship the educator must purposefully make their thinking visible to the learners, likewise the learners' thinking must be made visible to the educator. Learners observe, enact, and practice the educator's ideas with the help of the educator and peers when it is made clear to them what they are thinking. The college curriculum incorporates abstract tasks in settings that make sense to the learners, indicating that the tasks were pre-planned. To encourage students to reflect on and explain the elements that are common across tasks, educators must give a variety of assignments. This aids students in generalising the skill, determining whether the skill applies or not, and autonomously transfer the skill in new contexts (Collins et al, 2004). Brown et al (1989) assert that cognitive apprenticeship techniques place emphasis on enculturating students into real-world activities through engagement and social interaction like effective craft apprenticeships.

2.1.20 Modelling

Modelling is an efficient method of imparting the necessary knowledge to quicken an observer's motor skill acquisition. An educator makes a superior model for skill learning than a peer because the higher the status of the model, the more the model will be attended to and imitated (Gourd & Roberts, 1982). Landers and Landers (1973) examined the relationship between some social characteristics of the model and modelling of motor task. Learners observed either a highly skilled teacher, a highly skilled peer, an unskilled teacher, or an unskilled peer model perform a complex motor task. Findings revealed that those who observed the skilled teacher performed at a higher level than those who viewed the unskilled teacher or skilled peer. Similarly, the NMCM (2013) obliges educators and those involved in the teaching of midwifery students in Malawi to keep their skills up to date through continuous professional development activities. Role modelling is important for professional growth because experts have tacit knowledge that goes beyond what is taught in the curriculum (Cruess et al, 2008). Paice et al (2002), state that a good role model can inspire, make the implicit clear, encourage reflection, and demonstrate compassion. Brightwell and Grant (2013) affirm that learners expect professionalism

from their educators. By continuously displaying proper verbal and nonverbal behaviours, the educator serves as a role model. He or she exhibits clinical expertise and sound judgment while fostering a climate of respect for one another, which is a sign of a good role model. Educators must continuously exhibit verbal and nonverbal behaviours that learners would deem kind, sympathetic, and humanistic as good health professional role models (Kotzabassaki et al, 1997).

Gardiner and Anderson (2013), state that after modelling, the learner engages in simulated practice which is guided hands-on practice with the assistance of the educator. This helps the learner to build confidence and establish competence. Reuler and Nardone (1994), assert that the most defining quality of a successful role model is the ability to demonstrate clinical skills at the bedside. Therefore, Ficklin et al (1988) advocate using positive role modelling as a teaching strategy in medical educational programmes. Hence, observational learning is an important technique used by learners in professionalism. They learn from the way midwives and their educators, interact with others, including clients (Karimi et al, 2014). Through the hidden curriculum, experienced professionals serve as practice teachers, mentors, and role models for learners, influencing the process of socialising learners into professional behaviours and practice (Allan et al, 2011).

2.1.21 Hidden curriculum

Hidden curriculum is learning that takes place through unofficial interactions between learners, educators, and others, or through organisational, structural, and cultural factors that are present in training institutions (Gaufberg et al, 2010). The hidden curriculum, consists of the accepted norms, practices, rituals, and elements of medical education's life-space that are taken for granted (Bandini et al, 2017). Kelly (2020), affirms that clinical encounters where learners observe behaviours or attitudes not included in the formal curriculum may be part of the hidden curriculum. It includes several significant components, like role models, laws and regulations, medical ethics, terminology used in the medical field, and the hierarchy of power in medicine (Bandini, et al,2017). As opposed to the formal curriculum, that occurs in the classroom through lectures, the hidden curriculum, exemplifies the cultural process of medical training through the socialisation of practitioners. As physicians internalise the behaviours, attitudes, and values exhibited to them in the moral community of medical school (Gaufberg et al, 2010). Schmidt (2016) asserts that

learners bring their cultural and personal values to nursing schools. Personal and professional values change as learners develop a professional nursing identity; they accept the new values and demonstrate them through their behaviours.

Kelly (2020) states that each nursing student has their own set of core values, ethics, and role model influences that they draw from their families and prior experiences. The interaction between these elements and the hidden curriculum has an impact on how they develop their professional identities. The hidden curriculum is present in many aspects of healthcare education and affects how learners are assimilated into the field. In the classroom, learners are instructed utilising lecture materials and prescribed readings, which results in the intended learning or formal curriculum. What a nursing student learns may be influenced by the intricate interaction of the formal and hidden curricula in the clinical, academic, and laboratory settings. The hidden curriculum is advantageous because it creates chances for reflection and discussion. Its content frequently conflicts with what is taught in the official curriculum in the classroom. Learners must manage these differences, particularly when they encounter gaps in professionalism and ethical concerns. Different attitudes and values that are exhibited in the clinical context frequently cause detrimental alterations in a learner's development. The hidden curriculum is essential for both professional and emotional development. It might directly improve patient care because patients have more meaningful interactions with their doctors when they trust them (Hopkins et al, 2016). Lipsitt (2015) states that the learner develops professionally and personally through modelling the culture of the medical school, and the hidden curriculum. Wright and Carresse (2002) sought to better understand many issues related to role modelling through the insights of respected physician role models. They found that physician role models were conscious of the fact that medical students were watching them closely and tried to model how physicians take care of patients successfully.

2.1.22 Retrieval based learning

Retrieval refers to study techniques that require a learner to actively regain knowledge from memory to retain it over time. It involves recollecting information without having it in front of you. It is a successful revision technique that requires learners to bring to mind previously learnt information stored as schema in long-term memory, strengthening existing schema (Weidman & Baker, 2015). The retrieval

process directly influences learning through knowledge modification, and improves the capacity to reconstruct that knowledge in the future. Asking learners questions in class promotes retrieval. Karpicke (2012) stipulates approaches utilised to integrate active retrieval in learning activities, like group discussions, reciprocal teaching, integrating questions into the lecture, and giving out quizzes in class. Karpicke et al (2014) recommends concept mapping as another useful strategy for retrieval-based learning. Retrieval practice necessitates that learners reconstruct what happened in a previous episodic context.

2.1.23 Dyad practice

This is when two learners work together to develop a skill that they will use on their own later (Bjerrum et al, 2014). This is related to the social learning theory, which contends that collaborative learning can help learners learn a complicated procedure even if they are inexperienced and make mistakes along the way. Learners can learn from one another through observation by paying attention to each other's actions, retaining the information in memory, and getting feedback on the results of the behaviour. Crook and Beier (2010) affirm that dyad practice is beneficial for metacognitive monitoring since it allows learners to discuss the rationale for their actions and results, which improves their learning. Additionally, since two learners share the same resources as one student, dyad practice promotes efficient resource use (Shanks et al (2013). Kowalewski et al (2019), recommend dyad practice when training time is constrained and where making efficient use of available resources is of the utmost importance. Kamali et al (2023) investigated the effect of dyadic practice on nursing students' clinical self-efficacy and empathy. They found that dyadic practice increased empathy in the intervention group compared to the control group. It decreases stress, loneliness and increases sense of belonging.

2.1.24 Chunking strategy

Chunking is a deliberate, goal-oriented process where information is recoded to be more useful. A chunk is a significant unit of data that is put together from smaller data units. Chunking is the process of creating a new chunk (Gobet & Lane, 2012). The chunking theory of learning states that practice is the process of picking up patterns from previously finished tasks. The ability to recognise patterns in a task is necessary for task performance (Rosenbloom & Newell, 1982). It lessens cognitive load during information processing by the learner. When a person initially

encounters a stimulus set each item is coded as a single chunk. With repeated exposure, many objects may be coded as one chunk, which explains human behaviour. Chunking generates changes in short-term memory capacity and processing speed, which are crucial mechanisms of the learner's development. It makes task behaviour improve over time in line with the learner's performance (Gary, 2012). Miller (1956) asserts that chunking regulates the amount of information a person can process at once. It also assists in problem-solving since some of the information-linked chunks provide recommendations for the best course of action. Chunking is one of the basic cognitive functions of humans and shows how internal cognitive functions are connected to the outer environment. Chunking occurs implicitly; chunks are a product of perceptual chunking, an automatic learning process. According to Miller (1956) recoding is a powerful method for increasing the amount of information that one can process.

2.1.25 Priming

Priming is a crucial in learning new skills (Taie, 2014). It is a cognitive repetition phenomenon in which a learner's response to a later conceptually connected stimuli are influenced by their earlier exposure to a particular stimulus. When a learner is exposed to something connected to a notion, their mental representations of that concept become active with little to no conscious effort of the learner, hence it is implicit learning. Long-term memory is activated during priming, and greater activation of specific informational units facilitates quick access to memories. Informational units that have been activated cause other, connected, or related units to also become active. Mostly being able to retrieve pertinent knowledge from memory more quickly aids learners in reacting more quickly when necessary (Trofimovich & McDonough, 2012). Schacter (1992) affirms that priming is a type of implicit memory because it can take place without any conscious or explicit remembrance of a prior experience with a stimulus.

2.1.26 Conclusion

Four learning theories relevant to the teaching and learning of midwifery at KCN have been discussed. Firstly, cognitive load theory which explains how the human brain learns and stores knowledge: long term and short-term memory. There are three types of cognitive load: intrinsic, extraneous, and germane load. Cognitive overload occurs when the total cognitive load exceeds the working memory capacity of the

learner. Educators are encouraged to utilise teaching and learning strategies that allow transfer of information into the long-term memory through schema construction and automation. Teaching recommendations that arise from cognitive load theory include worked example effect, expertise reversal effect, redundancy effect, split-attention effect, and modality effect. Secondly, situated learning theory is based on sociocultural view of learning. It states that learning occurs best when it takes place in the context in which it is applied. Learners should act in an apprenticeship capacity within a community of practice where learning opportunities arise situationally. A learner begins as a peripheral participant and as he or she gains experience and competence, he or she gradually moves from an apprenticeship role to full participants in the community of practice. Thirdly, experiential learning theory which defines learning as a process whereby knowledge is constructed through the transformation of knowledge. Learning is grounded in concrete experience; reflective practice is highly recommended for continued professional development. Teaching strategies include case studies, role play, simulations, lectures, films and slide show, games, completing an instrument and skill practice. The psychomotor skill learning theory states that the learning of skills is a process. The goal of motor skill learning is the ability to perform the skill accurately, in a reasonable time, and consistently over time. Learning a skill is different from performing it, hence, accurate performance of the skill in the laboratory may not represent having learned it. Psychomotor skill learning involves three levels of development: cognitive, associative, and autonomous. Practice, availability of resources, feedback and student's motivation are necessary to skill acquisition. Teaching and learning strategies include deliberate practice, spaced practice, dyad practice, simulation, and chunking. Other evidence-based learning strategies include chunking and priming.

2.2 Introduction

This is a systematic literature review focuses on effective teaching and learning strategies utilised in competence-based midwifery education. Studies focusing on nursing will also be included because the two disciplines focus on learner skill acquisition. Additionally, many skills in nursing and midwifery overlap hence training for the two professions can be integrated. The population, intervention comparison outcome (PICO) model was used to formulate a search question which reads as follows: What are the effective teaching and learning strategies in competency-based midwifery education? This led to identification of three concepts: competency-based midwifery education, teaching and learning strategies and skill acquisition. The C was not included because the study does not compare interventions.

2.2.1 Literature search strategy

The Cumulative Index to Nursing and Allied Health Literature (CINAHL), the Medical Literature On-Line (MEDLINE), Web of Science (WOS), and ProQuest Central electronic databases were searched for relevant articles from qualitative, and quantitative studies focusing on teaching and learning in midwifery using the key words; competency-based midwifery education, teaching and learning strategies, skill acquisition. Boolean logic was also used and the following key words were formulated; competency-based midwifery education OR competency-based nursing education, AND teaching and learning strategies OR teaching and learning methods, AND skill acquisition OR skill development. Table 3 below indicates the inclusion and exclusion criteria for publications that was utilised in the search.

Table 5: **Criteria for inclusion and exclusion of literature for the study**

Inclusion criteria	Exclusion criteria
Peer reviewed articles	Articles not peer reviewed
Full text of publication	Lack of access to full text of publication
Abstract available	Absence of abstract
References available	Unavailability of references
Publication in English	Publication in language other than English
Articles published in 2014-2024	Articles published before 2014

The search yielded 42 records, eight were removed because they were duplicates, 34 records were screened by abstract, two had no full texts, hence 32 records were assessed for eligibility. Twelve were further excluded because one was not in the English language, one was a pilot study and the others were systematic reviews, and some were publications from studies done in other health professions such as dentistry, and medicine. 20 eligible publications were retrieved and reserved for assessment, four of them were from qualitative studies and 15 from quantitative studies, and one mixed methods study.

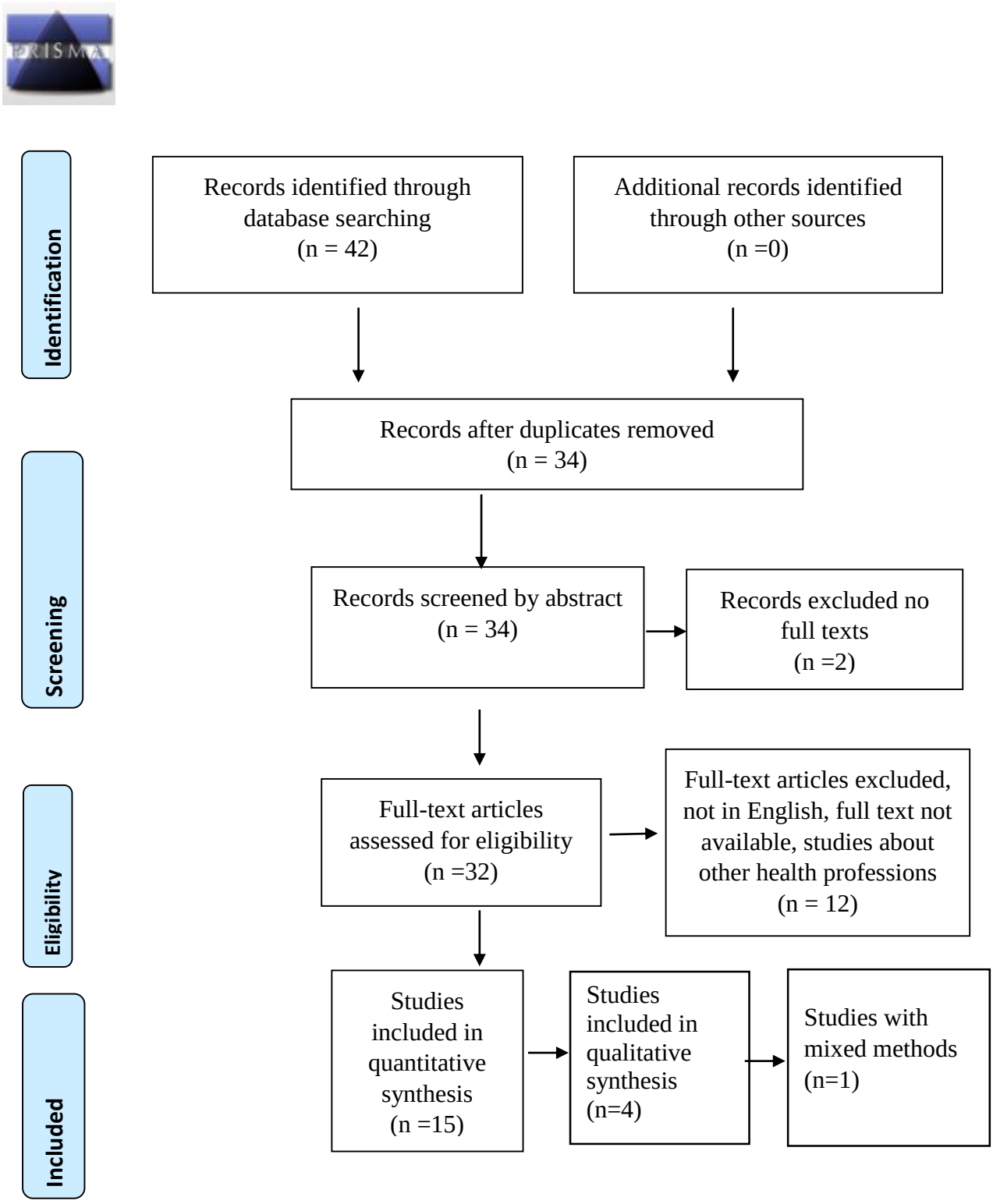


Figure 8: Prisma flow chart

The studies were conducted in various countries such as; Turkey (3) India, Spain, Saudi Arabia, Australia, Ireland, South Korea, Iran (2), China, Taiwan, Indonesia, and Ethiopia.

2.2.2 Quantitative studies

In all the 15 quantitative studies, researchers compared learning strategies in nursing and midwifery and evaluated the benefits of specific learning strategies, and their effectiveness in skill acquisition hence, they are related to the focus of this study.

Table 4 below displays the quantitative studies included in the literature review of this study.

Table 6: Data extraction quantitative studies

Author and year	Focus/boundary	Methods/critique	Findings/compatibility	Country	Quality of study
Aksoy et 2021	To compare the efficacy of the flipped classroom and traditional educational approaches on the acquisition of urinary system knowledge and skill level, and on the motivation and learning strategies of first-year nursing students in the nursing department of a university's faculty of health sciences	a single-blind, randomized controlled trial, with pre-test and post-test follow-up evaluations administered to experimental and control groups. Consisted of 155 first-year nursing students who had enrolled in the Fundamentals of Nursing Course in the Spring 2018 Semester	The flipped classroom approach was effective for improving urinary system knowledge and skill level, and for the motivation and learning strategies of nursing students. This innovative education approach can be recommended as a student-centred method in nursing education for teaching theoretical knowledge and evidence-based practices	Turkey	Moderate
Alconero-Camarero et al 2021	To analyse if students are more satisfied when their clinical simulation practices are based on high-fidelity simulation (HFS) or medium-fidelity simulation (MFS)	A quasi-experimental investigation. 210 students from the University of Cantabria-Spain and 191 students from the University of Seville-Spain. Students from the second academic year were enrolled in the simulation. Students from the University of Cantabria participated in HFS intervention, Seville university students took part in an MFS intervention	Satisfaction with simulation in nursing students is significantly greater in MFS than HFS. Simulation is beneficial for learning in all its forms, but for the acquisition of basic skills, and at a lower cost, MFS proves to be effective. However, high-fidelity is not always better than medium-fidelity as this depends on the student's level of knowledge and clinical experience.	Spain	Weak
Albaqawi et al 2020	To explore the benefits perceived by nursing students at the University of Hail, on a simulation-	A quantitative, descriptive, research design. sixty-two (62) nursing students present in their Critical Care	This study demonstrated that the inclusion of simulation technology to the Critical Care Nursing course was viewed as a	Saudi Arabia	Weak

	based training (SBT) for selected procedures in Critical Care Nursing Practice	Nursing Practice class were scheduled for the SBT and data gathering.	positive learning experience by the student respondents and that it is an effective method for the development of their technical and nontechnical nursing skills.		
Cooper et al 2015	To develop and test a face to face simulation approach to teach patient deterioration management	A quasi experimental design a convenience sample of 100 final year nursing students was recruited from 3 universities to participate in a 2-hour simulation program in university clinical skills laboratories	Face to face simulation and e simulation are effective strategies Either strategy is likely to add value to the learning experience.	Australia	Weak
Karabacak et al 2019	To evaluate the effects of simulation-based learning on the self-efficacy and performance of first-year nursing students. The second aim is to examine students' pre- and post-scenario proficiency in their self-assessment of competence in regard to scenario objectives to compare the students' self-assessment and their instructor's assessment in terms of performance evaluations.	A semi-experimental study was conducted with sixty-five first-year nursing students at a nursing college	Using standardized patients in simulation training allows novice nursing students to meet a real patient and to recognize their own true self-efficacy.	Turkey	Weak

Moloney et al 2022	To evaluate a simulation-based education initiative from the perspectives of final year undergraduate nursing and midwifery students	A quantitative cross-sectional survey design involving an online questionnaire was used to survey 95 final year undergraduate nursing and midwifery students who had participated in simulation-based learning experiences at one university	Simulation-based education is a valuable teaching and learning modality, particularly for final year students who are transitioning to real-life clinical practice. Student-centred simulation-based learning experiences can cultivate professional development and support learners in their transition from university student to healthcare professional. Simulation-based education is a valuable teaching and learning modality, particularly for final year students who are transitioning to real-life clinical practice	Ireland	Weak
Ozturk et al 2020	To determine the effect of one-to-one and applied education done in an equipped laboratory upon status of student-nurses' realizing and repeating nursing practices, time to realize these practices and satisfaction with laboratory and clinic. It was also aimed at determining satisfaction level with laboratory and clinic in relation with realizing these nursing practices and skills.	Descriptive interventional cross-sectional undertaken as a part of Fundamentals of Nursing Course II (FNCII) during Spring Semester of 2015-2016 Academic Year The study was composed of 181 first year students who studied at a nursing school of a faculty of health sciences of a university in registered FNCII.	Students repeated basic nursing practices three times at most at a high-fidelity skill laboratory. These repetitions and feedbacks affected their competence in practices and clinical practices positively. Students, spending averagely 5 minutes for each practice at laboratory, became satisfied with laboratory and clinical practices.	Turkey	Weak

Park et al 2017	To develop a 30-h integrated nursing practicum for Korean senior nursing students based on the key components of Jeffries Simulation Framework (2005), and to examine the effects of simulation teaching strategies on the major outcomes that is critical thinking disposition, general self-efficacy, learning motivation and skill performance	A prospective one group pre and post-test intervention design was used on 72 senior nursing students participating in an integrated nursing practicum at a university in Suwon	A simulation-based practicum based on the Jeffries Simulation Framework would be an effective learning method to facilitate critical thinking disposition, improve general self-efficacy, and enhance learning motivation	South Korea	Weak
Salari et al 2018	To investigate the effects of Problem-Based Learning in developing cognitive skills in learning Paediatric Nursing among university students	Quasi-experimental post-test only non-equivalent control group design, conducted on 95 junior nursing students	Problem based learning strategies are preferred over conventional strategy for instruction in paediatric nursing	Iran	Moderate
Sharma et al 2019	To investigate the association between self-confidence of final year students in selected midwifery skills and teaching-learning methods used in the 2 formally recognized education programs for nurse-midwives	Cross sectional survey. 633 final year students from 25 educational institutions	Hands on skills practice in laboratory and supervised clinical practice during clinical placements were associated with high confidence for basic clinical midwifery skills amongst students	India	Weak

Sun et al 2023	To evaluate the effect of the teaching method combined with situational awareness and case-based seminars in a comprehensive nursing skills practice course on the level of self-directed learning, professional identity, academic self-efficacy, theoretical scores, practical scores, teaching satisfaction, and student competence among nursing students	A quasi-experimental study that used a simple random sample research and this research used the parallel design method for nursing students from the grades of 2019 (*n*=679) and 2020 (*n*=568) from a medical college located in	This research provides references to combine situational awareness and case-based seminars to effectively improve the level and quality of nursing teaching efforts. Nursing students were satisfied with the application of the teaching method combined with situational awareness and case-based seminars in a comprehensive nursing skills practice course. Situational awareness and case-based seminars are more consistent with the general goals of medical teaching	Anhui Province in China.	Moderate
Tsai et al 2023	To evaluate the TBL strategy supplemented by IRS on the learning effects of the core course the human growth and development in nursing education at University	A quasi experimental design with two groups pre and post-tests was employed with year one students enrolled into 2 human growth and development in nursing education. Had experimental and control group. 103 nursing students	This study confirmed that TBL/IRS was effective in enhancing learners' abilities to integrate concepts and skills thereby cultivating competence in problem solving and teamwork. The TBL/IRS strategy was cost effective in promoting active learning of HGD in nursing students	Central Taiwan	Weak
Ulfa et al 2021	To assess and compare knowledge of PPH, long term retention of knowledge, and learning satisfaction of midwifery students attending a TBL class versus a didactic lecture on PPH topic	Quasi-experimental pre-test and post-test design with a control group on 118 second year midwifery students	TBL is an effective active learning strategy to improve knowledge of PPH. Students in the traditional classroom were passive learners and were not prepared individually to study early before attending the in-class sessions	Indonesia	Moderate

Yezengaw et al 2024	To assess the clinical practice competence and associated factors among Midwifery and Nursing students at Bahir Car Health Sciences Colleges	An institutional-based cross-sectional study design was conducted from 12 August to 12 September 2022, at Bahir Dar Health Sciences Colleges, Bahir Dar. A total of 403 students participated in the study.	Providing logbooks, adequate clinical cases, preceptors showing different procedures, students' confidence, and suitability of the way of teaching to the learning styles of students were significantly associated with clinical practice competence. Implementing logbooks, selecting clinical sites, enhancing the confidence of students, preferred teaching/learning styles, and clinical preceptor support were important to improve the clinical competence of students	North west Ethiopia	Weak
Zarifsanaiey et al 2016	To compare the effects of the integrated training (simulation and critical thinking strategies) and simulation-based training on the performance level and critical thinking ability of nursing students at Shiraz faculty of nursing and midwifery	Quasi- experimental with non-equivalent group pre-test post-test design.40 final year nursing students randomly divided into control (n=20) and experimental (n=20) groups	Students' performance level was increased by the application of integrated (simulation and critical thinking strategies). It is a deep learning guide for the learner in order to think and explore the knowledge, solve problems and think critically. The results showed that, the students' performance level was increased by the application of integrated training (simulation and critical thinking strategies	Iran	moderate

2.2.2 1 Brief discussion of the eligible quantitative studies

Arksoy et al (2021) conducted a single-blind, randomised controlled trial, with pre-test and post-test follow-up evaluations administered to experimental and control groups, to compare the efficacy of the flipped classroom and traditional educational approaches on the acquisition of urinary system knowledge and skill level, and on the motivation and learning strategies of first-year nursing students in the nursing department of a university's faculty of health sciences. This study design was appropriate since it ensured that the results were unbiased and maximised the strength of the results of the study (Karanicolas, et al, 2010).

Seven studies were quasi experimental design (QED) studies. Five of the seven compared data from pre and post-test interventions, while one was a post-test only. Alconero-Camarero et al (2021) conducted a QED to analyse if students are more satisfied when their clinical simulation practices are based on high-fidelity simulation (HFS) or medium-fidelity simulation (MFS). Cooper et al (2015) used QED to develop and test a face to face simulation approach to teach patient deterioration management. Park et al (2017) conducted a prospective one group pre and post-test intervention design to develop a 30-h integrated nursing practicum for senior nursing students based on the key components of Jeffries Simulation Framework (2005), and to examine the effects of simulation teaching strategies on the major outcomes that is critical thinking disposition, general self-efficacy, learning motivation and skill performance. Salari et al (2018) investigated the effects of Problem-Based Learning (PBL) in developing cognitive skills in learning Paediatric Nursing among university students using QED. Sun et al (2023) used QED to evaluate the effect of the teaching method combined with situational awareness and case-based seminars in a comprehensive nursing skills practice course on the level of self-directed learning, professional identity, academic self-efficacy, theoretical scores, practical scores, teaching satisfaction, and student competence among nursing students. Tsai et al (2023) evaluated the Team Based Learning (TBL) strategy supplemented by interactive response system on the learning effects of the core course the human growth and development in nursing education at University. Ulfa et al (2021) assessed and compared knowledge of PPH, long term retention of knowledge, and learning satisfaction of midwifery students attending a TBL class versus a didactic lecture on PPH topic using QED. Zarifsanaiey et al (2016) conducted a QED with non-equivalent group pre-test post-test design to compare the

effects of the integrated training (simulation and critical thinking strategies) and simulation-based training on the performance level and critical thinking ability of nursing students at Shiraz faculty of nursing and midwifery.

The study design was appropriate in these studies because a QED compares results of intervention groups in which participants are not randomised to their respective interventions due to ethical or practical concerns (Andrade, 2021; Harris et al, 2006). The aim of the pre-test is to ensure that the two groups are comparable before the intervention while the post-test enables the researchers to ascertain how the intervention affected the outcome right away (Rogers & Révész, 2019). QEDs are mainly used to evaluate benefits of specific interventions, they demonstrate connectedness between an intervention and an outcome (Harris et al, 2006). Handley et al (2018) states that they are frequently used to test the effects of interventions in real world contexts and frequently for a wider range of populations and environments. However, they are criticised for their lack of randomisation making it difficult for researchers to control for important confounding variables sufficiently. Therefore, QEDs are faced with threats to internal validity, and they rank lower than experiments in the hierarchy of evidence. Barnighausen et al (2017) assert that although quasi-experiments have lower internal validity that randomised control trials, findings from QEDs have higher external validity because the experiments are implemented using real life systems rather than systems designed or modified for research purposes. This implies that findings from these studies can be generalised from the research context to the real world. In four of the QED studies, the researchers indicated that they assigned control groups to the experiments, thereby improving the internal validity of the studies.

Sun et al (2023) conducted a simple random sample research using the parallel design method to evaluate the effect of the teaching method combined with situational awareness and case-based seminars in a comprehensive nursing skills practice course on the level of self-directed learning, professional identity, academic self-efficacy, theoretical scores, practical scores, teaching satisfaction, and student competence among nursing students. This design allowed each student to have an equal probability of being chosen. This type of sample aims to represent the whole population without bias, allowing researchers to compare the effects across several conditions at the same time (Hayes et al, 2025). Utilising parallel study designs,

researchers can collect data competently and identify the effects of specific interventions with greater clarity. Parallel study design increases the reliability of results due to its structured approach and the use of control groups. By providing strong comparisons between treatment effects, investigators effectively isolate the impact of specific interventions (Beckwith, 2024). Based on this the findings from this study could be trusted.

Four of the 15 eligible quantitative studies were cross sectional studies. Sharma et al (2019) used a cross sectional design to examine the association of teaching-learning methods and self-confidence of student nurse-midwives. Ozturk et al (2020) did a cross-sectional study to determine the effect of one-to-one and applied education done in an equipped laboratory upon status of student-nurses' realising and repeating nursing practices, time to realise these practices and satisfaction with laboratory and clinic. Additionally, it was aimed at determining satisfaction level with laboratory and clinic in relation with realising these nursing practices and skills. Moloney et al, (2022) evaluated a simulation-based education initiative from the perspectives of final year undergraduate nursing and midwifery students. While Yezengaw et al (2024) assessed the clinical practice competence and associated factors among midwifery and nursing students. Since cross sectional studies are a one-time measurement of exposure and result, it is difficult to draw causal linkages from their analysis, they are prone to biases. (Setia, 2016).

Evidence from cross sectional studies is of lower quality compared with evidence from case-control studies, cohort studies, randomised controlled trials, systematic reviews and meta-analyses of randomised controlled trials Yetley et al (2016).

One of the studies is a descriptive quantitative study. Descriptive or non-analytical studies describe the data on one or more characteristics of a group of individuals. They do not try to answer questions or establish relationships between variables. In the quantitative descriptive study selected in this literature review, Albaqawi et al (2020) explored the benefits perceived by nursing students at the University of Hail on a simulation-based training (SBT) for selected procedures in Critical Care Nursing Practice. Researchers did not implement an intervention, but explored students' perceptions of a learning strategy.

2.2.2.2 Quality assessment of quantitative studies

A quality assessment of the 15 quantitative studies was done using the National Collaboration Centre for Methods and Tools (NCCMT) (2008). The quality assessment results revealed that studies by Albaqawi et al (2020), Alconero-Camarero et al (2021), Cooper et al (2015), Karabacak et al (2019), Moloney et al (2022), Ozturk et al (2020), Park et al (2017), Sharma et al (2019), Tsai et al (2023), and Yezengaw et al (2024) were weak because authors did not indicate if confounders were controlled in the design. Additionally, authors did not explain if assessors were blinded to which participants were in the control and intervention groups. Contrariwise, the quality assessment revealed that studies conducted by Sun et al (2023), Zarifsanaiey et al (2016), Salari et al (2018), and Ulfa et al (2021) studies were graded moderate because the authors indicated how the confounders were controlled. While Aksoy et al (2021) study was graded moderate because the authors indicated that single blinding was done.

2.2.2.3 Findings from the eligible quantitative studies

Eight studies focused on simulation and their findings indicated that simulation is an effective teaching and learning strategy for skill acquisition. Alconero-Camarero et al (2021) found that simulation is beneficial for learning in all its forms. Albaqawi et al's (2020) study, revealed that students viewed inclusion of simulation technology to the Critical Care Nursing course as a positive learning experience, and that it is an effective method for the development of their technical and nontechnical nursing skills. Cooper et al (2015) face to face simulation and e simulation are effective strategies to teach patient deterioration management. Karabacak et al (2019) found that using standardised patients in simulation training allows novice nursing students to meet a real patient and to recognise their own true self-efficacy. In Moloney et al's (2022) study showed that simulation-based education is a valuable teaching and learning modality, particularly for final year students who are transitioning to real-life clinical practice. In their study, Park et al (2017) found that a simulation-based practicum based on the Jeffries Simulation Framework would be an effective learning method to facilitate critical thinking disposition, improve general self-efficacy, and enhance learning motivation. And Zarifsanaiey et al (2016) found that students' performance level was increased by the application of integrated simulation and critical thinking strategies. It is a deep learning guide for the learner in order to think and explore the knowledge, solve problems and think critically. These findings

agree that simulation is an effective teaching and learning strategy in acquisition of psychomotor skills, critical thinking and professional development.

2.2.3 Qualitative studies

Four studies included in the literature are qualitative as indicated in the table below:

Table 7: Data extraction qualitative studies

Author and year	Focus/boundary	Methods/critique	Findings/compatibility	Country
Barisone et al 2019	The aim of this study was to explore the perception and effectiveness of web-based learning in facilitating the development of clinical skills in undergraduate nursing students in three nursing schools of a university.	A qualitative descriptive study. A convenience sample of 26 undergraduate nursing students from three of our university nursing teaching sites located in three different towns.	Web-based learning could be effectively used to reduce the gap between theory and practice. The use of web-based applications for learning technical-practical skills also improve students' conceptual learning, ensuring high standards of care and patient safety, especially due to the increasing complexity of care	Northern Italy
Ewertsson et al 2015	To describe nursing students experiences of learning in the clinical skills laboratory in preparation for their clinical practice at a university	A qualitative descriptive design with an inductive approach. Interviews with 16 students	The clinical skills laboratory prepared students for clinical practice.	Sweden
Phehla et al 2024	This study aimed to explore and describe the experiences of student nurses' utilisation of SSL at a University and to make recommendation(s) to enhance the use of SSL.	A qualitative, exploratory, descriptive, and contextual research design. 19 undergraduate student nurses who utilise SSL at the host HEI.	Time constraints hinder the utilisation of SSL, and this challenge threatens the acquisition of clinical skills and knowledge during the training of student nurses.	Gauteng, South Africa
Vermeulen et al 2017	To explore experiences of last year student midwives with High Fidelity perinatal simulation training	A qualitative descriptive study that used 3 focus group discussions with 24 last year student midwives at the Erasmus University College	Students found high fidelity perinatal simulation training to be a positive learning method that increased both their competence and confidence. As High-Fidelity perinatal simulation training constitutes a helpful learning experience in midwifery it could have a positive influence on maternal and neonatal outcomes	Brussels, Belgium.

2.2.3.1 Brief discussion of the qualitative studies

Barisone et al (2019) explored the perception and effectiveness of web-based learning in facilitating the development of clinical skills in undergraduate nursing students using a qualitative descriptive study. Vermeulen et al (2017) used qualitative descriptive design to explore the experiences of last year student midwives with high fidelity perinatal simulation training. But, Ewertsson et al (2015) indicate that they used a qualitative descriptive design with an inductive approach to describe nursing students' experiences of learning in the clinical skills laboratory in preparation for their clinical practice.

The fourth qualitative study was conducted using qualitative exploratory and contextual research design. Phehla et al (2024) explored and described the experiences of student nurses' utilisation of self-directed simulation learning (SSL) at a University in Gauteng, South Africa.

In all the four qualitative studies, authors did not indicate the theories that informed the research. Qualitative researchers rely heavily on theories to direct their study and shed light on their findings, the theories are frequently from the humanities and social sciences. Theories offer researchers a variety of "lenses" through which to view complex topics and societal concerns, directing their focus on various facets of the data and offering a framework for analysis (Reeves et al, 2008).

2.2.3.2 Quality assessment of qualitative studies

The four qualitative studies were assessed using the Critical Appraisal Skills Programme (CASP) tool. In all the studies, the qualitative design was appropriate for the study. Barisone et al (2019) explored the perceptions and effectiveness of web-based learning facilitating the development clinical skills in undergraduate nursing students. Ewertsson et al (2015) investigated nursing students' experiences of learning in the clinical skills laboratory. Phehla et al (2024) used the qualitative design to uncover the students' experiences of student nurses. Vermeulen et al (2017) explored experiences of last-year student midwives with High-Fidelity Perinatal Simulation training. The qualitative design was appropriate for these studies considering that the researchers were interested in the perceptions, and experiences of the participants. Qualitative research is suitable for seeking to understand a phenomenon from the perspectives of the persons experiencing it (Ayton, 2023).

2.2.3.3 Findings from the eligible qualitative studies.

These studies reveal that adequate time is important for skill practice to help students apply knowledge in practice, and High-Fidelity simulation is effective for the achievement of competence and confidence among students. Barisone et al (2019) found that Web-based learning could be effectively used to reduce the gap between theory and practice. Ewertsson et al (2015) found that the students were satisfied with repeated learning in clinical skills laboratory as preparation for their clinical practice. Phehla et al (2024) found that time constraints hinder the utilisation of self-directed simulation learning and it threatens the acquisition of clinical skills and knowledge during the training of student nurses. Vermeulen et al (2017) found that students found high fidelity perinatal simulation training to be a positive learning method that increased both their competence and confidence.

2.2.4 Mixed methods

One of the eligible studies is a mixed methods study, as indicated in the table below:

Table 8: Mixed methods study

Author and year	Focus/boundary	Methods/critique	Findings/compatibility	Country	Quality
Chan et al 2024	To determine the effect of simulation-based Zoom learning (SBZL) on perceived capabilities and clinical decision-making skills among undergraduate nursing students and to explore experiences of the instructors and students participating in SBZ	A mixed method designs. recruited 195 final-year students to participate in the SBZL programme, which was developed based on the NLN Jeffries Simulation Theory to guide its design, implementation and evaluation.	SBZL showed improvement in perceived creative thinking, perceptions of the learning environment and clinical decision-making. This innovative teaching and learning method can be valuable for nursing education in various regions to prepare students for real-life roles.	China	Weak quantitatively

2.2.4.1 Brief discussion of mixed methods study.

Chan et al (2024) used mixed methods design, to determine the effect of simulation-based Zoom learning (SBZL) on perceived capabilities and clinical decision-making skills among undergraduate nursing students and to explore experiences of the instructors and students participating in SBZL.

2.2.4.2 Qualitative assessment of the mixed methods study

The quantitative part was assessed using the quantitative assessment tool while the qualitative part was assessed using the CASP tool. Researchers combined data collection, analysis and interpretation techniques of qualitative and quantitative methods to address a research question (Johnson et al, 2007). They maintained credibility of qualitative findings through triangulation of data obtained from the students and instructors. Two researchers analysed qualitative data autonomously and remained reflexive to enhance the dependability and confirmability. Therefore, the findings from the study can be trusted for use in practice.

2.2.4.3 Findings of the mixed methods study

This study's quantitative and qualitative finding shed light on SBZL's impacts. Participants recognised the benefits of SBZL in overcoming the constraints placed on clinical teaching by social distancing techniques. The participants' positive learning experiences corroborated the enhancements seen in clinical decision-making abilities and the teaching and learning environment. Students had the chance to enhance their educational experiences and hone their clinical reasoning and decision-making abilities through livestreaming simulation training. SBZL effectively engaged students in the learning environment, according to both studies. Additionally, the qualitative findings improved the researchers' comprehension of the crucial elements that improved the teaching and learning environment and strengthened students' abilities. All of the students' and teachers' perspectives were unanimous. A virtual clinical learning environment was created using the high-fidelity simulation technology, allowing for sufficient contact between the teachers and students.

2.2.2.5 Conclusion

The CINAHL, MEDLINE, Web of Science, and ProQuest databases were searched for relevant articles on effective teaching and learning strategies in competence-based midwifery education. Using the Prisma flow chart, the search yielded 15 eligible quantitative studies, four eligible qualitative studies and one mixed methods study. Each study went through a quality assessment using appropriate quality assessment tool. The (NCCMT, 2008) tool was used to assess the quantitative studies. The quality of the studies ranged from weak to moderate. The CASP tool was used to assess the qualitative studies. Findings revealed that simulation, TBL, PBL, one-to-one education, repeated practice, student support, and feedback are effective strategies for skill acquisition in competence-based midwifery education. However, stimulation featured highly in ten studies as an effective teaching and learning strategy for skill acquisition and achievement of competence. Just like this study, both the qualitative and quantitative studies focused on teaching and learning strategies in nursing and midwifery, they involved educators and undergraduate nursing and midwifery students, and they were conducted in real world situation.

2.3.11 Effective learning strategies in CBE

Barton et al, (2018) assert that student-centred teaching strategies based on theories of learning that view learning as a process that can be actively engaged are recommended in CBE. These include team-based learning, problem-based learning, simulation, flipped classroom, and one -to-one education.

2.3.11.1 Team-based learning

Team based learning (TBL) is a student-centred learning strategy that is recommended in CBE (Tsai et al, 2023). It is a small-group, active-learning teaching approach that gives students the chance to apply conceptual information through a series of tasks that include solo work, group projects, and fast feedback. TBL is a highly organised form of cooperative learning. Since the 1970s, it has been progressively applied in nursing. It can be applied to both large and small classes classrooms, combining several small groups of 5-7 students each in a single classroom. TBL is characterised by three key components:

- Separate advance student preparation
- Assurance tests that signify individual and team readiness
- Most of in-class time dedicated to decision-based application assignments done in teams.

Unlike other group-based instructional approaches, TBL is highly learner-centred, while still incorporating critical faculty input, and makes use of grading, peer evaluation, and immediate feedback to ensure individual and team accountability to promote learning. One content-expert instructor can instruct 20 or more teams. A well conducted TBL produces academic outcomes that are equivalent or greater compared to either lecture-based formats or more traditional small group learning models (Parmelee et al, 2012). The TBL technique improves student participation in class, fosters self-directed learning, and teamwork. It can also help poorer students achieve better academically by fostering structured study habits and teamwork (Cheng et al, 2014).

Working in small groups, encourages the use of collective working memory. As learners collaborate, they gain working memory from the group collective memory, which improves the limitations of individual working memory. Working in small groups with peers and teachers is interactive learning. It reflects Vygotsky's social constructivism assisting learners in developing and constructing their own

knowledge while also seeking ways to make the best use of other people's competence in the learning process (O'Sullivan & Bruce, 2014). Students interact with one another as they work in small groups to learn and practice subject matter elements to solve a problem, complete a task, or achieve a goal (Li & Lam, 2005). Interaction between learners and more knowledgeable others (MKO) or peers enables learners to perform tasks that they would be unable to perform on their own (Tolsgaard et al, 2016). The distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined by problem solving under the guidance of an expert person or in collaboration with more capable peers is called the zone of proximal development (ZPD). It is the distinction between what a learner can accomplish without and what a learner can accomplish with assistance (Siyepu, 2013; Li & Lam, 2005). Another of Vygotsky's fundamental principles is that the MKO is better, this can be an educator, a peer, or a computer that knows more about a subject than the learner. Consequently, the MKO assists the learner during cooperative learning. When the learner has mastered the task, the assistance can be removed because the learner is now capable of completing it independently. In a study that describes students' experiences of cooperative learning in the clinical setting, findings revealed that cooperative learning in the clinical setting creates a community of learning and instils the importance of teamwork early in the education process (Ruth-Sahd, 2011).

Cheng et al (2014) conducted a study using one-group pre-test–post-test research design with the intervention of the TBL teaching strategy to employ the TBL approach in a Maternal-Child Nursing course and to evaluate its effects on learning outcomes. Findings revealed that TBL offers chances to promote relationships between students, which encourages students to participate more actively and operate as a team. Additionally, it raises academic achievement and fosters teamwork and student engagement in the classroom. Studies conducted by several researchers revealed substantial benefits of TBL on students learning both in nursing and midwifery. In a systematic review whose aim was to review the evidence in relation to the experiences and outcomes of students on nursing and/or midwifery higher education programmes, who experience team-based learning. Dearnley et al (2018) found that students perceived that they had better academic achievement after TBL. Students involved in TBL demonstrate a motivation to learn and willingness to

participate. The predominant positive outcome for students was professional growth, engagement, learning effectiveness, and critical thinking. Kim et al (2016) examined the effects of TBL on problem-solving ability and learning outcomes (knowledge and clinical performance) of Korean nursing students, findings revealed that TBL is an effective teaching strategy to enhance problem-solving ability, knowledge as well as clinical performance. This is paramount in midwifery practice, considering the paucity of gynaecologists in Malawi, midwives equipped with problem solving skills would be helpful in prevention of complications consequently saving the lives of women and their neonates

2.3.11.2 Simulation

Simulation is the practice of emulating the behaviour of some situation or process using appropriately corresponding situation or apparatus, exclusively for teaching and learning (Forrest et al, 2013). It is widely utilised as an effective teaching approach in clinical teaching, learning, and assessment of students' learning in undergraduate, postgraduate, and long-life midwifery education (Martins et al, 2018). It involves creating a scenario, environment, or setting that closely resembles what one could experience in the "real world" (Cioffi, 2001). Simulation is a strategy not a technology to replace or augment real experiences with guided experiences, often immersive in nature that duplicate significant features of the real world in a fully interactive way. The term immersive means that learners are as involved in an activity or environment as they would be if it were the actual world (Gaba, 2004). Hope et al, (2011) assert that simulation involves the use of behaviourist theories, experiential learning methods, and the encouragement of understanding by doing. According to Jeffries (2005), simulations are activities that mimic the reality of a clinical setting and are intended to illustrate procedures, decision-making, and critical thinking using role-play games and other tools like mannequins or interactive movies. A simulation might be extremely realistic and closely mimic reality, or it can be a collection of elements that are assembled to approximate reality in some way. Simulations can be scenario- or skill-based. The purpose of simulation is to provide a setting that enables students to act normally and gain understanding of the complexities of the real-world workplace.

Simulation as a teaching and learning strategy supports CBE alongside classroom teaching. Anatomical models, task trainers, role acting, games, computer assisted instruction, standardised patients, virtual reality, and low to high-fidelity mannequins are examples of simulation used in nursing. Nehring & Lashley, 2009; Harder, 2010). A certain amount of real-world applicability can be achieved by computer-based simulations, which rely on two-dimensional, screen-based experiences, and part-task training tools. They concentrate on particular skills or particular facets of human body (Jeffries, 2005). The purpose of medical simulations is to replicate genuine patients, anatomical locations, clinical duties, or settings where medical services are provided in the real world (Issenburg & Scalese, 2008). Nehring and Lashley (2009) assert that simulation has long been a part of nursing education and practice. In the past 40 years, new learning tool like games, computer-assisted instruction, standardised patients, virtual reality, and low- to high-fidelity mannequins have emerged. The ability of mannequins or simulators to simulate reality varies; high and medium simulators simulate reality to a greater extent than low fidelity mannequins (Hayden et al, 2014). Fidelity is the degree to which the appearance and behaviour of the simulator or simulation matches the appearance and behaviour of the simulated system (Maran & Glavin, 2003). Meakim et al (2013) refer to it as realism or authenticity, believability, or the level to which a simulated experience approaches reality, as fidelity increases, so does realism. In a study that examined the impact of high fidelity versus low fidelity simulation on self-assessment and confidence, findings showed that high-fidelity simulation led to equal or even worse performance as compared to low-fidelity simulation, including inducing overconfidence. Excessive self-confidence contributes to defective decision-making, with the potential for poor patient outcomes (Massoth et al, 2019).

2..3.11.3 Benefits of simulation

Simulation enables repetitive repetition using various scenarios with differing degrees of difficulty. In CBE, the primary aspect in achieving competency and retention is practicing a skill repeatedly until the learner can perform the activity competently (Hakimi et al, 2021). Learners can practice repeatedly and at their own pace in a setting that encourages them to make mistakes and allows them to deliberately experience and learn from the mistakes in a manner that would be unacceptable with actual patients (Kneebone et al, 2004). This is consistent with deliberate practice in skill acquisition to achieve automaticity. Using simulations that

stress pre-existing mental models, educators assist learners in identifying areas where they need and want to study. Consequently, students learn to self-regulate their learning and concentrate on their learning goals (Zigmont et al, 2011). Hence, helping learners to be learning goal oriented rather than performance goal oriented which have been discussed earlier.

Ross (2012) asserts that simulation is an effective method for teaching psychomotor skills because while practicing the skill the learner integrates knowledge from all three learning domains. Psychomotor skills do not exist in isolation, but include elements from all three learning domains: psychomotor, cognitive, and affective. Nestel et al (2003) state that traditionally, psychomotor skill education in health care has been fragmented. Each skill is taught separately and is divided into three components: psychomotor skill, cognitive knowledge, and affective domains. This is consistent with the ICM (2012) who assert that the domain of learning must be aligned with the teaching methodologies. This method allows the student to progress from simple to complex tasks, but it does not fully account for the many complexities involved in performing psychomotor skills. Acquisition of expertise embraces the concept of a progressive process that passes through well-defined stages (Kneebone et al, 2004). The requirement of learning basic skills first and then progressing to more complex routines refers to learning hierarchies and is consistent with behaviourist theories. Skill learning occurs through routine integration in three stages: cognitive, associative, and autonomous (DesCoteaux & Leclere, 1995).

Simulation enables learners to master a complex skill through repetition, feedback, and practice. Actionable feedback structures learning by focusing on observable behaviour and comparing it to an ideal standard (O'Shea et al, 2022). Skill practice combined with feedback is very significant for deep learning. Simulation helps educators to achieve constructive alignment because the intended verb in the outcome statement is activated in the teaching and learning activity.

Simulation is an effective teaching strategy an educator can use to successfully guide learners through Kolb’s experiential learning cycle. Simulation creates an environment where both internal and external learning processes can occur. It creates a context for reflective thinking to occur, challenging the student to consider how they could act and think differently if confronted with a similar circumstance in the

real world (Rutherfold-Hemming, 2012). The interaction between experience and reflection is the foundation of experiential learning (Kolb, 1984). Continuity and interaction are key components of Kolb's theory. Continuity is the carrying forward into the future of people's past experiences. In a simulation, learners engage in concrete experience, reflective observation, abstract conceptualisation, and active experimentation (DeCaporale-Ryan et al, 2016). Zigmont et al (2011) state that simulation offers an experience that necessitates learners to use their current mental models throughout the event. Learning takes place during debriefing, the conversation that follows the simulation session (Zigmont et al, 2011).

The learner completes the concrete experience phase, during a simulation by taking part in a simulated scenario. The reflective observation is accomplished when the learner, with the assistance of an educator and peers, considers the positive and negative elements of the care provided to the simulated patient. The abstract conceptualisation phase of the cycle is where the learner creates a plan to alter behaviour or practice for the upcoming simulation or patient encounter. The learner then puts the prepared adjustments from the preceding stage into practice during a real or simulated patient interaction to produce a fresh concrete experience. The learner restarts the cycle during this stage of Kolb's cycle, which is active experimentation. Learners identify knowledge gaps during the encounter, which they can then remark on.

O'Shea et al (2022) assert that for learners studying to become health professionals, facilitated debriefing and reflection are the most crucial elements of the simulation exercise. Educators and students reflect on the clinical encounter during debriefing, which fosters the growth of clinical reasoning and judgment skills through reflective learning processes (Dreifuerst, 2009). Critical reflection drives the learner to actively seek out the new learning experience, to the point where the learner realises he or she does not know how to do the skill properly. Such introspection creates a desire to seek out safe, optimal opportunities to improve skill performance. When this situation arises, the learner decides to move toward it and becomes completely immersed in the practice experience. Continuous reflection is an essential component of a deliberate practice session. Learners go through the process of comparing information and performance to information stored in memory (Clapper & Kardong-

Edgren, 2012). However, simulation should not replace clinical practice (Cooper et al, 2012).

2.3.11.4 Problem based learning

Problem-based learning (PBL) is another strategy in which the attention shifts from teacher to student and has the ability to get the graduates ready for the uncertainties of future managerial practice. PBL is a process-focused instructional technique as opposed to content-based; it employs small groups that are centred on addressing well-integrated clinical situations instead of large groups like in conventional education, where lectures are the primary mode of knowledge delivery and little independent study. It utilises small groups to solve well integrated clinical problems (Wei, 2024). PBL uses constructivist approach, learners activate prior knowledge and build on existing conceptual knowledge frameworks. Learning in PBL starts with presenting clinical problems (Wood, 2003). It enables the students' construction and reconstruction of their own knowledge base (Patel et al, 1993). Students identify their own learning objectives and spend time working independently to meet these objectives. One of the pillars of continuing good health professional practice (Onyon, 2012).

The effectiveness of PBL depends on well written scenarios. In PBL learners interact with learning materials, relate concepts to everyday activities, and improve their understanding. Learners have a better knowledge retention with PBL. Students think critically by working through these problems, about the nature of the problem, create ideas, and acquire the necessary knowledge and skills required to become a health care worker. In PBL, self-directed learning is essential (Onyon, 2012). PBL promotes active learning, improved understanding, and retention and development of lifelong learning skills. Allows learners to develop generic skills and attitudes required in their future practice. PBL increases in-depth learning, and helps students to perform better in examinations (McParland, 2004). A systematic review and meta-analysis conducted by Wei et al (2024) revealed that PBL can help nursing students to improve their critical thinking.

PBL is supported by several concepts; such as: The concept of contextual learning supports the superiority of PBL. The fundamental idea is that learning content in the context of its intended application fosters comprehension and information utilisation. PBL is also supported by self-determination theory which involves two types of

motivation: controlled and autonomous (Albanese, 2000). Controlled motivators result in rote, surface-level learning and make students behave anxiously and under pressure. Reward or penalty, like passing an exam, are examples of controlled motivators. Learners who express autonomous motivators do so in a way that resonates with their own sense of significance and interest. It has been demonstrated that autonomous motivators enhance comprehension and academic achievement. A learning environment that encourages self-motivators involves considering the opinions of the students, providing them with choices, and helping them assume more responsibility (Onyon, 2012).

Integration of simulation technology into PBL provides opportunities for nursing students to integrate theory from PBL sessions into ‘‘real life practice situations’’. The main focus is to develop learners’ clinical competency for providing safe, competent, timely and appropriate patient care (Liaw et al, 2010). Another idea that can be applied to assist PBL is the use of cooperative learning (CL). CL occurs when people believe they can accomplish their objectives only if the other members of the group do the same. In CL learners make cooperative efforts, exchange ideas and correct each other's errors more frequently and effectively than their counterparts who are competing with each other. It's possible that less experienced students are better than the knowledgeable instructor at identifying the reasons behind other students' misunderstandings when it comes to the subject matter. CL is an active ingredient of PBL (Albanese, 2000). PBL is not about problem solving but rather it uses appropriate problems to increase learners’ knowledge and understanding. Although supporters of PBL affirm that learning motivation is one of the benefits of this approach, some argue that it is time-consuming and is unable to provide a better clinical competence (Kilroy, 2004).

2.3.11.5 Flipped classroom

One of the most recent teaching strategies is flipped (FC) or inverted classroom. It combines lecture-based learning, participatory and active learning, and computer-based learning; hence, it is considered as a form of blended learning. The flipped classroom is an inventive pedagogical method that emphasises on learner-centred instruction. In the flipped classroom, what is typically completed as homework and in class are switched, or flipped. For instance, rather than attending a lecture on public policy in class and then working on a nutrition policy paper at home, learners

study about policy beforehand, watch policy-related videos, and participate in active learning activities like case studies and discussions of current policy issues in class. The flipped classroom allows the educator to work with students at higher Bloom's taxonomy levels; such as application, analysis, and synthesis (Gilboy, 2015). The flipped classroom is illustrated in the figure below:

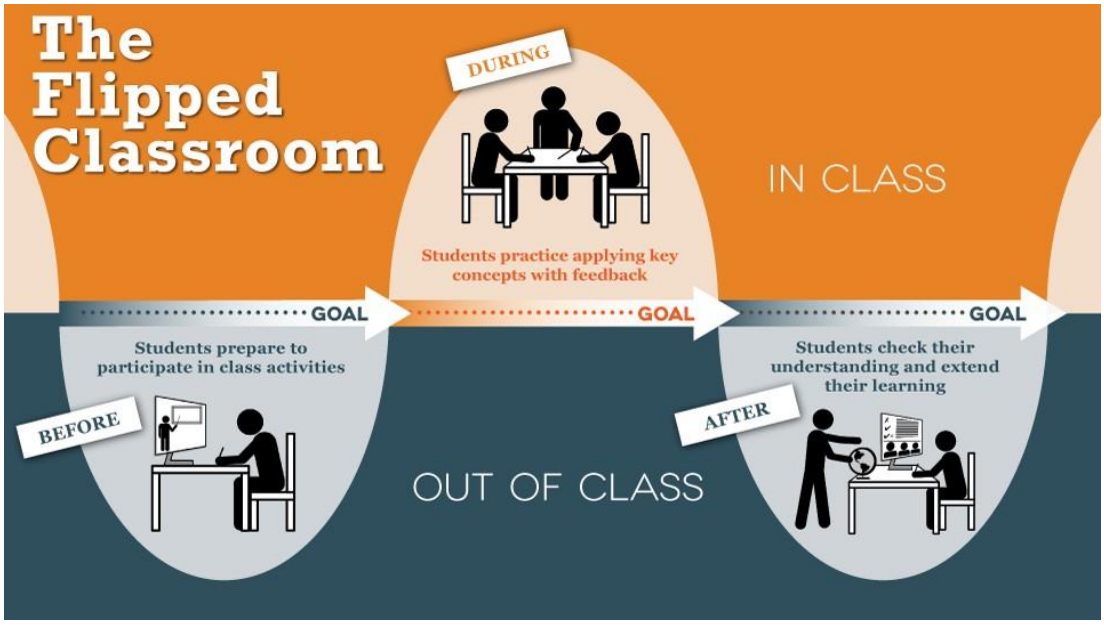


Figure 9: An illustration of the flipped classroom adapted from University of Texas in Austin.

A flipped classroom method is an approach that focuses teaching activity on what the student actively does (Behmanesh et al, 2022). This aligns with the constructive alignment strategy since a flipped classroom structure makes it easier to give students the chance to practise what they are learning in class (Biggs, 2007). Behmanesh et al (2022) compared the effects of traditional teaching and flipped classroom methods on midwifery students. Findings showed that flipped classroom promotes learning, consolidates learning, provides unlimited opportunity for learning, and interactive learning. The study suggests that flipped classroom method promotes practical learning and leads to positive learning among the midwifery students. The materials commonly used in flipped learning classrooms include videos and authentic materials. In this instance, the videos are an excellent learning aid that allow students to continue their education outside of the classroom at their own pace. However, real materials like news stories, commercials, films, songs, TV shows,

newspapers, magazines, can make meaningful and practical teaching resources for activities that take place inside and outside of the classroom in a flipped classroom (Bergmann et al, 2012; Hamdan et al, 2013).

The fundamental concept of the flipped learning approach stems from constructivist learning theory that focuses on learners' role in learning by assisting them to become active learners while enhancing their engagement in classrooms. Learners question the content, interact with their counterparts in hands-on activities, and test their skills by applying knowledge learned from the class to real world situations (Sakulprasertsri, 2017). In the flipped classroom, interaction between the student and personalised contact time between the educator and learner is increased. It creates an environment where learners take responsibility for their own learning. The educator is on the side of the learner as a guide, and all learners are fully engaged in their learning (Bergmann et al, 2012).

When applying the flipped learning method, learners undergo four stages based on instructional models of experiential learning cycle. The four stages include Experiential engagement, concept exploration, meaning making and demonstration and application. During experiential engagement, learners are involved in a succession of experiences such as a real-world or practical task that the educator presents. Through a personal connection and a desire to make sense of the experience during class, each learner's attention will be drawn from the physical experience. Because of this, students will take an interest in the subject and be inspired to study more through engaging in activities like experiments, community service projects, and role-playing. After going through the Experiential Engagement stage, learners typically use printed and online reading materials, videos, content-rich websites, and virtual simulations to absorb more of the concepts they have already touched on. At this point, the videos and other resources are used to assist students in understanding the abstract ideas associated with the subject matter of each learning unit. In the meaning making stage. During the meaning making phase, students consider what they have discovered, gained knowledge of, or gone through in the earlier phases. Through blogs and audio or video recordings, students can express and create their knowledge in a variety of ways related to the material taught in each learning unit. In the interim, written or spoken exams can be utilised to assess students' understanding of the material being covered through quizzes and tests. During the demonstration

and application phase, learners are able to put all of the prior learning into practice and show what they have learnt either independently or through cooperative group projects. Consequently, it is recommended for students to expand their knowledge outside of the classroom through discussions, creative projects, or presentations that are applicable to their daily life (Sakulprasertsri, 2017). However, learners from rural areas may not be able to blog, and access videos due to financial, internet connectivity and power challenges. The figure below illustrates the concept exploration, meaning making and demonstration phases.

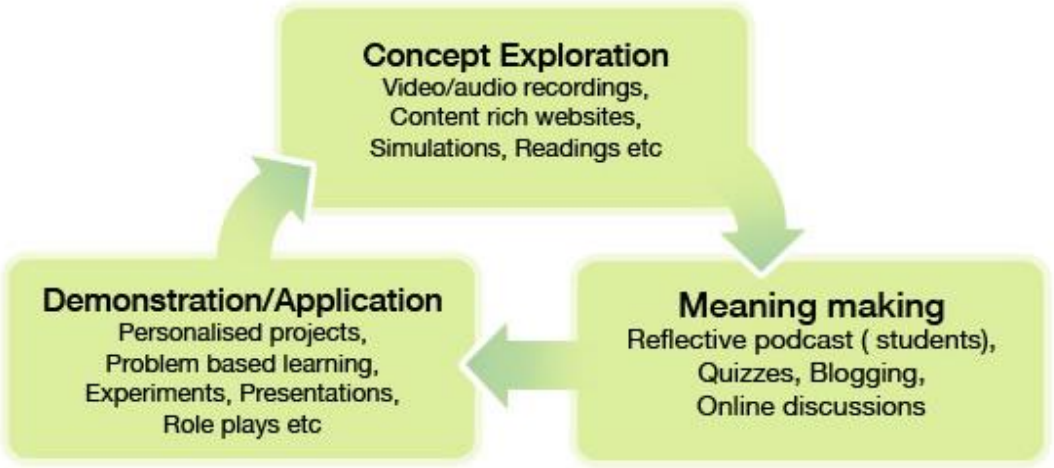


Figure 10: Learning opportunities of the flipped classroom. Adapted from Gerstein

The flipped approach provides students with pre-class direct training before they get in-class education. When learners are exposed to specific stimuli, such a collection of facts, enhances their ability to remember or recall those stimuli, since they had previously seen the stimuli. By giving learners direct instruction outside the classroom, before receiving in-class instruction, students are essentially "primed" for the interactive learning exercises conducted in the classroom that has been flipped (Hamdan et al, 2013).

Priming is crucial in learning new skills (Taie, 2014). It is a cognitive repetition phenomenon in which a learner's responses to a later conceptually connected stimuli are influenced by their earlier exposure to a particular stimulus. When a learner is exposed to something connected to a notion, their mental representations of that concept become active with little to no conscious effort of the learner, hence it is

implicit learning. Long-term memory is activated during priming, and greater activation of specific informational units facilitates quick access to memories. Informational units that have been activated cause other, connected, or related units to also become active. Many times, being able to retrieve pertinent knowledge from memory more quickly aids learners in reacting more quickly when necessary (Trofimovich & McDonough, 2012).

Flipped classroom approach has some challenges too. Simpson and Richards (2015) found that learners that were accustomed to being informed exactly what they need to know via lectures, may be concerned undergoing the flipped classroom approach. Some learners had difficult to be organised without contact with an in-person educator every week, while others found the quizzes challenging and did not recognise the relevance of completing them before the class. Learners also felt that at times, the out of class work was excessive, not accounting for the length of class time they were being provided nor the amount of course preparation normally required outside of class for a conventionally taught course. Hamdan et al (2013) state that flipped learning might not work for all educators and learners. Not all teachers are successful in implementing flipped classrooms, and some students have expressed a preference for traditional learning after participating in one.

2.3.11.6 One-to-one education

This is a learning environment where learners have access to technology through a one-to-one ratio. A one-on-one learning program's introduction has the ability to spur improvements in both student learning and teaching methods. When one-to-one learning is implemented, teaching methods and student learning are altered. For example, self-directed learning and student involvement increase. One-to-one learning environments increase learner motivation (Turner, 2019). Small group instruction has historically been employed primarily to teach beginning students' fundamental skills and the majority of research on the effectiveness of group instruction has focused on these individuals (Bjøntegaard, 2015). Ozturk et al (2020) conducted a study to determine the effect of one-to-one and applied education done in an equipped laboratory upon status of student-nurses' realising and repeating nursing practices, time to realise these practices and satisfaction with laboratory and clinic. They found that students repeated basic nursing practices three times at most at a high-fidelity skill laboratory. These repetitions and feedbacks affected their competence in practices and clinical practices positively. Students, spending averagely 5 minutes for each practice at laboratory, became satisfied with laboratory and clinical practices.

Learner's motivation, which is acting in a way that is intended to get a certain result (Deci et al, 1996), is associated with self-determination theory. SDT incorporates the pursuit of more knowledge since it enables people to comprehend the world more fully. Higher knowledge levels are indicative of cognitive structures that are constantly changing as a result of learners being exposed to novel situations, such as different learning settings. People use cognitive frameworks in an attempt to make sense of their environment. Autonomy, competence, and relatedness are components of SDT (Turner, 2019; Lemley et al, 2014), referred to as three innate psychological needs. Learners that possess autonomy are able to control their own experiences, take responsibility for their own actions, and behave in a way that is consistent with their own selves (Ryan & Doci, 2017). Learners in autonomous learning environments are able to create their own objectives and participate in lessons with a genuine feeling of drive and purpose because they find learning to be entertaining, fascinating, and meaningful (Turner, 2019). Educators can encourage learners' autonomy by reducing the importance of evaluative pressure and any sense of coercion in the classroom and by enhancing students' awareness of their own agency

and choice in the academic activities they participate in (Niemiec & Ryan, 2009; Turner, 2019).

Competence is the ability to successfully engage with one's surroundings, seek out and accept ideal challenges, and use consistent effort and strategic thought to advance in mastering them (Turney, 2019; Lemley et al, 2014). Educators may promote students' competency and enable them to test and expand their academic capacities by presenting learning activities that are optimally challenging. In order to foster achievement and a sense of effectiveness in their learners, educators must also make sure that learners have access to the right resources and feedback. One of the main ideas is that the learner would only participate in and value things they can truly comprehend and excel at. Feedback must therefore minimise evaluation and highlight students' effectiveness in order to give pertinent information on how to complete the tasks at hand. Experiences offered by competency-supportive pedagogy help students achieve mastery in their subject matter (Niemiec & Ryan, 2009).

Relatedness is the need to be in loving relationships that are marked by acceptance, like, compassion, and concern for one another. One-to-one learning increases social interaction between learners, as well as peer connectedness and tolerance for others (Turner, 2019). This is one of the most important aspects in the learning of psychomotor skills. Ericsson et al (1993) affirms that deliberate practice requires training resources for the success of the learner. Engagement in deliberate practice does not have intrinsic incentives. It is perceived by performers as essential to achieving greater performance gains. The absence of intrinsic reward or satisfaction in practice as opposed to the enjoyment of the outcome is consistent with the fact that people in a domain rarely initiate practice spontaneously. Furthermore, feedback, especially formative assessment is crucial to the development of competence. Assessment for learning is a major component of competence-based medical education (Lockyer et al, 2017). Furthermore, in CBE the learning mostly occurs with peers in small groups. Relatedness permits learners to feel connected and safe in an environment. A related student is interpersonally involved in warm, personal relationships (O'Sullivan, 2015).

According to the self-determination theory (SDT), people are naturally inclined to be curious about their surroundings and eager to expand their knowledge. Learners'

autonomous self-regulation for learning, academic achievement, and welfare is facilitated when educators fulfil their basic psychological requirements for autonomy, competence, and relatedness (Niemiec & Ryan, 2009). Self-regulation starts with the experiences of the individual. People must feel a sense of volition, that is, an unforced willingness to participate in the action, in order for it to be deemed completely self-regulated. When behaviours are completely self-regulated, people do them with full and unconflicted endorsement. The maximum degree of self-regulation entails taking freely chosen activities because one finds them fascinating or significant, whereas the lowest degree entails acting only out of force from an outside source (Deci et al, 1996).

There are four primary categories of motivation, or behavioural regulations, with different degrees of self-determined motivation. They are intrinsic, identified, introjected, and external motivation. Intrinsic motivation is when someone decides to do something for its own sake, whether out of interest, pleasure, or fulfilment, that person is acting with intrinsic motivation. The idea of intrinsic motivation talks about ones' natural desire to fit in, master things, be interested in new things, and explore. This is important for mental and social growth, and it's also a big part of what makes life fun and interesting. When someone is intrinsically motivated, their primary goals are to carry out the behaviour, possibly even well, and to experience the ensuing ad hoc feelings of enjoyment, delight, excitement, and fulfilment. In contrast to intrinsic motivation, extrinsic motivation refers to performing an activity in order to accomplish some separable objective. (Deci et al, 1996).

Externally regulated behaviours are those that are least autonomous and are driven by external factors. These actions are taken in order to fulfil a reward need or external demand. People that engage in externally regulated behaviour usually feel in control or alienated, and their activities are regarded to have an external locus of causality (Ryan & Deci, 2000). When someone is extrinsically driven, they act in a way that is intended to achieve a distinct outcome, like getting a reward, avoiding shame, or winning acceptance. Extrinsically motivated behaviours usually don't happen on their own; instead, they need to be prompted by an instrumentality of some kind.

Identified regulation occurs when a behaviour or regulation is accepted by the self as personally significant or valuable. People act in this way not just because they feel they should, but because they recognise the worth of the action and believe it will help them achieve their own goals (Deci et al, 1996; Niemiec & Ryan, 2009). Integrated regulation is the most autonomous type of extrinsic motivation. It is believed that integrated and identifiable regulation originate from and are consistent with the self (Niemiec & Ryan, 2009). Individuals who have fully integrated their identity will exhibit genuine volition and willingness in their behaviour. Integration-based regulation is the most developed and self-governing type of extrinsic control (Deci et al, 1996).

Introjected regulation describes actions taken in reaction to internal pressures, such as duty or guilt: the person somewhat approves of the motivations behind the action, although in a controlled way (Guay, 2021). In as much as one-to-one education has several benefits, the approach may not be feasible in low resource countries like Malawi because it may be expensive to implement. Many Malawian institutions have staffing challenges hence one-to-one instruction would not be practical.

2.3.11.7 Situational awareness and case-based seminars

Situational awareness (SA) is the ability to perceive, understand, and respond to one's environment to remain safe and make informed decisions. SA facilitates clinical reasoning, diagnostic precision, and appropriate goal-directed performance, it enables health care professionals to immediately adapt treatment strategies in response to changes in clinical situational realities and to modify the course of goal-directed activities accordingly (Feller et al, 2023). SA is a notion that summarises three key concepts; perception of the situation, understanding the meaning of the perception, and rapidly predicting the outcome of the situation (White et al, 2021). Non-technical skills such as leadership, situational awareness, communication, coordination and teamwork are areas where training may improve patient safety (Gregory et al, 2015). Sun et al, (2024) found that a teaching method combined with situational awareness and case-based seminars in a comprehensive nursing skills practice course has the potential to improve the level of self-directed learning, professional identity, and academic self-efficacy, and it increases theoretical scores, practical scores, teaching satisfaction, and student competence. Lee and McNair (2024) found that learning SA early will develop

clinical judgment and critical thinking skills to connect didactic learning to clinical experiences, anticipate patient situations that may unfold, and be prepared to intervene quickly. Potter et al (2022) applied SA in simulation and found that the simulation facilitator influences the development of situation awareness by concentrating perception on vital elements and scenario objectives, fostering psychological safety, and enhancing understanding with the simulation environment during pre-briefing.

2.3.12.7 Assessment of learning in CBE

Competency-based assessments focus on how well students can apply their knowledge in real-world situations, considering time and location constraints. Throughout the learning process, formative assessments given by both the teacher and the learners provide the chance to determine each learner's rate of progress, allowing for acceleration for some learners and early intervention for those who are most in need. The driver is achievement rather than time. Learners who struggle are or the educator guides them through learning and assessment activities to help them to improve and eventually become competent it that area. This type of remediation not only addresses weaknesses but also helps the learners to develop the capacity for self-reflection and lifelong learning. Assessment must be more regular and ongoing, and must be predicated on particular external standards that specify the learning objective (Fullerton et al, 2013). Assessment in CBE means that once a learner has been assessed and has successfully demonstrated mastery of a competency on an assessment, that learner should not be assessed on that competency again. When students fail to meet competence on the assessment, they can have multiple attempts to pass a competency. Furthermore, using multiple types of formative assessment, or informal assessment to monitor student progress that does not equate to a grade or credit, is best practice in higher education (Tkatchov et al, 2020). Biggs and Tang (2007) assert that with plenty of formative feedback before the final summative assessment, the learner might nominate when he or she is ready for the final, summative assessment. Since, this may be laborious, recording devices are recommended for in vivo observation and peer-assessment. Consequently, learners become accustomed to being observed by one another when they give and receive peer feedback. Formative assessments guide daily instruction and student selection of personalised learning opportunities.

Logbooks can be used for formative assessment. It is a list of events, activities, achievements related to the student, verified and recorded as and when they occur. It serves as a record of the progress made by the student. Selected psychomotor and communication related competencies, specific clinical or laboratory experiences, participation in group activities, community experiences, field visits the student made must be recorded. Maintaining a logbook based on the principles of formative assessment has many benefits such as:

- making students more aware of their strengths and weaknesses,
- motivating students for new learning
- value the leaning that is to be documented in the logbook
- feel confident and satisfied with the learning accomplished
- learn regularly in a disciplined manner
- perform better in summative examinations
- have no stress of summative examinations (Shah & Singh, 2021).

In a study aimed to assess the clinical practice competence and associated factors among Midwifery and Nursing students at Bahir Car Health Sciences Colleges, Northwest Ethiopia, it was found that students who had logbooks were five times more likely they were clinically competent compared with those who did not have logbooks (Yezengaw et al, 2024). Gouda (2016) affirms that when designed and used appropriately, logbooks can be used as a tool by educators to provide thoughtful and meaningful feedback to students. the ideal logbook is an instrument that guides students through their clinical rotation by highlighting important clinical objectives, promoting self-reflection and providing an opportunity to obtain feedback from educators. Wright et al (2019) conducted a study to provide an evidence base about the potential educational value of logs as a resource for medical educators to provide feedback to students. Findings revealed that case logs are a valuable resource for educators to enhance students' learning experiences by providing meaningful feedback. Logbooks are implemented based on the principles of formative assessment. All the competencies that are at the Performance level of the Miller's pyramid must be entered in the logbook (Shah & Singh, 2021). Miller's pyramid

model divides clinical competence development into four hierarchical processes (Miller, 1990) as illustrated in the diagram below:

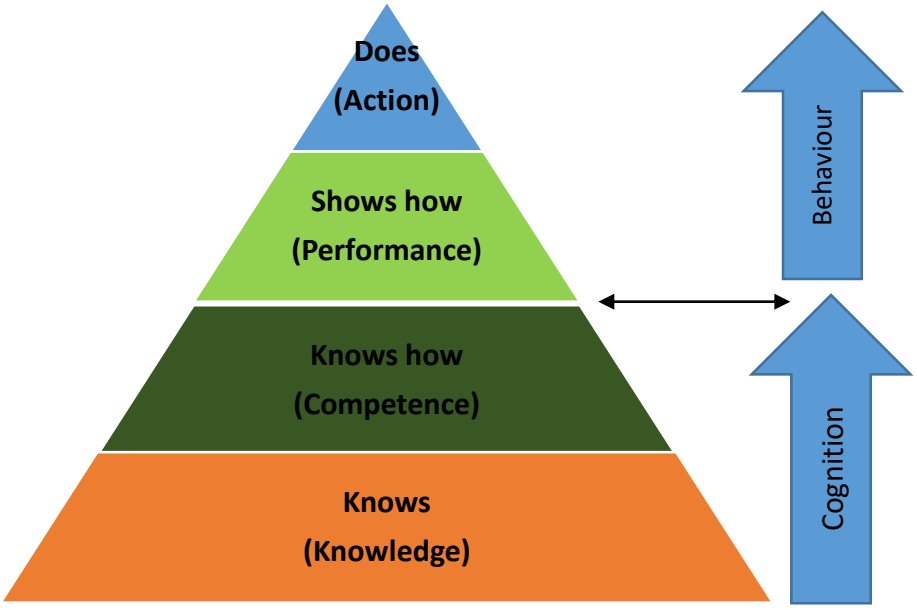


Figure 11: Miller's framework for clinical assessment. Adapted from Miller (1990)

Beginning at the base, the learner knows and can recall facts. This is the foundation for developing clinical competence (Lockyer et al, 2017; Ramani, & Leinster, 2008). This knowledge enables the learner to perform professional tasks (Bajis et al, 2020). Multiple-choice, questionnaire, short-answer test, and true and false questions are examples of assessment strategies used at this level (Lockyer et al, 2017; Ramani et al, 2008). Knowing how to use and apply this knowledge is accomplished by employing the skills required to acquire, analyse, and interpret data to create a rational management plan (Bajis et al, 2020).

Clinical problem solving is one of the methods used in assessment. At the stage of demonstrates how, the learner demonstrates the integration of knowledge and skills into successful clinical performance. OSCE is the effective assessment method at this

level. At the 'Does;' level, the learner provides daily patient care and can be assessed through direct observation of his or her routine clinical performance. The learner demonstrates knowledge, skills, and attitudes at the two final levels (Lockyer et al, 2017; Ramani, & Leinster, 2008). According to Ramani et al (2008), the clinical setting is the only place where the top of the pyramid can be assessed. Nevertheless, OSCEs performed in a simulation centre away from the clinical setting are effective in assessing the top of the pyramid (Hakimi et al, 2021, Cohen et al, 1991; Harden & Gleeson, 1979; Scalese et al, 2007; Savoldelli et al, 2006). The figure below indicates the appropriate assessment strategies for each level of competence development from the lowest to the top level of the pyramid (Miller, 1990).

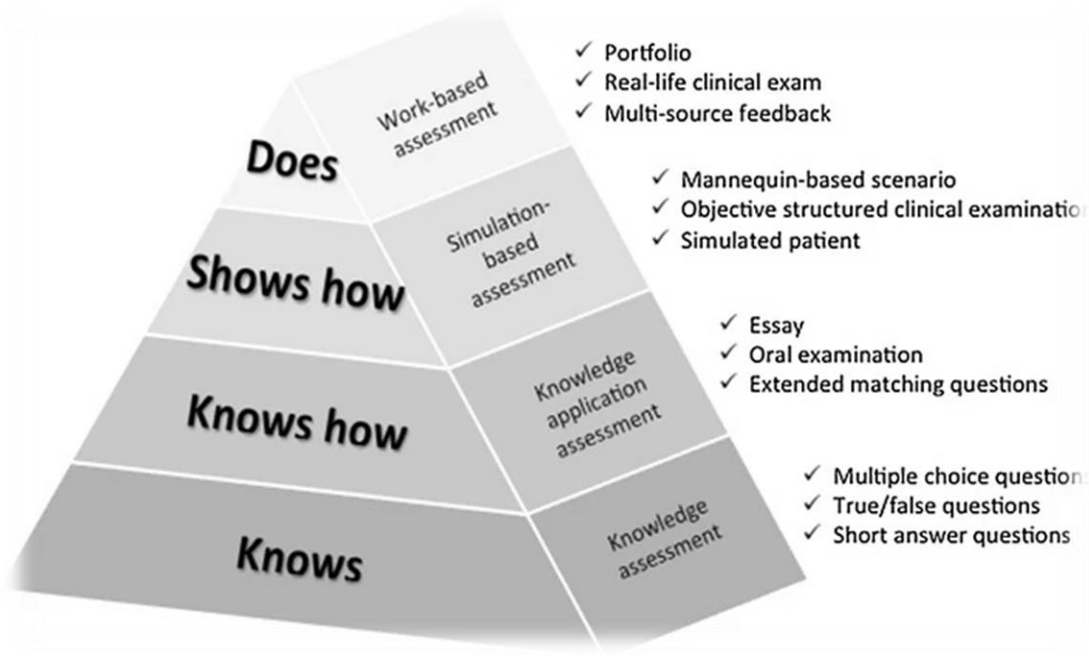


Figure 12: Miller's pyramid of competence matched to assessment methods. Adapted from Chiu et al (2016).

Scalese et al (2007) affirm that written examinations consisting of multiple-choice questions are efficient for assessing what a learner "knows". They rate declarative knowledge as the least taxing cognitive process (Biggs & Tang,2007). Therefore, testing a learner's ability to perform a procedure by asking him or her to write about it is inappropriate. Simulations are the most appropriate assessment methods for outcomes that require learners to demonstrate or "show how" competent they are in performing various skills. According to Spady (1994), tests only reveal a small

portion of what students know and how they can manipulate information mentally**.** Hence, they are insufficient for assessing competencies. Complex forms of doing, such as organising, planning, designing, and producing, can be assessed by having students organise plan, design, and produce things and then observe the outcomes of their efforts. This is authentic performance assessment because it requires learners to do exactly what the verb and content require: organise plan, design, produce, or carry out the demonstration processes rooted in the outcome. This ensures that the learning activities addressed in the intended outcomes are reflected in the teaching, learning, and assessment activities that the learners engage in, thereby maintaining constructive alignment (Biggs & Tang, 2007).

Dubrowski (2005) recommends retention tests as the primary method for determining the learning gained from practice. This involves asking the learner to repeat the skill after a rest period of ten minutes to several days. According to Moulton et al (2006), such tests rely on recalling a skill from memory, which eliminates the effects of transient modulators on performance, such as exhaustion. Therefore, it is a more accurate measure of learning than performance during practice. Transfer tests are primarily intended to ensure that the learner's newly acquired knowledge is directly applicable to a real-world activity. This is significant because skills training attempts to consolidate learning and improve recall and performance of skills in a real-world practice environment. Van der Vleuten and Schuwirth (2005) assert that triangulating information from multiple sources and methods is critical for developing an overall judgment. This bolsters the claim that multiple methods are required to make an accurate assessment judgment. Because all assessment techniques are relative, other methods such as self-assessment, peer assessment, multisource feedback, and portfolios should be utilised.

Summative assessments demonstrate competency mastery. When students are ready, they take assessments, and they have multiple opportunities to demonstrate mastery. Grades indicate mastery of competencies ranging from advanced to not yet competent. Grades reflect the level of mastery of competencies ranging from advanced to not yet competent. When students do not earn course credit, their records indicate competencies that must be re-learned rather than the entire course (Gervais, 2016). Assessments are frequently developed using learning standards as the performance criterion (Lodico et al, 2006). Criterion-referenced assessment

results describe the specific tasks that a student can perform, and how well the student performed at the end of the instruction in comparison to the outcomes and competencies to be achieved (Oermann & Gaberson, 2014). They compare a person's performance to a prearranged standard or criterion, like inadequate, passing, or excellent performance. Burton (2006) states that criterion-referenced assessments have higher validity because they explicitly indicate the alignment between the assessment criteria and unit objectives. Spady (1994) asserts that the essence of this approach is to deal directly with the substance of what is being assessed on its own terms, rather than attaching scores, labels, or symbols to it. In contrast, norm-referenced grades reflect mastery of course standards and a final exam, rather than guiding instruction, assessment instruments are used at specific times to evaluate and classify students (Gervais, 2016).

In norm referenced assessments, scoring indicates how a student's performance compares to that of a group of previously assessed participants, and their scores represent the range of possible performance on the measure. Individual learner results can be compared to those of various norm groups. Assessment results based on norms do not indicate what a student can and cannot do, but rather whether a student performed better or worse than others (Oermann & Gaberson, 2014). Summative assessment in professional faculties is a lifelong learning assessment that deals with real-world professional problems. This enables the student to demonstrate a real-world understanding of the situation, how rationally the problem can be approached, how resources and data are used, how previously taught material is used, and how effectively the solution meets potential emergencies. However, real-world scenarios impose constraints on the costs of various materials, time, and space. In any clinical session, practice teaching and interviewing a patient or client should be included. It should be clear that the student is required to perform certain behaviours to a certain standard (Biggs, 2014).

2.3.12.8 Learner attributes for successful learning in CBE
Prior knowledge

Spady (1994) asserts that successful learning in CBE is dependent on learners having a strong cognitive and psychological foundation of prior learning. According to Kibwana et al (2017), achieving clinical competency is facilitated by admitting candidates who have met a formal admission criterion, which includes entrance

examinations, an in-person interview, or a written statement of interest in the profession. Prior knowledge is the knowledge that a person has in their long-term memory at the start of learning (Simonsmeier et al, 2022). The concept of prior knowledge has its roots in different learning theories, principles, and philosophies. According to constructivism, learners build on what they already know to create, construct, and reconstruct their prior knowledge as they learn from their past and integrate their current experiences and perceptions of reality (Gee, 2012). Likewise, one of the major tennets of cognitive learning theory is that learners actively construct their understanding by attempting to connect new information with prior knowledge (Pellegrino et al, 2001, Shuell, 1986). Cognitive theory, like constructivism, believes that knowledge is non-transferable and that it must be constantly reconstructed whenever new knowledge is encountered.

Prior knowledge is also related to postmodernism philosophy. Postmodernism regards knowledge as a human construct that is never complete but is subject to ongoing revisions as learners gain new experiences. Postmodernism, like constructivism, holds that people form their beliefs and knowledge through their experiences. As a person interacts with his or her surroundings, he or she develops a perspective on knowledge. All these theories and philosophies lead to the concept of prior knowledge as an essential component of learning. It connects, links, relates, and associates new information, which is then reconstructed into a new and improved knowledge (Diaz, 2017).

Prior knowledge impacts on how learners filter and interprets new information. They construct increasingly complex and robust knowledge structures by building on a foundation of strong and accurate prior knowledge and forging links between previously acquired and new knowledge. According to Shing and Brod (2016), prior knowledge aids memory for incoming information by providing a structure into which the new information can be integrated. Shuell (1986) asserts that learning is cumulative; nothing is learned in isolation. What the learner already knows and the extent to which this knowledge is activated during the learning process have significant implications for what will be acquired and whether the material being studied makes sense to the learner. However, prior knowledge alone is insufficient to achieve higher learning outcomes. It should be retrieved and activated to establish relationships between existing and new knowledge. The activation of prior

knowledge has a significant positive impact on learning. It requires moving available knowledge from long-term memory to working memory. If new meaningful information is related to the assimilative context of previously held knowledge in working memory, it can be integrated into the existing knowledge base. Problem analysis, is a strategy in which learners collaboratively activate their prior knowledge when constructing explanations for a presented problem, that can be used to activate learners' prior knowledge (Wetzels et al, 2011).

Mobilisation is another strategy for activating prior knowledge, learners are encouraged to recall all of their knowledge in a specific domain. According to Wetzel et al. (2011), mobilisation serves a broad stage-setting function by providing learners with a relevant context in which to integrate new information. It is an effective strategy for learners of all levels of prior knowledge. The integration of new information into the existing knowledge base is facilitated by establishing relationships between activated prior knowledge and new information, allowing learners to bridge the gap between their prior knowledge and new information.

Another strategy for activating prior knowledge is note taking. It increases the learner's attention and orientation to new material, known as the attention theory. Note taking requires more effort, material that requires deeper levels of activity is encoded more deeply; this is known as the effort theory. Both theories predict that learners who take notes should perform better on average than non-note takers because they learn more or learn more strongly. Note taking requires learners to paraphrase, organise and make sense of the presented material, it encourages them to actively integrate new information into their prior experiences, which is known as the generative theory. The generative theory assumes that taking notes is more likely to encourage learners to activate relevant past experiences and use them as an assimilative set because it promotes the active integration of old and new knowledge. According to Stefanou et al (2008), notetaking has been construed as a constructivist activity. To construct knowledge, a learner must decide whether or not to attend the lecture, decide what is and is not important to note, and make connections between the concepts in the lecture and those concepts and prior knowledge. Note-taking, from this perspective, is a generative activity, consistent with notions of knowledge-construction activities. The more generative the note-taking activity, the more likely learning will occur.

Taking notes is a cognitively complex activity because generative processing while taking notes is difficult and cognitively demanding. It involves listening to the lecturer, selecting important ideas, holding and manipulating these ideas in working memory, interpreting the information, deciding what to record, and then writing it down. According to Titsworth and Kiewra (2004), meaningful learning occurs when students process relevant material in a lecture through their sensory memory (selection), organise the material into a coherent structure in their working memory (organisation), and integrate the material with prior knowledge from their long-term memory (integration). Three experiments were conducted to investigate the effects of taking notes on "what is learned" from videotaped lectures. Findings revealed that note taking can result in a broader learning outcome rather than just more learning because it encourages an assimilative encoding process (Peper & Mayer, 1978). The assimilation theory states that new learning experiences are always integrated into pre-existing knowledge structures (Seel, 2012).

Candidates enrol in courses with knowledge gained from previous courses and daily life. This knowledge is made up of facts, concepts, models, perceptions, beliefs, values, and attitudes, some of which are correct, complete, and appropriate for the context, while others are incorrect, insufficient for the course's learning requirements, or inappropriate for the context. Inactive prior knowledge does not aid in the integration of new information. Inadequate prior knowledge for a task or learning situation does not support new knowledge. Inappropriate or inaccurate prior knowledge actively distorts or impedes new learning (Ambrose et al, 2010). Therefore, educators are advised to be more cautious in gathering information about the nature of students' prior knowledge (Diaz, 2017). Tsai and Tsai (2005) investigated the critical success factors in transferring nursing knowledge, and the impact of prior knowledge when evaluating the success factors for transferring nursing knowledge. Findings revealed that students with prior knowledge were more independent than those without prior knowledge. They preferred self-directed learning over students without prior knowledge.

2.3.12.9 Interest

Furthermore, a learner's interest is important in learning. Interest is a motivating factor that influences a learner's decision to pursue a field in which he or she strives for high levels of performance or exhibits intrinsic motivation. Interest and learning

have a strong relationship. The direction and duration of attention are affected by interest (Eidswick, 2010). Individual interest is a long-term preference for certain topics, subject areas, or activities, a particular object, or field of knowledge, whereas situational interest is an emotional state induced by situational stimuli. Interest influences the quality of learning, the use of learning strategies, and the overall learning experience (Schiefele, 1991). According to Tobias (1994), people with high interest in something tend to learn more about it because they are more likely to devote quality time to activities related to that field than those who are less interested. Interest has an energising effect on learning and encourages students to use deep comprehension processes. Intrinsically motivated learners choose and stick with activities because of the inherent rewards they receive, like a sense of personal mastery, control, challenge, or curiosity. They attend to the task and are willing to devote significant mental effort to the task as determined by goals generated by the learners or derived directly from the task structure. In contrast, extrinsically motivated learners, engage in educational activities only when they offer the possibility of external rewards, like demonstrations of superior performance or attainment of some tangible reinforcers, and when learners believe they can obtain them. Extrinsic motivation is consistent with ego orientation and performance goals. Extrinsically motivated learners engage in an educational activity to outperform others, to obtain an extrinsic reward, and to demonstrate their superior ability in comparison to others. Intrinsic motivation is consistent with task orientation and learning goals. Learners with task orientation and learning goals engage in an educational activity to learn and to improve their competence (Lepper, 1988; Dweck, 1986).

2.3.12.10 Learning environment

O'Sullivan (2015) asserts that the learning environment is critical in CBE. In fact, this is an overarching concept in the CBE framework. Heraldseid et al (2015) categorise the learning environment into, physical environment which includes material equipment, facilities, learning tools and standardised procedures. Organisational environment which consists of expectations, feedback, and student faculty relationships. Psychosocial environment consisting of course structure and faculty resources. Van Schaik et al (2019) affirm that in exceptional learning environments, learning is work and work is learning. Those who learn and work in an environment co-create learning and work. They promote an intentional approach

to learning that supports the development of reflective practitioners who engage in lifelong learning, regardless of seniority, expertise, or role.

2.3.12.11 Physical environment

According to Nordquist and Laing (2014), physical learning environments reflect and express underlying assumptions about teaching and learning. The design, organisation, and layout of physical learning environments expresses teaching and learning values. The physical environment should support the underlying ideas of a curriculum, as expressed by the institution's vision for learning. The alignment of physical learning spaces with curriculum is a critical component in the health professions (Nordquist et al, 2016). Nordquist and Sundberg (2013) asserts that the physical learning spaces on many campuses around the world were designed in an era that focused on didactic lectures, one-way communication, and decontextualised learning from clinical practice. They had very little space for visualising ideas; whiteboard space was limited, and in many cases, a whiteboard was blocked by a projection screen used by educators. The learning environment must encourage dialogue between learners and educators, as well as between learners, foster peer-learning, and foster a sense of identity or the perception that the learners are part of a community of learners. In line with this, the NMCM (2013) requires nursing and midwifery teaching institutions to regularly improve and update students' learning environments by expanding facilities to match developments in education and practice. Situated cognition has practical applications for the physical environment, such as providing safe spaces for feedback delivery. Allowing students to converse with peers and teachers in close proximity to the point of care, which emphasises the value of evidence seeking as an essential component of patient care, and ensuring that current technology is available to support the search for and retrieval of the best evidence, this is crucial for producing evidence-based practitioners (Schumacher et al, 2013).

Likewise, the clinical setting has a clinical learning environment, which is the social interactions, organisational cultures and structures, and physical and virtual spaces that surround and shape students' experiences, perceptions, and learning. Educational spaces in clinical settings face a problem shared by all educational spaces: the ability of the environment to drive the educational process and the promotion of educational activities based on small group work in large, tiered lecture theatres (Nordquist et al,

2019). Dijkstra et al (2015) explored how elements of competency-based programmes in educational innovations, attention to competencies and learning environment, were related to perceived preparedness for practice among new consultants. Findings revealed that the learning environment is the strongest predictor of preparedness for practice. Heraldseid et al (2015) state that a lack of equipment, the need to reuse old and outdated equipment, forces students to improvise, resulting in a false and inadequate learning environment. In line with this, Ewertsson et al (2015) emphasise the importance of a clinical skills laboratory (CSL) for learning of psychomotor skills through simulations. In their study whose aim was to describe nursing students' experiences of learning in the CSL in preparation for their clinical practice, students reported that CSL acted as a bridge between the university and clinical setting. Learners gained professional knowledge and personal development from learning in the CSL. They assert that the CSL creates a bridge between the university and clinical setting where learners develop assimilate theory and practice and develop a reflective attitude. This is illustrated in the diagram below:

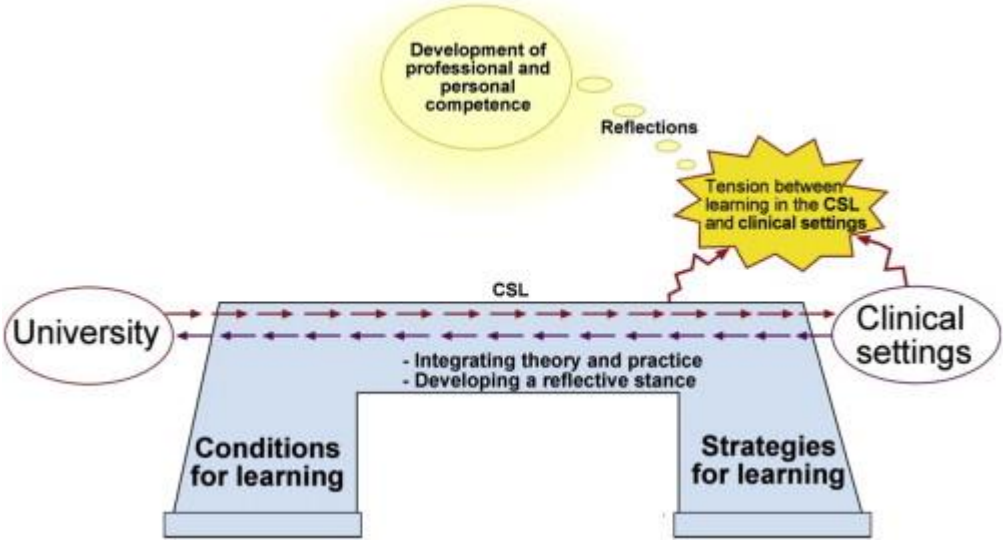


Figure13: Walking the bridge: adapted from Ewertsson et al (2015).

Condition for learning and strategies for learning are essential to the bridge. The CSL helps learners to practice in small groups, dyads, practice repeatedly without fear of making mistakes. Learners asserted that it would be difficult to learn skills without access to the CSL. The CSL fostered ongoing deliberations about how best they could learn.

However, Patton et al (2013) argue that working in a less resourced hospital that lacks the most up-to-date equipment found in a large teaching hospital is more likely to result in the development of creative practices that use inventiveness to optimise the use of available equipment. According to O'Sullivan (2015), the way educators teach has a significant impact on the learning environment. Educators must incorporate teaching strategies that reinforce motivation to improve learning, and institutions must support them in doing so. Learner involvement, association, affiliation, and instructor support are characteristics of healthy relationships in learning environments (Scho¨nrock-Adema et al, 2012).

2.3.12.12 Organisational environment

Heraldseid et al (2015) define organisational environment as educator facilitation, allocation, and management of students' learning. The method of supervision and the number of supervision sessions at clinical placements must be properly structured (Sundler et al, 2014). Saarikoski et al (2007), assert that supervision can take place either individually or in groups. However, group supervision is a traditional model of supervision in which the teacher-student ratio is 1: 10, implying that little teaching time is allocated to each student. Current models emphasise preceptorship, a one-to-one model of student supervision that provides the student with individualised attention. The learner works with a resource person who is readily available in the clinical setting daily (Peirce, 1991). This assists learners to attain clinical efficiency and professional development. The preceptor's main responsibility is to facilitate the learning (Chickerella & Lutz, 1981). Individualised supervision promotes the development of a close relationship between the preceptor and the student, which promotes learning and the provision of individual guidance and support (Dibert & Goldenberg, 1995). Preceptorship has been proposed as a clinical teaching method that could help nurse educators with reducing expenses and allows many learners to be prepared clinically by fewer educators. Therefore, it is speculated that preceptorship would reduce the possibility of additional expenditures, such as hiring more faculty, in the event of increased student enrolment (Myrick, 1988). Dibert and Goldenberg (1995) examined the relationships among preceptors' perceptions of benefits, rewards, supports and commitment to the preceptor role. They concluded that preceptors are frequently requested to integrate and socialise students into the profession.

2.3.12.13 Psychosocial environment

This includes psychological and social factors that may influence job satisfaction, health, and ability to perform in the clinical skills laboratory. Attitudes of clinical staff influence students' clinical learning experiences. Jackson and Mannix (2001) conducted a study to gain insights about planned clinical experience from nursing students in their first year of an undergraduate programme. They found that learners appreciated any interest shown in them and their learning by nurses working at clinical sites. They were pleased when they were allowed to contribute to care delivery at their level of knowledge, and when nurses demonstrated an interest in their learning by questioning them on things they had learned throughout the shift. Additionally, collaboration between the school and the clinical staff is critical in establishing an effective clinical learning environment (Papp et al, 2003). The diagram below illustrates the educational environment:

Figure 14: Framework for clinical skills learning environment**.** Adapted from Heraldseid et al (2015).

2.3.12.14 Critique of CBE

Although CBE seems to be an ideal education model for health professionals, it is criticised based on its theoretical underpinning, learning strategy, the assessment, the focus on competencies, beneficiaries, and its effectiveness in the preparation of learners. Brightwell and Grant (2013) argue that competency-based training arose from behaviourist educational theory. Competences cannot describe complex human behaviour because the sum of what professionals do exceed any of the parts that can be described in competency terms. Professionalism is the application of knowledge and judgment to a specific client situation. These are essential to the profession and cannot be replaced by behavioural prescriptions derived from academic debate, management teams, or randomised controlled trials (Grant, 1999). Leung (2002) asserts that the behaviourist framework breaks down work roles into small discrete tasks, disregarding the connections between individual tasks as well as the meaning underlying each task. Hence it cannot accurately represent the complexities of real-world situations. Likewise, McLellan et al (2012) affirm that the shortcoming of CBE is that it takes an atomistic approach, breaking complex skills down into their constituent parts so they can be easily assessed, removing the complexity and context of real professional practice, making it an insufficient measure of professional aptitude. True competence is a socially situated concept that requires learners to adapt to uncertainty, respond to the various contextual features of different workplaces, think strategically, monitor, and control their performance. Ross et al (2018), assert that one major criticism of CBE is that it lacks evidence that it produces safer or more competent graduates than non-CBE approaches.

Brightwell, and Grant (2013) assert that a competency-based curriculum ignores important social and cultural aspects of professionalism, jeopardising graduate preparation. They state that a competency-based curriculum cannot adequately describe what it means to be a professional. Because the concept of CBE does not sufficiently describe higher cognitive skills, the integrated and individual application and structure of complex knowledge, skills, and problem-solving required for professional performance, and it lacks the necessary emphasis on working in service alongside other professionals that is essential to achieve this. Instead, emphasis is placed on the importance of learning in the workplace, where the learner incorporates the social and cultural elements of becoming a professional, learns to apply their knowledge and skills, and to be a professional.

Morcke et al (2013) assert that constructive alignment is a constructivist approach associated with a deep approach to learning because it encourages students to engage in appropriate activities and achieve desired levels of performance. However, critics argue that there is insufficient evidence that CBE has progressed beyond its behaviourist roots. This is because Biggs and Tang's approach limits learning to observable behaviours and excludes elements of learning related to affects and professional attributes. Brooks (2009), affirms that it is difficult to place competency within the framework of liberal education, with its ideals of creating good and virtuous citizens and maximising human potential. Rather, CBE focuses on vocational performance, or training an individual to perform a specific job that has been pre-specified and detailed by an authority or governing body. This approach devalues individual professionals and their practical wisdom in applying their education to patients.

CBE de-emphasises time-based student credentialing. Instead of predetermined and universally applied time frames, learner progression is based on evidence of skills. However, critics argue that by focusing on competencies, learners may perceive those milestones for the goal of the profession, rather than excellence (Frank et al, 2010). Brightwell and Grant (2013) argue that by focusing on skill acquisition-based progression, time spent in clinical practice is overlooked. This exposes educational programmes to political pressure to respond to workforce planning issues by further shortening training, to the detriment of learners. Furthermore, there is no evidence in practice of trainees progressing faster or slower consequent to competence assessments**.**

Since the implementation of CBE, simulation has become a learning tool within competency-based curricula (Gervais, 2016). Brightwell and Grant (2013) argue that if simulation environments operate independently of their clinical context, the need to develop the full range of complex clinical judgments required for performance as a health practitioner is overlooked. This disregards students' learning needs in a real-world health care setting. To realise the full potential of simulation as a learning aid, educators must commit to integrating simulation into clinical practice (Kneebone et al, 2020). Groom et al (2014) argue that the rationale for simulation fidelity matching that in ‘‘clinical reality’’ has not been well referenced or grounded in applicable learning theory. Hence, there is a notable lack of empirical evidence to support the

presumption that the closer the level of fidelity matches that of reality, the better the learning outcomes. Additionally, much as literature on simulation emphasises on the utilisation of low, medium and high-fidelity simulators, patient simulators have not been categorically assigned to a standardised complexity levelling. Critics point out a lack of outcomes data for CBE, competency-based assessment tools, or assessment programmes in the literature. Ross et al (2018) conducted a study to determine whether competency-based assessment is associated with better identification of and support for residents in difficulty. It revealed that the competency-based achievement system approach to assessment is associated with better identification of learners in difficulty, facilitating the programme's ability to address learners' deficiencies in competence. Learners experiencing difficulties were better supported after its implementation, and their deficiencies did not reoccur on subsequent rotations. Glass (2014) affirms that the CBE tick box exercise is faulty. It discourages learners' personal development, does not encourage the learner to seek broader experiences but to simply fill a book with signatures. Rather, students should strive to see as many patients as possible, have an insatiable and unstoppable thirst for knowledge, strive for excellence, be obsessed with personal improvement, and strive to provide the best care possible. Leung (2002) asserts that using checklists to pass or fail candidates is superficial and demotivating because it encourages students to do the right thing to pass rather than think critically and excel. The measure used should be chosen based on the purpose of the examination, not on the belief that one measure can better capture increase in expertise. Morcke et al (2013) state that CBE has been heavily criticised for reducing values, insight, and judgment to simple behavioural goals and for failing to place affective, social, cultural, aesthetic, and ethical learning processes at the heart of education. It provides a logical foundation for designing competence assessments that assess observable behaviours, but affects cannot be reduced to observable behaviours.

2.3. 12.15 Conclusion

CBE originated from the USA. It focuses on observable behaviours demonstrated by the learner at the completion of an educational programme. It is an approach to preparing learners for practice that is fundamentally oriented to graduate outcome abilities and organised around competencies derived from an analysis of society needs. The outcomes determine what is learnt, the type of students to enrol into the programme, the learning strategies, the support learners require to achieve the

competencies, assessment methods, and the educational environment in which the teaching and learning takes place. Problem-based learning, team-based learning, flipped classroom, one-to-one education, and simulation are effective teaching and learning strategies in CBE. It is important that the domain of learning be aligned with the teaching methodologies. The key aspect in CBE is constructive alignment whereby the action verb used to define the outcome should be activated in the teaching and learning, and the assessment. Formative assessment is best practice in CBE. CBE is behaviouristic which renders it to criticism for the inability to support the development of higher cognitive skills. However, through simulation, which is an appropriate teaching strategy in CBE, experiential learning techniques rooted in cognitive, social, and constructivist learning theories, are incorporated in the teaching, and learning process. Through simulation psychomotor skills are taught effectively, allowing learners to master a complex skill through repetition, feedback, and practice. Since simulation is often implemented in a small group, it encourages the use of collective working memory and reflects social constructivism. Integrating simulation with problem-based learning, links principles of constructivism and collaborative learning to the teaching and learning. Simulation gives learners an opportunity to apply and transform procedural knowledge into procedural skills. Simulation allows educators to achieve constructive alignment because the intended verb in the outcome statement is present in the teaching, learning and assessment of students. Nevertheless, the learning environment is critical in CBE. Material equipment, facilities, learning tools and standardised procedures, student faculty relationships, favourable course structure. Student's prior knowledge, interest and motivation are necessary for successful CBE.

2.3.12.16 Reflexivity

The literature review has not only helped me to understand what is involved in CBE, but also that teaching and learning are embedded in scientific beliefs and principles. Personally, I believe that CBE is appropriate for the preparation of professional midwives in Malawi considering that midwives are the main providers of maternal and neonatal care in the country. Uys and Gwele (2005) affirm that the CBE curriculum has the potential to produce critical midwives if used properly. According to Biggs and Tang (2007) this way of teaching and learning is appropriate and is a useful way of maintaining standards. But through the literature review I have come to realise that there have been many gaps in my teaching including that of my

colleagues, which in turn impacts negatively on the learning. Learners who report having experienced good teaching are similarly likely to report adopting a deep approach (Trigwell & Prosser, 1999). My teaching methods has mostly been based from what I experienced in my training. The few occasions that I have used appropriate strategies, it has been by chance rather than knowingly. This has made me to realise that the teaching approaches may have contributed to the poor performance of graduates. I have come to realise that the fact that a midwife performs well clinically does not necessarily mean that they can teach well. It is not enough to have a curriculum that is appropriate for the production of a well-qualified midwife, knowledge of evidence-based teaching and learning strategies is paramount.

CHAPTER 3
METHODS

3 Introduction

This chapter presents a description of the research process. It provides information regarding the research question and objectives, the choice of research methods and the logic behind the methods used in the context of the study. Explanations for the researcher preferring a particular method or technique as opposed to others will be discussed. This renders the research findings capable of being evaluated either by the researcher or by others (Kothari, 2004). Important methodological considerations will also be presented including the selection of participants, sampling, data collection and data analysis process, the role of the researcher in relation to reflexivity, the research design, philosophical underpinnings, and ethical considerations. A discussion on how rigor was established in the study, and the study limitations will be specified accordingly.

3.1 Research paradigm

A paradigm is a worldview, a framework of beliefs, values and methods. A paradigm serves several purposes, firstly, it highlights significant problems in any field. Secondly, it makes it possible to create theories and models that help researchers address these problems. Thirdly, it specifies the standards for the necessary research instruments, such as the methodology, kinds of instruments, and data gathering that would enable the problems to be resolved. Fourthly, it offers the guidelines, practices, and techniques to be considered when comparable issues resurface (Yong et al, 2021). Weaver and Olson (2005) assert that positivist, postpositivist, constructivism/interpretive and critical social theory research paradigms have been used in nursing. This study was guided by constructivism paradigm also known as interpretivism or naturalism (Tashakkori & Teddlie, 2003).

Constructivist researchers study interpersonal interactions. They also concentrate on the specific contexts in which people live and work to comprehend the historical and cultural backgrounds of the participants. Rather than beginning with a theory, as in post positivism, the researcher's intention is to make sense of or interpret the meanings others have about the world. Crotty (1998) identified three assumptions regarding constructivism which state that:

- Humans construct meaning as they interact with the world they are interpreting. Therefore, qualitative researchers ask open-ended questions to allow participants to express themselves.
- Humans interact with their environment and make sense of it based on their historical and social perspectives, we are all born into a world of meaning that our culture has bestowed upon us. Hence qualitative researchers seek to understand the context of the participants by personally visiting the setting and gathering information. They also interpret what they discover, based on the researcher's experiences and background.
- The fundamental generation of meaning is always social, arising from interaction with a human community. The qualitative research process is essentially inductive, with the inquirer generating meaning from the data gathered in the field.

In line with these views, open ended questions were used, I visited settings and gathered data personally, the interpretation of the finding was shaped by my experiences and background, but emphasis was on gaining understanding of the meanings people attach to the teaching and learning practices of midwifery at KCN.

According to Lincoln and Guba (1985), a paradigm encompasses four elements, namely, epistemology, ontology, methodology and axiology. They comprise the basic assumptions, beliefs, norms, and values that the paradigm holds (Kivunja, & Kuyini, 2017).

3.2 Epistemology

Epistemology is the philosophical study of the nature, origin, and limits of human knowledge. The term is derived from the Greek *epistēmē* ("knowledge") and *logos* ("reason") and is sometimes referred to as the theory of knowledge (Siegel, 2014). Epistemology is concerned with the ways in which people know and learn about the social world. It focuses on issues such as how we can know about reality and what the foundation of our knowledge is, as well as what constitutes knowledge in the world (Snape, & Spencer, 2014; Krauss, 2005). How does one learn about the world? The main epistemological stances are positivism, which hold that natural science methods are appropriate for social inquiry because human behaviour is governed by law-like regularities, and that independent, objective, and value-free social research is possible. The opposing perspective is interpretivism,

which claims that natural science methods are unsuitable for social investigation because the social world is not governed by regularities with law-like properties. Consequently, a social researcher investigates and comprehends the social world through the participants' and their own perspectives, and explanations are provided at the level of meaning rather than cause (Snape & Spencer, 2003).

This study aims at understanding human behaviour, the participants' interpretation of the midwifery education at KCN, hence the interpretive stance applies. The 'reality' of the world is not the focus of this research approach, rather it is how participants interpret it. The aim is to understand the world from participants' point of view (Hadi & Closs, 2016). In the 18th century Giambattista Vico, a philosopher proposed that there is a distinction between the natural and social worlds, and that social organisation and social experiences shape people's perceptions of reality and truth. The interpretative tradition is based on anthropology and contends that truth and knowledge are subjective as well as culturally and historically situated, based on people's experiences and interpretations of them. Because the researcher cannot be separated from his or her own values and beliefs, these invariably influence how the researcher collects, interprets, and analyses data (Gemma, 2018).

Interpretivism is prevalent in qualitative health research that focuses on the meaning of phenomena. The goal of interpretive research is to understand the social world in its natural setting, without altering the perspective of individual experiences. The assumption in interpretive research is that humans create their worlds, and that detailed descriptions are required to describe, comprehend, and derive meaning. Contrarywise, quantitative research is underpinned by positivism philosophy, an approach that assumes reality is observable and exists "out there," is stable, and measurable, and thus is mostly aligned with quantitative methods of data collection and analysis (Merriam, 2009). For positivists, observation and reason are the best ways to understand human behaviour; true knowledge is based on sensory experience obtained through observation and experimentation (Green & Thorogood, 2004). Positivists value objectivity and strive to keep personal beliefs and biases in check to avoid contaminating the phenomenon under study (Polit & Beck, 2012). Interpretivism is characterised by several perspectives: firstly, humans are not mechanistic; they embrace multiple realities that are understood contextually. Secondly, the social world cannot be described without examining how people

construct social practice using language, symbols, and meaning. Finally, no social explanation is complete unless it adequately describes the role of meaning in human actions (Klenke, 2016). Epistemology also involves the relationship between the inquirer and those being studied. In this study, I am an insider being a previous student of KCN and involved in the teaching of midwifery at KCN. There was an interaction with the participants and findings were a creation of the interactive process (Polit & Beck 2012). Corby et al (2015) assert that when conducting interpretive studies, it is appropriate for the researchers to acknowledge their past experiences and accept that this may impact on the research, researchers can be honest and reveal their interest.

3.3 Ontology

Ontology is concerned with the nature of reality, which entails thinking of world under investigation (Ritchie et al, 2014). Relativists believe that reality can be known through socially constructed meanings and that there is no single shared social reality, only a series of alternative social constructions (Snape, & Spencer, 2003). In constructivist/interpretivist paradigm, there are multiple subjective realities, each of which is socially constructed by and between individuals (Brown & Dueñas, 2020). In contrast, realism asserts that there is an external reality that exists independently of people's beliefs or understanding of it. There are two types of realism: materialism, which asserts that there is a real world but that only material aspects of that world are real; and subtle or critical realism, which holds that an external reality exists apart from people's beliefs and understanding; reality is only known through the human mind and socially constructed meanings. Idealism is the belief that reality can only be known through the human mind and socially constructed meanings. Its variant contends that reality can only be known through socially constructed meanings; meanings are shared, and there is a collective or objective mind. This study focuses on what there is to know about the clinical teaching and learning practices of midwifery at KCN. Therefore, relativist ontology applies because the researcher believes that the phenomenon has multiple realities because of people’s different perceptions, which can be explored and understood through interactions between the researcher and the participants. The participants have their own thoughts, interpretations and understanding of the phenomenon (Kivunja & Kuyini, 2017).

3.4 Axiology

This involves ethical issues that must be considered when a researcher plans a research proposal. Kivunja and Kuyini (2017) emphasise the importance of a researcher demonstrating understanding of right and wrong behaviour in research conduct. This is accomplished when a researcher recognises that people have dignity and fundamental rights to make choices that must be respected. The emphasis is on four fundamental principles: privacy, accuracy, property, and accessibility (PAPA). Privacy refers to what information a participant can and cannot reveal about themselves or their institution to the research. Accuracy refers to the genuineness and accuracy of collected data, how the researcher verifies the accuracy of recorded data with informants, and how compensation will be provided in the event of injury.

Property deals with ownership, payment, payment fairness, and data dissemination channels. Accessibility refers to the security of the data and who will have access to it. In this study participants were allowed to be open and give information they were comfortable with. Data were recorded using a voice recorder. I did not anticipate any harm to participants and myself based on the nature of the study. I owned the data and kept all data in a lockable drawer in my office. Any information kept on the computer was protected by a password. This study assumes a balanced axiology meaning that the research reflects values of the researcher, who will present a balanced report of the findings (Kivunja & Kuyini, 2017).

3.5 Methodology

This is the general research strategy that outlines the way in which a research project is to be undertaken and, identifies the methods to be used in it. It explains how a researcher anticipates to carry out the research, it is a logical systematic plan to resolve a research problem. There are quantitative, qualitative, and mixed methods research methodologies. In quantitative methodology a researcher examines relationships between variables using numerical data and statistical techniques. In contrast, qualitative research is concerned with connotations that people assign to things in their lives. Researchers identify with the participants under study to understand how the participants view things (Taylor, 2015). To gain understanding of the complexity of the problem being studied, qualitative research places a strong emphasis on gathering non-numerical or descriptive data, such as words, pictures, and observations (Alam & Asmawi, 2024). This study was concerned with

perceptions that people attach to teaching and learning of midwifery at KCN. As someone who studied and teaches midwifery at KCN, I identified with the participants under study to understand how they view midwifery education at KCN, hence the qualitative methodology was appropriate.

3.6 Research question

This study analyses the clinical teaching and learning practices utilised by KCN midwifery educators, and learners for the production of competent midwives for effective midwifery practice at the completion of the program. To achieve this objective, the study is guided by the following research question: What teaching and learning strategies are utilised by KCN midwifery educators and learners?

3.7 Study objectives

To explore educators' awareness of the nature of the KCN midwifery programme

To examine teaching strategies utilised by lectures in preparation of students for midwifery practice.

To identify learning strategies utilised by students in preparation for midwifery practice.

To explore teaching and learning strategies utilised by Mzuzu University students for midwifery practice.

To compare the teaching and learning strategies utilised by KCN and Mzuzu University students for midwifery practice.

To explore KCN lecturers' perception of the preparedness of KCN midwifery students for midwifery practice.

To explore KCN graduates' perception of their preparation for midwifery practice

To determine stakeholders' expectations regarding the standard of performance of KCN graduates.

3.8 Study setting

The study took place at KCN in Lilongwe Malawi, a constituent college of the University of Malawi (UNIMA).

3.9 Population.

The population for the study consisted of preregistration midwifery students, midwifery educators, KCN and Mzuzu midwifery graduates, and senior midwives. Qualitative research is appropriate for seeking to understand a phenomenon from the perspectives of the people experiencing it (Ayton, 2023).

3.10 Sample and recruitment

In qualitative research, there are no formal criteria for determining sample size and, therefore, no rules to suggest when a sample size is small or large enough for the study. Basically, the 'richness' of data collected is more important than the number of participants (Tuckett, 2004). However, the researcher still requires insight regarding the size most likely to achieve the purpose, and the richness of the data collected (Patton 2002). According to Lopez and Whitehead (2013) the number of participants in qualitative studies, a common range is usually somewhere from 8 to 15 participants. The sample size should be adequate to achieve data saturation. In this study the sample size was 47, which included six educators and six senior midwives for the first phase of the study. The second phase comprised of five graduate midwives from KCN, four from Mzuzu University and 26 students from KCN. As stated earlier, senior midwives tend to prefer graduates from Mzuzu University, hence, I decided to include them in the study to gain understanding of their learning. The sample size was justifiable because being a qualitative study, the main concern was to gather in-depth understanding of the midwifery teaching and learning practices utilised at KCN. The focus was on the meaning rather than the generalisation (Dworkin, 2012; Polit & Beck, 2012).

3.10.1 Sampling technique

Purposive sampling was used to recruit appropriate participants for the study. This involves selection of participants based on the researchers' judgement about what potential participants will be most informative (Moser & Korstjens, 2018; Wilson & Hutchinson, 1991). The research question dictated the type of participants in this study. Hence, KCN students, graduate midwives, educators and senior midwives were selected as the participants who could provide rich descriptions of midwifery education at KCN. The rationale for choosing this approach is that I was seeking

knowledge about the teaching and learning practices, which the participants would provide by virtue of their experience. Sample similarity was maintained because the graduates were from KCN, the students were from the same cohort and were taught by the same lecturers and midwives. Maintaining sample homogeneity ensures that the study remains contextualised within a defined setting, hence, generalisation from the study will be made carefully (Robinson, 2014). However, convenience sampling was used to recruit Mzuzu University participants because they were conveniently available at the hospital.

3.10.2 Inclusion criteria

I sought to talk to KCN educators directly involved in classroom and clinical teaching of midwifery at Lilongwe campus regardless of their gender and age. However, since the institution does not have male midwifery lecturers, I ended up with female participants only. Male and female senior midwives aged 30-60, with at least 3 years of experience in midwifery care, who have worked with KCN midwifery graduates, were recruited from Bwaila and Ethel Mutharika maternity units in Lilongwe. Newly qualified male and female midwives from KCN and Mzuzu University, of different ages, who were in their first year of employment, were recruited from Bwaila and Ethel Mutharika maternity units.

3.10.3 Exclusion criteria

Male and female qualified midwives who had not worked directly with the graduates were excluded based on the assumption that they would not give rich descriptions of the graduates' performance. Male and female graduate midwives from KCN but from a different cohort. KCN educators who were not involved in classroom and clinical teaching of midwifery. KCN educators who were involved in classroom and clinical teaching but had taught for less than 3 years. Graduates who had worked more than one year. I assumed that after practicing for one-year, graduate midwives benefit from on-the-job training therefore would not be true representatives of the phenomenon. Likewise, qualified midwives who had not worked directly with the graduates would not give rich descriptions of their performance.

3.11 Data collection

Semi-structured one-to- one interviews were used to collect data from educators, senior midwives, and Mzuzu University graduates. I collected the data (Creswell, 2009) using an interview guide (Appendix 12, 13 and 14). The CBE framework by

Harden et al (1999) was used as a guide in the preparation of the questions for educators, midwives, and graduates from KCN and Mzuzu. However, questions for FGDs with KCN students were prepared based on data collected from the lecturers and midwives and the CBE framework. Piloting was done to identify the questions that were making sense, hence, third year KCN students were selected to pilot the students' FGD questions, for the interviews, I selected an educator from the nursing programme. Changes were made accordingly based on the responses. During the interviews, I established rapport with the respondent, questioning did not follow a specific order. I asked open ended questions that required participants to give detailed information. Probing was done when interesting areas arose, and the interview followed the respondent's interests or concerns to produce richer data (Smith & Osborn, 2007). Interview guides helped me to ensure that all question areas were covered. However, during the interview, participants were encouraged to talk freely about all the topics on the guide (Polit & Beck, 2010). In an interpretative study, the interviewer works with the interviewee in a flexible partnership, to identify and interpret the relevant meanings that will be used to make sense of the topic. The one-to-one interviews facilitated this; because they are easily managed; allow establishment of rapport, encourage respondents to think and are appropriate for in-depth and personal discussion (Reid et al, 2005). I focused on learning the meaning that the participants hold about the phenomenon, not the meaning that I brought to the research or writers express in the literature (Creswell, 2009). Each interview lasted one hour.

Focus group discussions (FGD) were used to collect data from students and KCN graduates. Initially, I planned a FGD with Mzuzu graduates as well. But this was not possible because only four participants were available, hence not sufficient for a FGD. Five to ten people are recommended for FGDs (Polit & Beck, 2010; Creswell, 2009). A group format is efficient and can generate a lot of dialogue especially if everyone is comfortable sharing their views or experiences in front of a group (Polit & Beck, 2010). The FGDs helped to clarify and check for understanding of findings of the first phase among participants and between participants and researcher (Bradbury-Jones et al, 2009, Palmer et al, 2010). The KCN graduates' FGD comprised of five midwives, and the students' FGDs comprised of seven participants to allow in-depth discussions and for every participant to contribute adequately

because everyone's views are important (Finch & Lewis, 2003). All interviews were audio recorded (Smith & Osborn, 2007).

Data collection was done at the participants' natural settings (Creswell, 2009), face to face interviews with educators were done at KCN in the participant's office. I went to Ethel Mutharika and interviewed each participant at a place of their choice within the maternity unit. FGDs with students with KCN and Mzuzu graduates were done at the maternity unit at the various health facilities where the students were having their clinical practice. It is recommended that FGDs be done in place that is familiar to participants (Finch & Lewis, 2003).

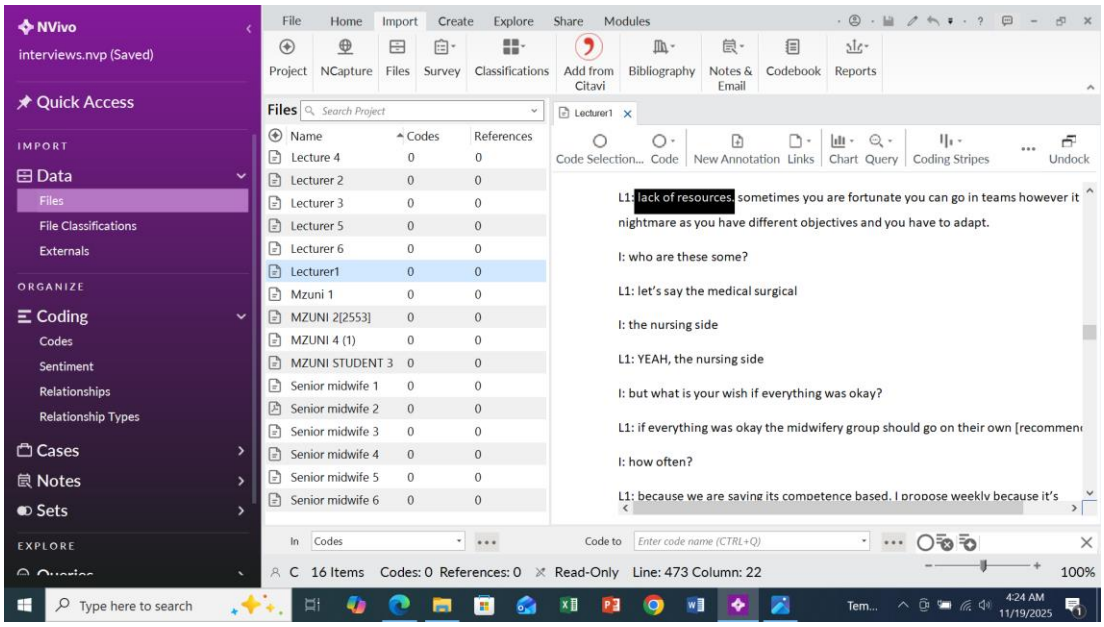
I collected data from the curriculum as it contains the outcomes, prescribes the teaching, learning and assessment strategies educators should use in the instruction (Ojong & Maduka, 2013). I also examined the timetables, I assumed that scheduling of timetables can indicate if teaching is learner centred or teacher centred. I further, examined the students' assessment forms, to determine if the grading system used focuses on comparing the learner's performance to his or her peers or against pre-set standards. Assessment tools can indicate if the assessment is task dependent which is associated with performance-based criteria. In contrast, competency-based criteria are broadly defined, their interpretation requires students to exert additional mental effort to interpret and link them to the learning task at hand (Fastre´et al, 2014). I therefore developed questions (Appendix 15**)** in line with the CBE approach and used findings from the educators to collect data from the curriculum, timetable, and students' clinical assessment forms to get information on teaching strategies embedded within them.

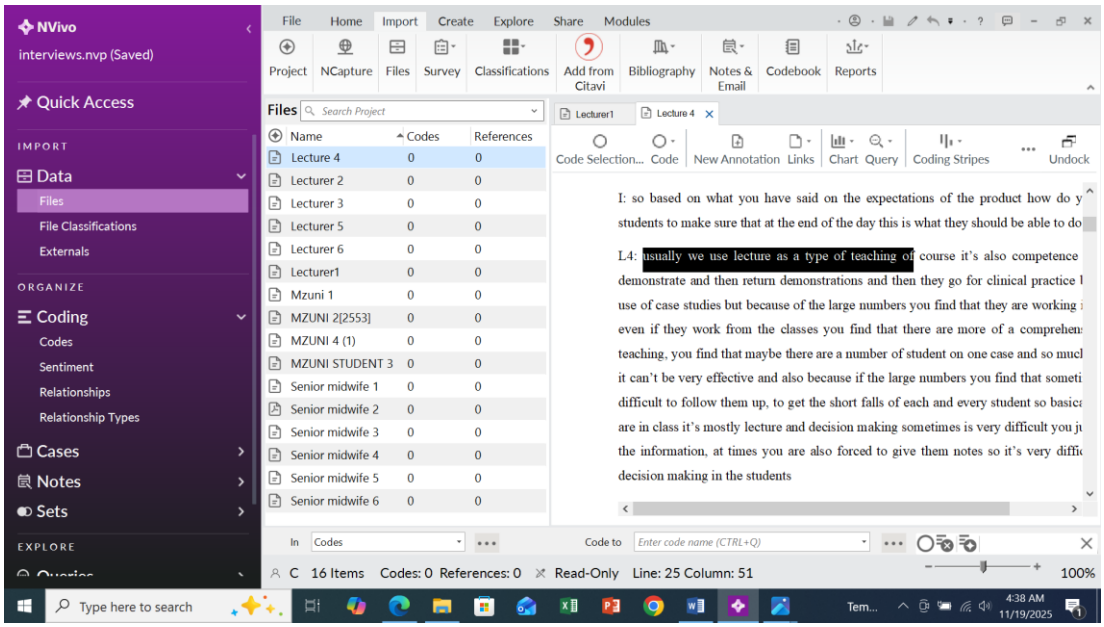
3.12 Data analysis

Data were analysed thematically. I used the NVivo, a powerful qualitative data analysis software to competently manage and organise the large volumes of data. The NVivo enables researchers to explore deeper into complex datasets. Additionally, it facilitates the extraction of meaningful insights and patterns from different sources, eventually contributing to the rigor and depth of research findings (Limna, 2023; Castleberry & Nolen, 2018). The software enhances transparency in research processes, improving rigor and credibility (Limna, 2023).

Thematic analysis (TA) is a method for identifying, analysing, and reporting patterns within data. It is a strategy and a tool that provides a rich, detailed, and multidimensional account of the data (Braun & Clarke, 2006). TA is suited to a wide range of research interests and theoretical perspectives, and is useful as a basic method because it works with a wide range of research questions. It can be used to analyse different types of data, from secondary sources such as media to transcripts of focus groups or interviews; it works with large or small data-sets; and it can be applied to produce data-driven or theory-driven analyses (Clarke & Braun, 2017). In this study TA was applied to produce data driven analyses. This is an inductive analysis which means the data were analysed with no predetermined theory, structure, or framework. In contrast, theoretical TA is driven by the researcher's theoretical or analytic interest (Braun & Clarke, 2006, Braun & Clarke, 2022; Byrne, 2022). Additionally, this study is guided by constructivism paradigm therefore inductive analysis which is aligned with constructivist approaches is appropriate (Byrne, 2022).

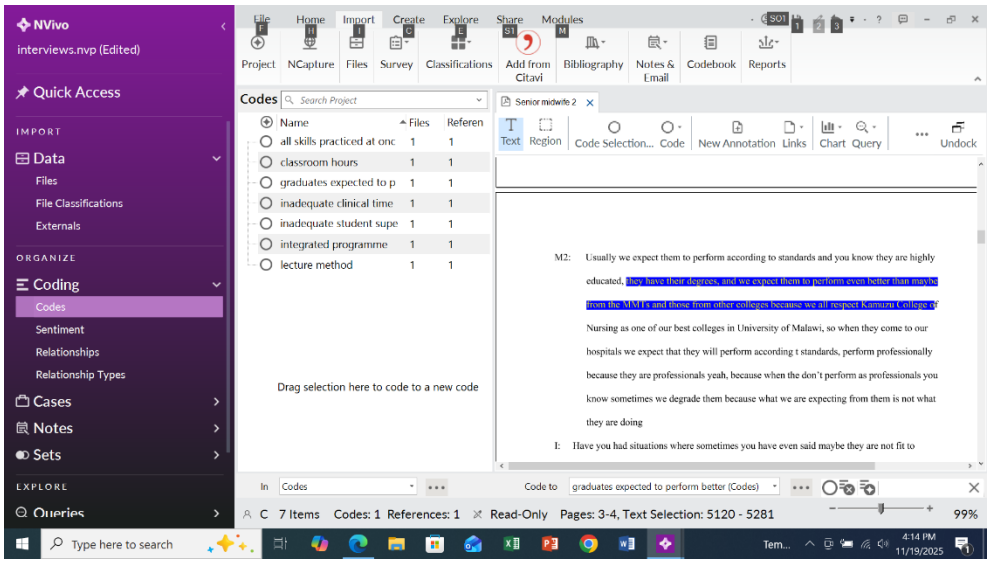
The six steps described by Braun and Clarke (2006) were followed. Firstly, I familiarised with the data, this involved reading and re-reading of the entire dataset to become familiar with the data and noted down initial ideas, consequently, I identified appropriate information relevant to the research question. I manually transcribed the data which facilitated a deep immersion into the data.





The screenshots demonstrate the early stages of the thematic analysis using NVivo where I started taking note of initial ideas.

After the familiarisation, initial codes were generated, this involved coding interesting features of the data in a systematic fashion across the entire data set, organising data relevant to each code. Codes are fundamental building blocks of what will later become themes during the process of thematic analysis (Byrne, 2022; Braun et al, 2019). Codes capture a single idea associated with a segment of data, and consist of brief labels identifying what is of interest in the data (Braun et al, 2019). Since an inductive/ data driven analysis was used in this study, codes were reflective of the content of the data, free from any pre-conceived theory or conceptual framework. Data were not coded to fit a pre-existing coding frame, but instead open-coded to best represent meaning as communicated by the participants. Codes represent the researcher's interpretations of patterns of meaning across the dataset. It is critical that the pattern of codes and data items communicate something meaningful that helps to answer the research question (Braun & Clarke, 2013).



On this screeshot I present the beginning of identification of codes from the data set. This is also evidence that the codes were data driven.

To generate themes, I reviewed and analysed the coded data as to how different codes could be combined according to shared meanings so that they may form themes or sub-themes. I collapsed several codes sharing a similar underlying concept or feature of the data into one single code. I played an active role in interpreting codes and themes, and identifying which were relevant to the research question (Byrne, 2022). To identify a theme, I searched for a common, recurring pattern

across the dataset, organised around a central concept (Braun et al, 2019). In TA, during the coding process, some codes become characteristic of an over-arching narrative within the data, and they are promoted as a sub-theme or even a theme. Generally, the themes are tied together and produce a comprehensible and coherent picture of the dataset (Braun & Clarke, 2012). In this study I identified a code 'lack of resources' as one of the over-arching narratives within the data, hence, I promoted it to become a theme. I later produced a thematic map organising all codes and data items in relation to their respective themes.

I reviewed themes to assess how well they provided the most suitable interpretation of the data in relation to the coded data items and the entire dataset, and how well they provided the most appropriate interpretation of the data in relation to the research question. To produce a report each theme and sub-theme were expressed in relation to the dataset and the research question. I ensured that each theme provided a comprehensible and internally consistent account of the data that could not be told by the other themes. Nevertheless, I was mindful that all themes came together to create an eloquent narrative consistent with the content of the dataset and informative in relation to the research question. It is recommended that the themes connect in a logical and meaningful manner, constructing a logical narrative of the data. The significant, themes build upon previously reported themes, while remaining internally reliable and capable of communicating their individual narrative if separated from the other themes (Braun and Clarke 2012; Byrne, 2022). Relevant quotes were included to convince the reader of the merit and strength of the analysis. Direct quotes serve as an indication to the reader that the researcher's interpretations originate from the participants' lived experiences (Morrow, 2005; Corden & Sainsbury, 2006; Sandelowski, 1994; Eldh et al, 2020). The thematic map is presented below:

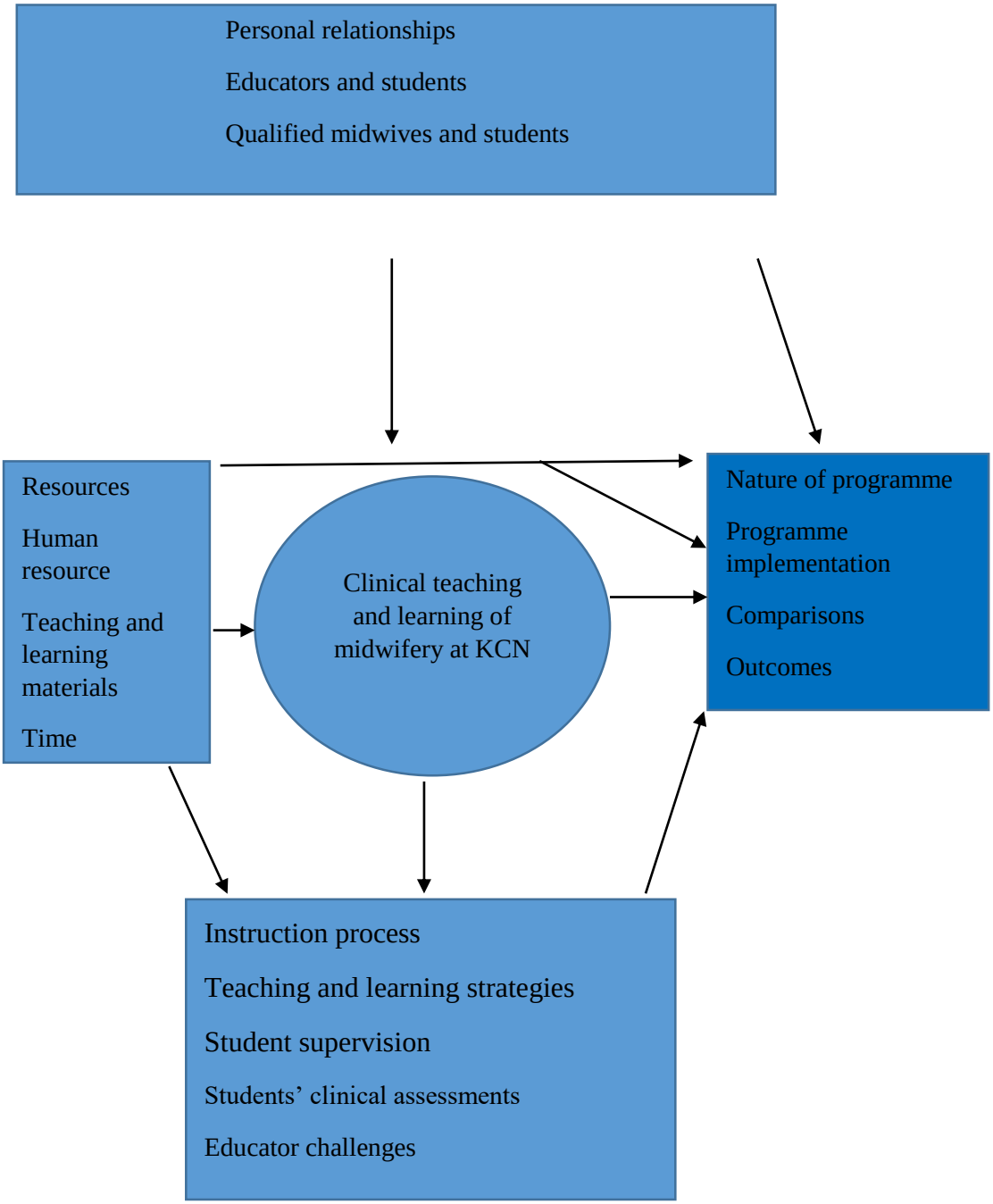


Figure 15: Thematic map

3.13 Research design

The study was done in two phases sequentially. In phase one I collected data from senior midwives, these are professional midwives who hold leadership positions at ward level at Kamuzu Central Hospital-Ethel Mutharika maternity wing. Then I collected data from KCN lecturers who are involved in classroom and clinical teaching of midwifery. Findings from data analysis in phase one were used to develop questions that guided in data collection in phase two. In phase two, I collected data from year-four KCN student midwives, and KCN graduate midwives who were in their first year of midwifery practice at Bwaila and Ethel Mutharika. Findings from KCN students and graduates were used to formulate questions for Mzuzu university graduates who went through a similar programme and were in their first year of practice. This was done to compare the teaching and learning practices of Mzuzu University and KCN students. I decided to compare the teaching and learning practices of students from the two institutions because as stated earlier, upon completion of a similar midwifery programme, stakeholders perceive that Mzuzu University graduates perform better than KCN graduates. Lastly, I collected data from the timetables, curriculum, and students' clinical assessment forms that were used for the teaching of the cohort from where the participants were drawn. Data from multiple sources complement one another thereby increasing the credibility of the study. The assumption was that data from these sources would provide evidence that would result in a single proposition about clinical teaching and learning of midwifery at KCN (Mathison, 1988). Below is a diagrammatic presentation of the study:

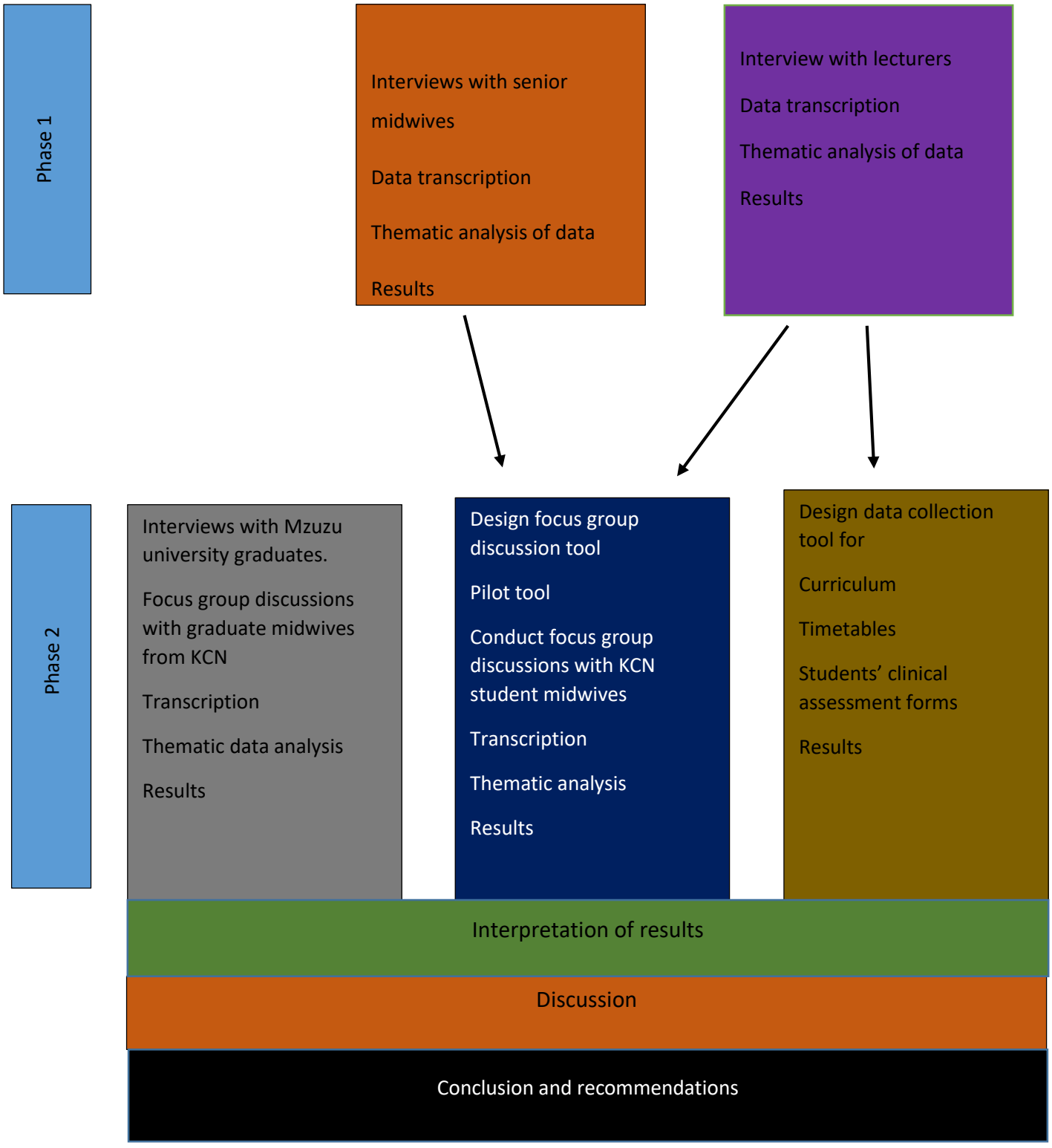


Figure 16: Study flow diagram.

3.14 Rigour

Koch and Harrington (1998) assert that the most common criticism levelled at qualitative research is that it is highly susceptible to researcher bias and cannot be objective. Anderson (2010) asserts that the quality of research is heavily dependent on the researcher's individual skills and is more easily influenced by the researcher's personal biases. However, many researchers believe that rigour and trustworthiness can be achieved in qualitative research in a variety of ways. When findings closely match the meanings described by participants, trustworthiness is established. To manage trustworthiness threats, qualitative researchers must employ a variety of strategies to describe research findings in a way that accurately represents the meanings as described by participants. The commonly used criteria for developing the trustworthiness of a qualitative inquiry include credibility, dependability, confirmability, and transferability (Lincoln & Guba,1985). These four criteria represent parallels to the positivists' criteria of internal validity, reliability, objectivity, and external validity (Koch &Harrington, 1998).

3.15 Credibility

Credibility refers to trust in the accuracy of data and interpretations of data (Polit & Beck, 2012**).** Credibility is like internal validity in quantitative research which allows others to recognise the experiences contained within the study by interpreting the experiences of the participants (Thomas & Magilvy, 2011; Morrow, 2005). It is the element that allows others to recognise the experiences contained within the study by interpreting the experiences of the participants. The credibility of this study has been enhanced through audit trail, hence, I kept the interview transcripts, data analysis and process notes, and drafts of the final report (Cope, 2014). Additionally, a reflexive diary containing the inquirer's own perceptions, changing insights, affective responses, experiences, ideas, fears, mistakes, confusions, breakthroughs, and problems that arise during the process has been kept (Denzin, 1978), and ideas made in collecting data (Merriam, 2009). Reflections on personal experiences recorded in a reflective journal assist in interpreting perceptions of the participants (Balls, 2009). In this study as regards to how my thinking evolved throughout the study, I am aware that I had no philosophical position for the study, due to lack of experience. After substantial reading on research methodology and attending research methods courses, I concluded that the interpretivist position was an appropriate foundation for this study to help me comprehend individuals' perceptions

of the social phenomena with which they engaged (Rehman & Alharthi, 2016). As for sources of data, originally, I did not plan to include Mzuzu University graduates, curriculum, timetables and student assessment forms. During discussion with my supervisors I decided to include Mzuzu University graduates because they went through a similar programme and the senior midwives perceived that they performed better than KCN graduates. I assumed that information from the documents would provide information regarding the teaching and learning practices.

3.16 Dependability

Dependability is the stability of data over time and conditions; it is equivalent to reliability in quantitative studies (Polit & Beck,2012). Baillie (2015) affirms that dependability refers to whether the research was carried out in a dependable and auditable manner. To accomplish this, the researcher maintains an audit trail of decision making throughout the research process, which includes describing the specific purpose of the study; how and why the participants were chosen for the study; how the data were collected and how long the data collection lasted; and discussing the interpretation of the research findings (Thomas & Magilvy, 2011). Triangulation is a strategy designed to ensure dependability (Pedersen et al, 2014). Dependability in this study was achieved through obtaining data from multiple sources.

3.17 Confirmability

Confirmability refers to objectivity, or the possibility of agreement between two or more independent people about the accuracy, relevance, or meaning of the data. This criterion is concerned with establishing that the data accurately represent the information provided by participants and that the inquirer did not invent the interpretations of those data. To meet this criterion, findings must reflect the participants' voices and the conditions of the inquiry, rather than the researcher's biases, motivations, or perspectives (Polit & Beck, 2012). The inclusion of rich quotes from participants' narratives that depict each emerging theme enhances the dependability of findings in this study (Cope, 2014) the quotes portray that the study findings are representative of the participants' views. Furthermore, during data collection, participants were asked to clarify unfamiliar and slang words, this was the researcher's conscious effort to follow, rather than lead, the direction of the interviews (Thomas & Magilvy, 2011).

3.18 Transferability

Transferability refers to the potential for extrapolation, or the extent to which findings can be transferred to or applied in other settings or groups. This was accomplished by providing rich and thorough description, as well as sufficient information, of the research setting, study background, and study participants (Polit & Beck, 2012; Merriam, 2009, Lodico et al, 2006), including demographics (Thomas & Magilvy, 2011). A detailed description of the sampling method is provided. Rich description assists readers in determining whether the research is applicable to their situation (Baille, 2015). In qualitative research, the reader judges or determines transferability. Thick descriptions allow readers to make judgments about the similarity of the participants, setting, resources, policies, culture, and other characteristics of the research site to the reader's site. Thus, transferability is determined not by whether the study includes a representative sample, but by how well the researcher has enabled readers to determine whether similar processes will be effective in their own communities by thoroughly understanding how they occur at the research site (Lodico et al, 2006).

3.19 Triangulation

Another approach that enhanced credibility in this study is triangulation (Eldh, 2020). The interpretive, constructivist perspective of this study renders triangulation the principal strategy to ensure validity and reliability (Merriam, 2009). Triangulation is based on the concept of convergence of multiple perspectives for mutual data confirmation to ensure that all aspects of a phenomenon have been investigated (Krefting, 1991). Convergence occurs when data from various sources or collected using various methods agree. The assumption is that when used in conjunction with other data sources, the bias inherent in any data source is cancelled out (Mathison,1988). Denzin (1978) defines four basic types of triangulation, one of which is data triangulation, which is the use of multiple data sources. There is time, space, and person triangulation within data triangulation. Time triangulation is the process of gathering data on the same phenomenon multiple times. It entails gathering data at various times of the day or throughout the year.

Space triangulation is the process of collecting data on the same phenomenon at multiple locations to test for cross-site consistency. Person triangulation entails gathering data from various types or levels of people, such as individuals, groups

such as families, and communities, with the goal of validating data through multiple perspectives on the phenomenon (Mathison, 1988; Polit & Beck, 2012; Denzin, 1978). Investigator triangulation refers to the use of multiple observers as opposed to a single observer. Triangulating observers eliminates the potential bias that comes from a single person and ensures greater reliability in observations. Investigator triangulation adds breadth to the phenomenon of interest by providing confirmation of findings as well as different perspectives. Method triangulation involves the use of multiple methods of data collection about the same phenomenon (Polit & Beck, 2012). This type of triangulation, frequently used in qualitative studies, may include interviews, observation, and field notes. Theoretical triangulation uses different theories to analyse and interpret data. With this type of triangulation, different theories or hypotheses can assist the researcher in supporting or refuting findings (Carter et al, 2014). In this study, data triangulation was used, data were collected from educators, students, senior midwives, graduates, and documents. The use of multiple sources assisted in drawing conclusions about what constitutes the truth (Polit & Beck, 2012). The convergence of the data enhances trustworthiness of findings in this study (Carter et al, 2014). Themes have been established based on converging several sources of data or perspectives from participants, hence, this process can be claimed as adding to the validity of this study (Creswell, 2009). I developed a matrix for triangulation (Appendix 16) that demonstrates convergence of data in this study.

3.20 Ethical considerations

Ethical review is vital to ascertain the safety of research participants. Therefore, the proposal for this study was submitted to various ethics committees, namely, the College of Human and Health Sciences ethics committee at Swansea University (Appendix 1), the research and publications committee at KCN, the National Commission for Science and Technology in Malawi which scrutinises research that involves human beings, (appendix 2) and the ethics committee at Kamuzu Central Hospital (appendix 3). I also sought permission from authorities at KCN to conduct the study at the institution (Appendix 4), and administrators of Bwaila and Kamuzu Central Hospital (appendix 5). Anonymity was achieved by identifying participants with numbers rather than names during interviews. Polit and Beck (2008) assert that all research with humans involves intrusion into personal lives of participants, hence they have the right to expect that the data they provide will be kept in strictest

confidence and that I cannot link them with the information given. Audio tapes and notes were locked up in a filing cabinet that was only accessed by me.

Informed consent is critical in research, it demonstrates that participants have received enough information and have willingly accepted to participate in the study. Therefore, before starting interviews, participants were given a full explanation of the study, participant selection, how they could contact the researcher if necessary and they signed a consent form (appendix 6, 7 and 8). Hence, they participated voluntarily without coercion in respect to their right of self-determination (Polit & Beck, 2008). Informed consent implies that participants have adequate information about the research and understand the information to enable them to make an informed decision to participate or decline participation. Since I do not hold any administrative position at the institution, there was no reason for fear among the participants, therefore it was anticipated that participants would respond to questions freely and honestly. The participants were informed of the importance of the study to midwifery practice in Malawi such that their contribution was of paramount importance (appendix 9). After the completion of the study, all data will be destroyed.

In interpretive qualitative studies, participants are recruited based on their expertise in the phenomenon being explored. The graduate midwives, educators and senior midwives were experts on their own experiences and could offer an understanding of their thoughts, commitments, and feelings through telling their own stories, in their own words, and in as much detail as possible (Reid et al, 2005). I involved the principal in identifying participants who met the criteria at KCN, while the hospital director through the unit matron assisted in identifying participants at Ethel Mutharika maternity unit. I wrote them letters, and they sent out invitations to potential participants on my behalf and those who wished to participate contacted me independently by phone, I indicated my contact on an enclosed participants' information sheet which contained information about the study. Creswell (2009) affirms that purposeful sampling involves the selection of participants, sites and documents that will best help the researcher understand the problem and the research question. In addition to the participants mentioned above, documents such as the curriculum, old timetables and students' clinical assessment forms were selected for data collection in this study**. (**Appendices 4, 6, & 11).

3.21 Presentation of findings

Findings from the different sources of data have been presented separately in the findings chapter. Themes have been presented in relation to each data source. Each theme has been presented separately and logically; the results part of the study is not combined with the discussion. A separate chapter has been dedicated to discussing the findings in relation to available evidence (Javad & Zarea, 2016). The aim is to explain the story that is contained in each of the themes therefore, direct verbatim quotes that present the core point of the explanation have been used (Braun, & Clarke, 2006). Direct literal quotes from participants enhance clarity of the themes (Burnard et al, 2008). Common as well as less common themes have been included in the findings to ensure that the full picture of the research findings is presented (White et al, 2003).

3.22 Study limitation

The qualitative approach and the researcher being an insider subjects this study to criticism of subjectivity, however, the approach is suitable for this type of study. I took the required measures, already described in this chapter, to make the findings trustworthy. Qualitative research is also critiqued for utilise unrepresentative samples so that the study findings cannot be generalised. Lincoln and Guba (1985) argue that generalisation of findings from naturalistic studies is associated with transferability and individual recognition of relevance rather than reductionist concerns such as sample size and measures of control. Therefore, these findings provide significant insights into the teaching and learning of midwifery student at KCN, and the findings may have implications to other institutions with similar educational practices.

3.23 Conclusion

Using constructivism/interpretive qualitative approach, this study explored the teaching and learning practices of midwifery faculty members and students at KCN in response to stakeholder complaints of poor graduates' performance. All the necessary ethical committees gave their approval for the conduct of the study. The study was done sequentially in two phases, with the first phase involving senior midwives and lectures. Findings from this phase guided in designing data collection instruments for the next phase. Purposive sampling was used to select male and female participants who could provide rich descriptions of midwifery education at KCN. Data were collected using face to face semi-structured interviews and focus group discussions. Data were also collected from documents using a data collection

instrument. Data collected from multiple sources allowed triangulation of the findings to enhance credibility of the results. The NVivo software was used to facilitate the thematic analysis approach during data analysis. Themes were derived from the data, and results from all data sources have been presented separately with direct quotes from participants to enhance clarity of the themes. Trustworthiness of the study has been achieved through the researcher's declaration of her position in the study, keeping all documents and a reflective diary for possible audit, triangulation, including direct quotes from participants' narratives that depict each emerging theme, providing sufficient information, of the research setting and the background of the study, study participants and a detailed account of the sampling method. Lastly, limitations of the study have been presented.

3.24 Reflexivity

My position as a researcher was that of a previous KCN student and an educator exploring the clinical teaching and learning practices in midwifery, in response to reports of poor graduates' performance. Fleming (2018) asserts that educators involved in work-integrated learning are frequently well positioned to gain an in-depth understanding of the programme situated within the organisations in which they are actively involved and currently employed. I chose the interpretive paradigm because I am part of the social phenomenon under study (Pervin & Mokhtar, 2022). I recognise that my background shapes my interpretation, and I position myself in the research to acknowledge how my interpretation flows from my personal, cultural, and historical experiences (Creswell, 2009). However, being an insider renders the study open to criticism and subject to scrutiny, so it was particularly important to establish trustworthiness in the research design (Fleming,2018).

The study participants were midwifery educators, senior midwives who happen to be my colleagues and students respectively. I am well acquainted with the midwives, the educators and the KCN graduates. However, I had very little interaction with the students who were drawn from among year four students, during classroom and clinical teaching and learning, before I left Malawi for my studies, hence, I was less familiar with them. Similarly, I was not familiar with the Mzuzu graduates. Nevertheless, whether I was familiar with them or not, the research evolved around the educator-student relationship, educator-educator relationship, and midwife-educator (midwife) relationship. This renders the data from students and graduates as

a product of the distinctive power relationship between me and the participants (Finlay, 2002a, England, 1994, Finefter-Rosenbluh, 2017). My main concern was my role and position as a researcher and educator. To deal with this I created a welcoming, nonthreatening environment to allow the interviewees to be willing to share their personal experiences (Karnieli-Miller et al, 2009). In the recruitment letter I used words that indicated equal partnership between me and the proposed participants, such as, pointing out that their participation would provide them the opportunity to take part in evaluation, making recommendations, and ensuring quality midwifery education for quality care to reduce maternal and neonatal mortality rates in Malawi. Additionally, in the consent form, I stated that their role in the study would be that of a co-researcher because of the nature of the study, this further emphasised the issue of equal partnership in the study. The educators are my co-workers, and since I do not hold an administrative position at the institution, there was no need for them to fear. They too were informed that they were coresearchers in this study.

CHAPTER 4
FINDINGS

4 Introduction

This chapter presents findings from the different data sources about the teaching and learning practices utilised by midwifery KCN faculty members and students respectively. Perceptions of midwifery lecturers, senior midwives, KCN graduates, Mzuzu graduates and KCN students will be presented separately. Some direct quotes from participants will be included to serve as an indication to the reader that the researcher's interpretations originate from the participants' lived experiences (Morrow, 2005; Corden & Sainsbury, 2006; Sandelowski, 1994). Open coding which is inductive, was used whereby distinct concepts and themes were identified for categorisation. This was achieved by reading through the data several times and then creating labels for chunks of data that summarised what was happening, not based on existing theory rather on the meaning that emerged from the data (Williams & Moser, 2019, Gallicano, 2013). An interpretation of the findings follows in chapter five. The table below indicates characteristics of the sample.

Table: 9 Sample characteristics

Sample	Male	Female	Age	Work experience	Qualification
Midwives	0	6	30-60	3 years in labour and delivery room	BSc Nursing and midwifery, MSc Midwifery
Educators	0	6	30-60	3 years of classroom and clinical teaching	PhD, MSc
KCN graduates	3	2	Diverse	Within 1 year of employment	BSc Nursing and Midwifery
Mzuzu graduates	1	3	Diverse	Within 1 year of employment	BSc Nursing and Midwifery
KCN students	11	15	Diverse		Malawi school certificate of education
	15	32			
Total sample	47				

KCN Educators

4. 1 Nature of programme

All educators were aware that they were implementing a competency-based midwifery programme and emphasises on students' achievement of competencies pre-registration in line with the stipulations of the national regulatory body. The programme was designed in response to the country's needs, mainly the high maternal and neonatal rate.

> *I am involved in a competency-based programme whereby students learn the theory so that they acquire competencies as regards to midwifery, so it is the theory after that they go to the clinical area where they spend most of the time, they follow the guidelines of the nurses and midwives' council because this regulates the education and the safety of the public we have poor maternal and neonatal health indicators, women are dying because they are not properly managed, so, we reinforce competence knowing that the students will be professional midwives (L1)*

Educators disapproved the combination of the two programmes. One educator bemoaned that KCN is politically influenced, and there was no involvement of the curriculum implementors during the curriculum development.

> *the big assessment is KCN is a political institution, and it has been influenced politically there has been a cry for midwives and nurses in the hospitals and the demand for increase in high, KCN has increased the enrolment, and the programmes, but there is one thing that is no correlation, the midwifery establishment of the staff for has been the same since 1996 they said 15 lecturers were required for UCM in 1996 we are here in 2019 the faculty establishment is still 15 yet we have several midwifery programmes there is no correlation so, there is this ceiling on the recruitment yet there is a political demand to increase the enrolment, it is a miss match and that is affecting the quality by the end of the day because the very same few lecturers must run around in all programmes and that can never equate to good quality (L6)*

4.1.2 Programme implementation

Educators were aware that the teaching of midwifery starts with classroom teaching followed by clinical practise. However, the classroom hours are long because educators want to finish all the content.

> *teaching starts with the theory thereafter students go to the clinical area to acquire skills and even the attitudes (L1)*

> *classes start from 7:30-5pm, on the schedule its written 4:30 but sometimes you go up to 5 to finish up the stuff (L3)*

After the theory session, students were taught several procedures in one day. After demonstration of a procedure, due to the large numbers, only a few students practiced under the observation of an educators which compromised the learning of skills. This is mostly done a day or two before clinical practice.

> *usually, we have a single day to do the check offs and we may have 4 or 5 scenarios that we demonstrate to the students and have them do return the demonstrations the group is so large, it is difficult to demonstrate and observe each student doing a return demonstration which may compromise learning for some students we lump all the skills towards the end, and we allocate a day or two before students go to the clinical placement (L6)*

One educator suggested that during morning sessions teaching should be done on critical areas while afternoon sessions are scheduled for group work.

> *ideally if the whole day is allocated to midwifery, the lecturer can teach the crucial areas in the morning and give students the afternoon for group work (L1)*

After the theory block students had a 4-week rotational in several clinical placements for clinical practice.

> *the time given for labour ward and ante-natal clinic is 4 weeks the same as at postnatal (L5)*

4. 1.3 Outcomes

Students are required to fulfil NMCM pre-registration competencies. However, students did not fulfil all pre-registration minimum requirements within the academic calendar. Generally, some students are unable to find a client to demonstrate their competence, mostly due to the large enrolment.

> *there are competences which are prescribed by the regulatory body this is the midwives' council, so they are put together to ensure that at least by the end of the placement the students have achieved the competences (L3)*

> *students are unable to finish the council requirements and they forced to find their own time to complete them. They go to the health facilities with letters from the college to complete the requirements (L1)*

Educators had high expectations regarding the graduates' performance because they are prepared at degree level. But educators were dissatisfied with the performance of the graduates, hence they refer to them as half baked

> *they can be managers; they will also be educators and researchers they are taught at a higher level they (graduates) cannot perform they will be hazardous because they don't have the skills, they are half baked no wonder there are claims that they are half baked (L1)*

In this regard, one educator recommended that new graduates need support most probably in the form of a one-year internship.

> *when they graduate, they still need support from the qualified staff, maybe have a year of internship where they would still have the required support (L3)*

4.1.4 Instruction process

Educators acknowledge that during practicum learners experienced theory practice gap because sometimes educators were not aware of changes in policy regarding care.

> *there are some things which you are not teaching in class so there is a gap because sometimes policies might have changed you are required to incorporate the new policies in the teaching (L1)*

4.1.5 Teaching and learning strategies

Regarding the teaching and learning all educators in this study said the lecture is the most dominant teaching strategy utilised in the teaching and learning of midwifery. Despite having knowledge of interactive teaching strategies, educators believe it is difficult to utilise interactive teaching and learning strategies in a large group.

> *basically, when we are in class its mostly lecture it is very difficult because of the large numbers 265 in year 4 and 165 in year 3 you just give them the information, at times you are also forced to give them notes. Sometimes you feel you are supposed to demonstrate you find that you don't even when you want to do it because of the large numbers it's very difficult (L4)*

One educator acknowledged her knowledge of interactive teaching and learning strategies, and stated the she had utilised some in her teaching which include role play.

> *role plays, discussion of the case studies in small groups sometimes letting the groups go in the clinical area to get that case and you watch them discuss and learn the pathophysiology they discuss in detail about that patient (L4)*

Some educators perceived that there are good and bad role models among midwives in some health facilities who ensured that they carried out procedures accordingly.

> *staff at Mapale and Mchinji try to do procedures in an ideal manner so, students can follow standing protocols unlike other placements where staff do shortcuts (L1)*

4.1.6 Student supervision

This refers to student supervision during clinical practice. Educators reported several issues regarding student support such as failure of educators to go for clinical supervision, absence of educators on first day of students' clinical practice, assuming that midwives would supervise the students. Typically, educators supervise students once during the four-week placement.

> *we are supposed to check on them at the clinical site, but we don't, some lecturers don't go for supervision. you go second week, first week you are not there for orientation, if you happen to be lucky and go the first week it means you will go the third week but its twice per allocation (L1)*
> *as midwives we know that as we are practicing in the clinical areas one of our duties is teaching so as lecturers at KCN we*

believe that the midwives who are working in the hospitals will be able to assist students in their skills daily(L3)

In the course of the clinical practice, educators realised that students are not supported. Midwives reported that they already had heavy workload. Hence, learners were not supervised which turned them to an extra pair of hands, and this compromised students' learning.

sometimes because of heavy workload midwives are like oh, let me go attend to the family planning clients leaving students to attend to the ante-natal clients with no one to correct them. Sometimes qualified midwives, feel like now it's the time to take holidays(L4)

midwives ignore the students and just use them as a pair of hands just use them to help them but not concerned with the teaching (L1)

Educators realised that midwives had different motives regarding students' supervision such as monetary gains, while others considered student supervision as part of their responsibility and strived to offer support in the midst of the existing shortages at the health facility.

there are other midwives that expect to get money they think that each time they help a student they are supposed to be paid for that is an extra job so it depends on where you are and who you meet at that clinical area. Whilst some midwives are good with the students they take a leadership role and lead the students despite the shortages but whenever they have some time, they would want to do everything with the students (L6)

Therefore, educators suggested reduction of student enrolment and that there be an identified person at the clinical placement for effective supervision of students.

with preceptors at the clinical sites, students would have the support where they are located the thing that they don't have now which is a very big challenge to them in terms of learning because they are not receiving the required support(L3)

reduce the number of students we take for the midwifery programme if I've got 20 students to teach, I would demonstrate to each student with more number days of contact then I can see that the learning is taking place, and the student is getting better

day by day (L2)

4.1.7 Student's clinical assessment

During clinical practicum, students have assessments at the end of the allocation. For labour and delivery, a midwife observed the student as he/she took care of the mother. Educators left the whole assessment to the midwife.

> *assessments are done once at the end of every allocation they, (students) are assessed. the clinical evaluation is also done the last week this is the summative and mostly it is the qualified midwives who do it. an assessment of a labouring mother assisted birth they do conduct that in our absence we totally depend on the midwives working in the labour ward (L1)*

Educators acknowledged that there is dishonesty in students' assessment, and midwives tend to inflate grades unlike educators, and in some cases, midwives allocate high grades to learners based on relationships and not performance.

> *you find that if you don't know the student it's very difficult to collaborate and give a proper grade to the student in such situations you just give fake grades (L4)*

> *it happens that at a certain facility all the students come with a very good grade depending on who was grading the student because some are former graduates and they are in good terms with the student. When students are assessed by lecturers, they are heavily penalized compared to when they are assessed by the ward staff that's the clinical evaluation (L1)*

4.1.8 Personal relationships

One participant was aware that poor relationships between educators and midwives impacts negatively on students' clinical learning. In cases where a midwife had poor relationship with an educator, the learners would not be offered support.

> *the relationship between the clinical staff and the teaching staff is key to the students learning because sometimes students suffer because of the bad relationship that exists within the school and the clinical area (L6)*

4.1.9 Lack of resources

Educators acknowledge gross lack of resources, such as time, human resource which leads to heavy workload, equipment, finances, transport, and poor infrastructure. Educators perceive that all these compromise students' learning.

> *the midwifery staff establishment at KCN has been the same since 1996 if they said 15 lecturers were required for UCM in 1996 we are here in 2019 the establishment is still 15 when we have several midwifery programmes there is no correlation (L6)*

Educators acknowledged that lack of human resource leads to heavy workload because the same midwife has to provide care and give support to learners. Similarly, KCN has several midwifery programmes and the same educators do classroom and clinical teaching in all those programmes.

> *we have the UCM and post basic midwifery programmes, the same lecturer is involved in theory, must go to the clinical area, formulate examinations and attend important meetings to related to regulation of midwifery programme (L4)*

> *there are 20 students at a facility, divided in departments at the hospital some are in the ante-natal clinic others are in labour ward others are doing community midwifery in the community in a single day that I've been given am supposed to follow all the students in all these 4 departments just in a day (L2).*

Not only is there paucity of human resource but also equipment for classroom learning and also at health facilities. There is also unequal distribution of basic resources in health facilities which impacts negatively on students' learning.

> *you can have a very big class with a lot of students and the lecturer is there in front and it's difficult to reach everyone because the voice you need maybe a microphone like the projector and you just have one screen beaming at one angle (L5)*

> *in Dedza they had protocols on active management of third stage of labour and students learnt whilst Mchinji hospital didn't have and students were surprised when I talked to them about the it so facilities are different. in Dedza at one time they had cord clamps in Mitundu they didn't have, and students came out of that place without knowing the cord clamp and when you were talking to them, they were lost. Mchinji and Kasungu who even have pregnancy test kits at the antenatal clinic. Students were exposed to that equipment even for checking of malaria (L1)*

In some instances, learners complete their clinical practice without getting in contact with professional midwives who are generally in decision making positions of which they were being prepared for.

> *there is a difference between a labour ward that is being manned by a professional midwife in some hospitals, students complete the allocation without working with a professional midwife only the lower category (L1)*

Educators bemoaned the clinical skills laboratory regarding its size being too small for the large enrolment, and poor infrastructure of some health facility where learners were allocated for their clinical practice.

> *the clinical skills laboratory is very small that it cannot accommodate many students (L4)*

> *in some hospitals even, the infrastructure itself not conducive to the provision of care and even for the students (L5)*

Participants acknowledge that financial and transport challenges which compromises teaching and learning because sometimes scheduled supervisory visits to far away health facilities are cancelled due to lack of transport.

> *financial economic issues that the university is facing so the college decided that the students should be supervised once in 4 weeks because of the economic issues at the university. Sometimes when you plan to go out to supervise students you find that there is no transport it means the students miss out the opportunity of learning (L3)*

One educator observed that there is a discrepancy between the timeframe indicated in the curriculum document for the implementation of the programme and the midwifery academic calendar. Similarly, the timeframe for the programme is contrary from the ICM recommendations.

> *the amount of time that is allocated to midwifery programme in the curriculum and looking at the amount of time that is given on the academic calendar for midwifery there is a big discrepancy I'd say we are given maybe a quarter of what is in the curriculum (L2)*

> *by international standards midwifery alone requires not less than 18 months and we squeeze it in one year and we cannot expect much perfection from this limited time (L6)*

Similarly, educators perceive that time allocated for skills practice at the skills laboratory, clinical practice at the different placements, likewise time allocated for the assessment of students at these placements is inadequate.

> *the time given for labour ward and ante-natal clinic is 4 weeks the same as at postnatal. we go and have contact with students we teach them for few hours and leave them to practice but I still feel they don't have adequate time, the clinical practicum time is not enough(L5)*

> *time allocated on the timetable for students to use the clinical skills lab is very limited (L6)*

4.1.10 Educators' challenges and needs

Some educators acknowledged that they have never been supported in their work regarding supervision of students during clinical practice, and since she lacks job satisfaction

> *I don't remember my head of department or a colleague sitting in my class to see me teaching. there are no guidelines as to how lecturers should conduct themselves regarding supervision of students at the clinical area(L1)*

> *I don't feel satisfied to say I've achieved what I wanted to achieve today or I've taught the students (L2)*

Educators acknowledged that they have needs and challenges regarding both classroom and clinical teaching. Some need support with mostly the use of interactive teaching approaches, teaching large group, clinical teaching especially with a large group of learners. Otherwise, they were using approaches that were used by their educators.

> *I would want to be oriented on is how to do clinical teaching to a larger group of students both in the skills lab as well as in the clinical area (L2)*

> *how to handle many students in classroom and clinical area because it becomes a challenge (L3)*

> *I want some knowledge and skill in clinical teaching you just remember what your lecturer was doing on you and then you just follow the same (L4)*

One participant suggested that faculty members need feedback from students, hence, there was need to devise means of getting feedback from learners.

> *there should be a mechanism of getting feedback from the students (L1)*

4.1.11 Comparisons

Participants recognised several differences in the teaching and learning of midwifery between KCN and Mzuzu, and their own learning. One participant compared KCN and Mzuzu University regarding students' clinical practicum.

> *as for those from Mzuzu I am not favouring them but they were in the same ward and you could see their colleagues working doing things like qualified staff yet the KCN students were in the treatment room, I said it starts like this(L1)*

Educators reflected on their own learning.

> *we had the senior midwives who knew that supervision is one of their roles.*
> *for us, we were creating our own time to practice since we had to fulfil some requirements because the more you practice the more you gain the skill (L1)*

4.2 Senior midwives

4.2 1 Introduction

In this section I present findings from senior midwives who worked at Ethel Mutharika maternity unit at Kamuzu Central Hospital. They had worked alongside KCN graduates at Bwaila and Ethel Mutharika maternity units and they were also involved in clinical teaching of midwifery at KCN. The findings represent their perceptions of the teaching practices utilised in the preparation of students for midwifery practice, expectations of senior midwives regarding the new graduates' performance, how new graduates perform and conduct themselves as qualified midwives, and recommendations made by senior midwives.

4.2.2 Nature of programme

Participants acknowledged that the combination of nursing and midwifery has negative impact on students' learning. They do not have adequate time for each programme.

> *so, maybe the combination it's not giving them time to concentrate on one area at a time. I think maybe we were better the way I look at it, now it's like they have a lot of work at the same time (M4).*

4.2.3 Outcomes

All senior midwives in this study acknowledged that they expected KCN graduates to perform to expected levels of standards because they were prepared at degree level.

> *Usually, we expect them to perform according to standards and you know they are highly educated, they have their degrees, and we expect them to perform even better than the midwives of lower category (M2).*

However, participants observed that the performance of some graduates was below standards, and they also observed that some graduates' performance was acceptable.

> *I can say not all are bad, some are very good extremely good I can give an example that you don't need to tell them what to do let's say when they are in labour and delivery ward or antenatal or post-natal they know what to do (M3).*

Participants observed that some graduates had problems with performing some skills in the labour room, such as interpretation of the labour chart, resuscitation of new born babies, assessment of cervical dilatation. However, with time, graduates' performance improved.

> *Mostly labour ward the issues of resuscitation of the new-born interpreting the labour chart and making decisions, that's where most of them find problems (M6).*

> *she would say that you know am not sure whether this is cervix is 2 or 3 centimetres dilated, she would say I can't differentiate between 2 cm and 3 cm so she could send women into labour ward who are maybe 2 cm but she could write 5 cm so that was her main problem to differentiate between the 2cm and the 3cm. But now we just observe that this time she can perform very well (M2).*

Participants observed that not only did graduates have problems with performing skills but also regarding patient care.

> *you find that this midwife is just seated and there is a patient who is in pain maybe trying to sleep on the floor, but this midwife is just seated and yet the delivery slots are empty (M3*).

Some participants perceived that the graduates were forced into the programme, they are not interested in midwifery, but decided to enrol into the programme for easy and quick employment and this is reflected in their behaviour.

> *I think some of these people were just forced to go into nursing and midwifery they didn't want the profession (M1).*

> *people are now going to KCN because they feel like if I go to Bunda college or to this other college where my interest is, I will not find a job so they just go to KCN because they know they will get employment easily but deep down there, nursing is not in them when they graduate, they leave (M5).*

One participant in this study suggested that candidates should not be forced into the profession, because a person's passion for the profession is crucial.

> *I think those people that are doing midwifery should have the desire to do midwifery not forcing them. Because if you force them, they will just say anyway I was employed to do this, without passion. You should take those people who have passion to do the midwifery because midwifery care is not just about assisting the women to deliver(M1).*

4.2.4 Instruction process

One senior midwife acknowledged that there is theory practice gap due to lack of equipment at the health facilities, where they are forced to improvise, which impacts negatively on their learning.

> *Students are told that when you are dressing you do abcd, but when they come here, they see a lot of improvising so maybe that's why KCN students get lost because what they are taught and what they find in hospitals the setting is different and for them to adjust to what is on the ground it's a problem (M6).*

4.2.5 Teaching and learning strategies

Senior midwives acknowledged that midwives were involved in the clinical teaching on the bedside and they demonstrated skills to students and encouraged them to stick to acceptable standards of performance.

> *I am involved in their practical work there are some new things that are in practice which they have not learned in class and when they come to the clinical, they meet such things so sometimes I have some sessions in the ward to demonstrate to them (M4).*

> *when they are not doing according to the standards then I teach them, you are supposed to do abcd yeah and we also discuss issues on how to manage certain conditions (M3).*

Participants observed that there are good and bad role models among the midwives and learners copied the bad behaviours which compromises students learning.

> *I would say 50% are good role models, these are students, they may learn bad behaviours depending on who so ever is on duty with them on that day (M1).*

4.2.6 Students' clinical supervision

Respondents observed that midwives did not support students adequately because of high workload, due to inadequate human resource, poor attitude of students, and midwives' lack of commitment.

> *the problem is due to high work load the midwives would rather do what they are supposed to do on that day and report than working with the students(M6).*

> *sometimes again the attitude of the students you find that some are not interested to learn some. So, midwives are not interested to teach them because they feel that the students are not eager to learn (M5).*

> *we have some midwives who don't even bother whether there are students, they don't have time to teach them it's only a few who have that heart to teach and supervise the students (M2).*

Participants observed that even the educators are not committed to their supervisory responsibility, supervision of students was mostly left to the miwives.

> *I have observed that lecturers don't come more often, most of the times the students are with the midwives from the departments, so I think the supervision from the lecturers' part is also a deficit (M2).*

Based on this, participants observed that midwives did not offer support to learners but rather viewed them as an extra pair of hands during the clinical practicum.

> *Some midwives are just interested to work with students just as an extra pair of hands not actually teaching them (M5).*

During the clinical practicum, participants realised that KCN has too many students and few educators which compromised clinical learning, hence, recommended reduction of the enrolment.

> *KCN has got a lot of students and few lecturers so I don't think it matches with the numbers (M3)*

> *sometimes I got 10 students in one allocation. Maybe if they (KCN) can reduce the intake and have numbers that they can manage for example, say 5*

midwives for practical at Ethel Mutharika they should be five who can be well supervised well monitored and come out with shining stars (M5).

According to the participants in this study, another challenge regarding student supervision was lack of clinical skills among educators. They acknowledged that some educators could not perform vacuum extraction.

Lecturers themselves some of them do not even have the skills they will come I will give you an example the lecturer came and then the student was asking how can I do this? it was in the labour ward and it was vacuum extraction you could see that the lecturer was not comfortable, and she just run away from the question and called one of the midwives to come and assist the student(M6).

4.2.7 Students' clinical assessments

Participants observed some practices in students' clinical assessments; not all midwives are involved in students' clinical assessments. Sometimes, midwives are asked to assess students despite having minimal interaction with the students. Therefore, the participants perceive that the assessments are subjective.

after holiday you come, and you are with that student maybe for 3-4 days or you find them maybe in the last week of the placement and you are told to assess that student you consult these other colleagues who are there you find that everybody is giving excuses you are 'forced' to do that but you have been with that student just for a week how can someone be evaluated within a week, but you are just doing for the sake of doing it. Sometimes it is fatigue I have 10 or more I will just give them grades (M5).

I just gave them the grades of course we had to discuss, no this student is like abcd so it was very difficult, but I gave grades yeah, high scores because I didn't know them (M3).

Participants made recommended that midwives and educators should do the assessment together to get a true reflection of students' performance.

I recommend that when we (midwives) are doing clinical assessments we should be doing together with the lecturers I don't know how you (lecturers) are doing them but if you are doing grading (assessment) of a student you should be doing maybe with the manager or the matron who has been with them because that will give a very good reflection of how the student was performing (M3).

4.2.8 Lack of resources

Respondents acknowledged that there was gross lack of resources in the hospitals which leads to theory practice gap, and inadequate time for students' practice in the labour room. Additionally, some health facilities are in poor condition for teaching and learning.

> *I think some institutions lack resources for them to perform according to what they have learnt in class (M2).*

> *I don't know if you give them adequate time to do the hands on because when we have received the KCN students, they stay in our labour and delivery for 4 weeks (M1).*

> *the environment of some facilities is not conducive at all for learning yeah you really needed to have somebody strong to keep the labour and delivery unit to be conducive for the patients and even for the students the labour and delivery are very cold and the water supply is on and off (M1).*

4.2.9 Personal relationships

Regarding personal relationships, participants in this study observed that KCN students overrate themselves, look down on NMTs because they are not highly qualified.

> *When the KCN graduates come and see those junior nurses (NMTs) who are already experienced in the wards, they underrate them and take themselves as if they know everything, yet much as they have a BSc degree experience still matters (M4)..*

> *the way they act, as I said regarding night shifts, they say "how can we be on night shifts when we are the ones in charge? they have the mentality that they are the bosses, so the boss is the supervisor (M6).*

4.2.10 Educator needs

One midwife perceives that since midwives give feedback to students, they should also get feedback from students to improve their performance in assessment.

> *This is continuous if I am involved in the assessment, I should also know to say okay we assessed the student how did she feel. I should also be assessed as an assessor that's the conclusion. Because I might also have my problems of which I need to be corrected (M5)*

4.2.11 Comparisons

Midwives perceived that Mzuzu students were hard working, fast learners, and humble unlike KCN students.

> *some say KCN students are lazy they don't want to learn, they are pompous Most of the Mzuzu University students they are active and they easily catch up they are very eager to learn (M2).*
>
> *Most of them from Mzuzu, are humble (M5)*

After the completion of the programme, midwives observed that Mzuzu University graduates perform better than KCN students.

> *Mzuzu University if you give them the ward, they will manage everything and there is a balance of the administrative work and clinical work, so to me I feel they are fully equipped with knowledge, skills for managing they are well prepared (M6).*

Similarly, midwives observed differences between their behaviour when they were students and that of current KCN students.

> *I can see the difference, then we were well behaved people, we would listen and we would learn from each and everybody that we have found in the labour and delivery unit. But the ones we see, most of them now, they are busy with these electronic gadgets (M1).*

One midwife compared KCN students from different cohorts, those in the generic programme and those in the University certificate of midwifery programme-qualified nurses who were going through the midwifery programme.

> *the group that does nursing and midwifery together, has a challenge. We saw some maturity in students who went for their nursing first and came back to do their midwifery (M1).*

One midwife acknowledged that graduates from the two universities have the same behaviours.

> *I cannot say that Mzuzu is exceptionally well because there are also others who are just like those who have graduated from KCN who are not able to do the needful things. But to be frank it's just like a breed*

which we are coming out with time which I see it's a challenge both Mzuzu and KCN (M3).

Midwives suggested that after graduation, new graduates should be supervised by qualified midwives.

after they are employed, they shouldn't just be left and say uhh they are midwives, no, they still need supervision; they should be supervised (M5).

One respondent observed that high attrition among KCN graduates unlike among Mzuzu graduates.

Mzuzu, I can say most of them they are still here like the other one is in neonatal nursery you see them. But you find that the ones from KCN who started with these ones, all of them are nowhere, they are not interested with bedside care some are even outside Malawi, some to non-governmental organisations within Malawi (M5

4.3 KCN graduates

4.3.1 Introduction

In this section, I present perceptions of new KCN graduates regarding their work experience in the first year of practice, the teaching, learning practices at KCN, comparison with Mzuzu university and recommendations they perceive can improve students' learning experience at KCN will be presented.

4.3.2 Outcomes

After graduating, graduates found it difficult to work on their own, they had challenges with decision making, and taking responsibilities for the first time.

> *the first days it was hard from being a student whereby you were depending on somebody and then we had to be responsible for ourselves, so for the first day it was really hard (GM2)*

> *you see yourself making decisions without anybody's help the very same things that we did when we were under somebody's supervision, we are now making decisions so for me it has been challenging (GM5)*

Graduates acknowledged that they benefitted from the teamwork that was promoted among midwives in the ward, but sometimes midwives could not help because of the heavy workload.

> *We get support through teamwork because midwifery is all about teamwork (GM5)*

> *some midwives in the ward have less qualification than us but they have more experience than us who are just coming from college obviously, we go and consult them especially when there is a case, we consult in such situations and they help us (GM4)*

> *on the part of responsibility most of the times you decide on your own while you were depending on someone you find that they are busy when you call for help, they cannot come because they are also busy (GM3)*

Graduates realised that they experienced change in their performance in some midwifery skills, within the first year of practice as qualified midwives.

resuscitation of a new-born baby, manual removal of a, retained placenta, management of PPH, vacuum extraction, severe pre-eclampsia (GM1, GM2, GM3, GM4, GM5)

Nevertheless, one graduate admitted having problems with vacuum-extraction at the time of the study. Consequently, graduates perceived that they were not adequately prepared for practice.

I am not comfortable with vacuum extraction (GM1)

after some weeks of classroom learning you go to the clinical area with a little knowledge and you end up feeling like you did not learn enough you don't even know where to start from (GM4)

Graduates attributed their poor performance to heavy workload and having to practice differently from what they learnt in class.

during the whole night I find myself helping more than 10 patients during the night, it's tiresome, so sometimes I don't give the required care to the patient just because of situations like overcrowding and a few midwives on duty (GM2)

in class we learnt that we are supposed to give the antibiotics pain killers before the procedure but the first manual removal of placenta that I did I was told to give the antibiotics after the removal of the placenta and the antibiotics were not the same antibiotics that I learnt in class so sometimes the different hospitals have different protocols on management of the problems (GM2)

The graduates expressed being satisfied with the midwifery profession

being a midwife is great just like she said when you help somebody and at the end of the day you feel great inside (GM5, GM3, GM4)

4.3 3 Instruction process

Participants acknowledged that the large enrolment impacted negatively on their learning during classroom sessions, and in achievement of pre-registration requirements. However, hospital protocols of some health facilities also hindered students from accomplishing the NMCM minimum pre-registration requirements.

even in class it's easier when there are a few students to understand things than when there are a lot of students, in class we missed some things (GM2, GM4)

it's a challenge for all students to have 6 vacuum extractions deliveries in the logbooks, vacuum deliveries are scarce in the wards it's hard to find them because we have almost 10 students in the ward maybe and every student is expected to have 6 vacuum extraction deliveries (GM2)

some hospitals discourage vacuum extraction for example I was in Salima I did not use the vacuum extractor I completed that allocation without a single vacuum extraction delivery until I went to Bwaila (GM 4)

Graduates suggested that the number of vacuum extractions be reduced because of the scarcity of cases and recommended an addition of ultrasound scanning as another pre-registration requirement.

students sometimes end up not accomplishing some competences because of where they are allocated so the number of vacuum extraction deliveries should be reduced to 2 or 3(GM2)

ultrasound scanning should be included in the clinical module as one of the competencies (GM1)

4.3. 4 Teaching and learning strategies

Participants disapproved the use of group case studies for learning because they observed that not every student was actively involved.

students are doing case studies in groups I think if students do it individually they would go search every information on their own but this group thing you end up having other people in the groups who are not contributing. They benefit on paper not in the head (GM5)

4.3.5 Supervision of students' clinical learning

Graduates were aware of the high student educator ratio and suggested that the educator student ratio should be reduced.

during clinical practicum students should be split into smaller groups rather than maybe 12 or 10 students per supervisor I feel like it's much wok for supervisors to teach each one (GM2)

4.3.6 Lack of resources

Graduates acknowledged gross lack of resources at the health facilities and stated that this had a negative impact on them regarding midwifery as a profession.

shortage of resources and human resource is so much because of that sometimes it makes us feel like this profession somehow, it's not a good one (GM2)

4.3.7 Comparisons

Graduates observed some differences between them and their counterparts from Mzuzu University in terms of learning, support during clinical learning, behaviour during clinical practice, commitment to work.

Mzuzu students are few, so it is very easy for lecturers to follow them up on the wards, while us, we are many and some who absent themselves, cannot be recognised and they miss some things and they don't learn (GM4)

I have worked with them but just like she said they are hardworking and more knowledgeable sometimes you think, if you learnt something better at college, you don't differentiate what is happening in the ward, you just copy if it is common to everyone (GM4)

One participant observed negative behaviour similar to that of KCN students, from Mzuzu University students.

when I was working with them as a student to be honest, they were also running away from the wards (GM2)

4.4 Mzuzu University graduates

4.4.1 Introduction

Perceptions of Mzuzu University graduates who underwent a similar programme as the KCN graduates are presented in this section. Senior midwives perceived that these graduates perform better than KCN graduates.

4.4.2 Nature of programme

Regarding the programme, participants had different reasons for enrolling into the programme. Some participants were not interested in midwifery, they enrolled into the programme because they were influenced by other people, but one said the programme was her first choice.

> *I wanted to be a teacher what made me to join it was my sister she was my role model she was the one who motivated me I admired the white uniform (MZ4)*

> *having gone to allocations I saw some male nurses so I said I think the profession needs male nurses as well so, I had to shun the idea of jumping into other courses and continue with nursing up until I finished, am enjoying the profession it is good (MZ3*)

> *nursing was something which I wanted to do, I was selected to go and study at Bunda college of agriculture I was pursuing Bachelor of Science in environmental science I left Bunda college of Agriculture for Mzuzu university (MZ2)*

4.4.3 Programme implementation

Graduates stipulated how their learning was sequenced and the duration of classroom sessions, clinical rotation during clinical practice, and the educator student ratio during clinical practice.

> *we started with theory for 6 weeks (MZ2)*

> *We had classes from 7:45, or 8am we would knock off at 5:00 pm (MZ4)*

> *we had theory in class and in the afternoon skills practice at the skills laboratory (MZ3)*

> *in my group we were 8 of us the other ones were doing labour ward and then the others were doing low risk ante-natal post-natal ward, we were divided 4 in labour ward, 2 antenatal clinic and 2 were at post-natal ward, later*

we had to switch. We spent 6 weeks in labour ward and 6 weeks in postnatal (MZ1)

we spent 6 weeks at the antenatal clinic (MZ3)

4.4.4 Outcomes

Graduates acknowledged that not all students managed to achieve the NMCM minimum pre-registration requirements because of restrictive health facility policies.

some of us came out having done the required number of the vacuum extractions some of us also did not manage the ones who had shortages who did not manage to do all the 6 vacuum extractions they were sent back to the ward I remember there were several of them number (MZ 2)

some other clinical areas they are not doing vacuum extractions (MZ3)

Regarding some skills like neonatal resuscitation, students were dishonest, and recorded neonatal resuscitation done by qualified midwives in their log books claiming that they had done it.

for neonatal resuscitation we had qualified nurses beside us they were the ones resuscitating the baby and a student was assisting, then we would log it in the logbook without really doing the actual resuscitation (MZ4)

Graduates perceived that they were adequately prepared for practice, however, despite this they had challenges with heavy workload, paucity of resources, lack of confidence, and fear of having experiencing death of a neonate or the mother.

there are more challenges than first we might have imagined because the workload itself and with the resources, midwife to patient ratio is just too big (MZ3)

I would say of working in the labour ward is that you are always afraid of neonatal death a maternal death. not confident because working in the labour ward you always want assurance from people that whatever you are doing is correct or not so that you adjust (MZ2)

Despite these challenges, graduates found it interesting working as a qualified midwife, and one participant stated the roles he/she had taken on after graduation.

working as a qualified midwife is so interesting but sometimes it is so tiresome with the workload. Since I qualified, I have worked as a team leader, coordinating a training and the other fellow midwives, giving orders to the support staff (MZ3)

my role in the post-natal ward has been to provide direct patient care that is bed side care as well as managing junior staff, I must manage them I have to guide them, and I supervise the 4th year students from KCN (MZ1)

Regarding their work as midwives, graduates acknowledged that they could conduct deliveries, monitoring postnatal mothers and their neonates, and conducting breech deliveries.

I have no problems assisting delivering mothers (MZ2)

at the postnatal ward monitoring the mother and the baby l can do on my own (MZ4)

I can do breech deliveries, as for the vacuum extraction I can even supervise students (MZ3)

Graduates acknowledged that despite having conducted 6 vacuum extraction pre-registration they had challenges with vacuum extraction deliveries. Similarly, they had challenges with management of women with antepartum haemorrhage.

I did 6 vacuum extractions, but I cannot confidently do vacuum extraction I always need support from some people to put the cup on the correct position and the right amount of pressure some other conditions for example ante-partum haemorrhage we did part of that in class, but it was more of theory I don't remember doing a practical session long enough for me to be convinced to do it in a clinical set up now I wish I was given a lot of time to learn how to manage them in the clinical and in the skills lab especially in the clinical (MZ2)

When graduates had challenged the consulted the older midwives, even those who were less qualified, for assistance. They realised that though less qualified, they had a lot of experience.

if I failed to give the much-needed care, I also consult with

the fellow midwives we work with them (midwives of lower qualification) without problems we learn from them just to ignore them is not good but then we listen to them we learn a lot of things from them they also learn some things from us so it's like teamwork (MZ3)

Graduates acknowledge that they experienced theory practice gap during their practice.

during school time we used to learn other things and then coming here (maternity unit) we see that policies have changed it's not entirely done I'd say the issue of induction of labour (MZ3)

here most of the times we do shortcuts while at school we were taught to follow the protocols (MZ4)

Based on this, participants made a recommendation on what educators should teach.

they(lecturers) should have emphasised more on the maternal condition like more of real cases like the eclampsia the APH because those are the conditions, we face now (MZ4)

4.4.5 Teaching and learning strategies

Participants acknowledged that the lecture was mostly used by their educators in the teaching, but they were also supported by the educators through demonstration of skills. Afterwards, they had time to practice skills in the afternoon.

they (lecturers) used lectures mostly lecturing with demonstrations, then there were other times where we would utilise the skills lab so if you wanted to practice there was always time for the skills lab (MZ1)

during the classroom session a lecturer would come and demonstrate and then during the afternoon time we would go to the skills lab to practice and mostly the lecturer would be around in case we missed a point, or we did not understand (MZ2)

we spent 2 hours at the skills lab practicing in a small group we had 2 days per week for skills laboratory to practice (MZ3)

Regarding skill practice, participants acknowledged that they had opportunity to practice skills at the skills laboratory where they worked in small groups.

> *every day if you make an appointment, you would go to the skills laboratory at your own time sometimes we had to do it on us ourselves with a friend or maybe four because you couldn't go alone one would be the patient, and someone would be the nurse things like that (MZ1)*

> *opens from 7:30am to 4:30pm you must book to use it so the lab assistant would let you know when the lab was free we were organised in small groups we were teaching ourselves in a group (MZ4)*

4.4.6 Student supervision

Participants acknowledged that they had two educators allocated to each placement. The educators demonstrated the skills, gave support, and feedback during clinical practice.

> *we had the lecturer who demonstrated on the real mother (MZ3*)

> *a midwifery lecturer would come and observe us and teach us and give us feedback she would come and gather us, and we would do a practice the skill again in her presence (MZ2)*

Regarding supervisory visits, participants acknowledged that educators were present on the first day of the clinical placement, and in the six week long clinical allocation, educators supervised students three times, and they were with students for the whole day.

> *we had our lecturers the first week it was for orientation (MZ2)*

> *in 6 weeks, they would come maybe like 3 times because the first week was for teaching same with the second visit the last week last visit was for assessments (MZ4)*

> *they would arrive on a Monday and then they would stay with us for the whole of Tuesday and then they would start off for another place (MZ1)*

During clinical practice, participants stated that they had learning materials which helped them in skill learning.

> *the skills lab had to give us those mannequins especially the pelvis we used to travel with the female pelvis, and they used to arrange books with the library and the departmental library to help us (MZ1)*

4.4.7 Students' clinical assessment

Participants had the opportunity to request for an assessment when they perceived they were ready to be assessed. Students were assessed by educators as in real world as they managed women in all stages of labour and delivery.

> *and we were pretty much sure that this is what she taught us in class, and I think I am confident I call her for an assessment (MZ2)*

> *we identified a mother who was in her first stage of labour, admitted her did the head-to-toe examination, managed the 1st, 2nd, 3rd and 4th stages in the presence of the lecturer, even at the antenatal clinic and post-natal we examined the mother and baby in the presence of the lecturers (MZ4)*

Participants stated that sometimes assessments were done in the absence of their educators.

> *some assessments for instance breech delivery, twin delivery and vacuum extraction we couldn't do in the presence of the lecturers most of the times we found the case while the lecturer is away so, we were doing the deliveries with the in charges who were there with us (MZ3)*

At the completion of the placement, students wrote a report which was graded

> *after finishing the whole clinical experience of labour and delivery used to write a report which was gradable it was about the clinical experience itself, the challenges that we met, the strengths your strengths maybe you have met such scenario and how did you manage the condition you write everything that you did on that patient it was an honest report (MZ3)*

4.4.8 Personal relationships

During practicum, participants experienced unfriendliness from educators which compromised their learning.

> *some of the lecturers were scary out of the 4 only 2 were friendly, it's always frustrating and they would shout at you sometimes in front of your fellow students, sometimes in the presence of patients, it was demeaning, and we couldn't perform to the fullest potential because of fear.*
> *at the end of the day, you would be afraid of the lecturer and maybe you are seriously falling behind and for you to come boldly say that madam I need you to highlight on such an area one would get intimidated (MZ2)*

> *some lecturers always had negative attitudes towards students they were always negative during an assessment they could tell you what was wrong in front of the mother or the client so some of them were not encouraging us like to go on but some of them were so friendly and welcoming (MZ4)*

4.4.9 Lack of resources

Participants bemoaned the paucity of resources at the health facilities as it compromised the care.

> *sometimes there are no medications and as I am speaking now, we don't have the right medications for our patients and the patients are suffering you find that it is hard to give quality total midwifery care because you find that there are no resource (MZ1)*

> *I think because of the human resource challenge even the equipment as well that makes someone to do things in shortcuts (MZ4)*

4.5 KCN students

4.5.1 Introduction

Perceptions of year four KCN students regarding the teaching and learning of midwifery at KCN are presented in this section. Focus group discussions were conducted at Nkhotakota (KK) Salima (SA) and Ethel Mutharika (EM) maternity settings where students were undergoing their final clinical practice of the programme. Students presented their perceptions on their motives for enrolling into the programme, classroom and clinical teaching and learning, clinical assessments and they compared themselves with their counterparts from Mzuzu university and made suggestions for the improvement of the learning process.

4.5.2 Nature of programme

Students disapproved the combination of nursing and midwifery and made suggestions as to how it should be implemented.

> *during the 3rd or 4th year it should just be midwifery they should not include nursing and research modules these modules should go to first and 2nd year because midwifery is very critical, and we do not have much time to grasp whatever the content (EM)*

Most of the students who enrolled into the nursing and midwifery programme did not want the profession they enrolled into the programme, nursing was not their first choice. For some, they had interest in the profession.

> *for me to apply at KCN to study nursing and midwifery it was because my father convinced me that nursing and midwifery is good for a woman like you (FGD, EM, KK, SA)*

> *the degree is for nursing and midwifery, it is marketable because of the specialty that one gets at KCN (FDG, SA, EM, KK)*

> *I chose nursing just because ever since I was young I had the passion to do nursing so I decided to do it because it was an instinct in me I wanted to be a nurse and I used to care for so many I had a chance to save so many lives about 5 so I just wanted to be a professional. Nursing was my first choice (FGD, EM, SA)*

4.5.3 Instruction process

Students observed that the content they learnt in class was a lot, and they also disapproved the learning of all skills in one day. They suggested some changes to this, including extension of the duration of the programme from four to five years.

> *on classroom teaching we are given too much content in a very short period and we are overwhelmed by it (EM, SA, KK)*

> *Lecturers should divide the time which has been allocated for classes into half for theory and half for demonstration. there should be a relationship between the theory part and the practical part like if you are to say ante-natal and you are saying initial assessment of the woman that initial assessment should be done with a lab session what is required to be done, do it on the woman or in the skills lab then you go to another topic. In so doing we can internalise it so that we wouldn't find it difficult when we get to the clinical placements. another suggestion is that maybe the classes should be ending by 3pm so that the remaining 2hrs we can be practicing in the skills lab (FGD, EM)*

> *according to the timetable you find that the week for check offs is at the end and you practice a skill that you learnt during the first week after 5 weeks, we forget and it becomes hard to practice (FGD, SA, EM)*

4.5.4 Outcomes

Students were aware that a lot was expected of them upon successful completion of the midwifery programme.

> *it equips us to become good managers in the clinical areas that we are working in and it requires us to be the critical thinkers, decision making and to provide respectful care (FGD, SA, KK)*

> *we are expected to be competent in managing women in labour both low risk and high risk, the neonate and post-natal and anti-natal matters, we need to have skills in these areas (FGD, KK)*

Students acknowledged the challenges they had with fulfilling vacuum extraction council requirements and this led them to be dishonest about completion of the NMCM pre-registration requirements. And they made suggestions regarding pre-registration requirements.

> *other hospitals they have ruled out having vacuum extraction based on the research others have done they say vacuum extractions can cause brain damage to the babies, in some hospitals, midwives are afraid because*

previously they were sued after causing injury to a baby so midwives no longer conduct vacuum extraction for fear of losing their licenses hence it is hard for us to have the required 6 vacuums extractions (EM, KK)

sometimes you find that students are logging in procedures which they have not conducted just for the sake of completing their requirements (KK)

the number of students we are too many because for example during that period when we were doing low risk, we were 10 and each one had to do a minimum of 40 deliveries, time was not enough, of course some people managed to finish but they had to find their own hours, those who did not reach the minimum numbers had to find their own time to conduct those deliveries after completion of the programme, the requirements should be updated vacuum extraction maybe can be done at school may be at the skills lab (SA, KK)

Students perceived that at the completion of the programme, they were not fully prepared for practice such that they needed to go through an internship programme.

we are half baked by the time the allocated time has ended we still lack some other skills, we should have an internship programme to fill in the gaps (EM, SA, KK)

Students acknowledged having experienced theory practice gap during clinical practice.

I have also observed that some of the information that we have been given during class it's outdated, so when we go to the clinical area, we meet updated information, so we find a gap there and we stay blank coz what is taught in class is outdated and what we are meeting it's a new thing so it's a challenge at times (FGD, KK, SA).

4.5.5 Teaching and learning strategies

Students acknowledged that the lecture was the dominant method utilised by educators during classroom teaching, they disapproved it because it made them inactive. During their own time some students practised peer learning.

they use the lecture method is dominant, and at times discussion, question and answer, but rarely we have discussions, some bring in videos some do demonstrations. It is not good because we also need to participate actively because when they just lecture, we get tired of listening besides we need to

develop in critical thinking, and some lecturers just read out the slides without explaining so students feel like it is better to sleep and read at their own time, it's not the best ides because it makes us lazy (FGD, EM, SA)

as for me just to raise the competence first week I usually get a partner when doing the procedures to be familiar and to evaluate me after that information I go back and see where I did not do well and make corrections. it's important because as we are graduating, we will be teachers to other students as well as fellow staff (FGD, EM, SA)

Participants bemoaned the large enrolment and the operation of the skills laboratory, they perceived it as a hinderance to individualised learning and skill practice respectively. Consequently, they suggest recruitment of new staff and extension of opening hours of the skills laboratory.

the class is too big because sometime after the lecturer has done a skill demonstration it's hard for everyone to do the return demonstrations just because we are too many and there is only one lecturer, sometimes in a group of 10, the lecturer just observes 2 students, so learning is compromised. KCN should recruit instructors or new lecturers (FGD, EM)

at least extend the opening hours of the skills lab to 9 pm during weekdays, and open it during the weekends for us to be practicing at our free time because during weekdays we are occupied, staff working in the skills lab should also be working during the weekends (EM)

Students perceived that the absence of male educators at KCN disadvantaged male students.

some good role models are there but the only problem which needs to be addressed is lack of male midwifery lecturers. We male students would like to have male lecturers to model us because we just see female lecturers in the midwifery department (SA)

Students acknowledged that educators and professional midwives (BCs holders) were unavailable during their clinical practicum, which compromised their learning.

when we go for the clinical practice, we don't have our lecturers we depend on the qualified staff than our lecturers because they just come once we go to the allocation, and we start practicing the lecturers in other schools they come during the first day when the students are in for the clinical practice but our lecturers most of the

time they come the 2nd week so the qualified nurses most of the times if you are asking them questions every now and then they are like where are your lecturers, they do not even pay us they must teach you so it becomes hard (FGD, EM)

Students recognised that in third year they had more contact with educators and learning took place than in fourth year. Therefore, students suggested that there should be preceptors at the health facilities.

during low risk the learning was just okay, during clinical practice at antenatal, the lecturer could visit us every two weeks, and we were also well prepared for the exams and assessments and even during labour ward in Kasungu we also learnt a lot from the lecturer coz she could also visit us every two weeks (KK)

during the high-risk clinical practicum, there isn't much learning because for some of us some may complete the high-risk allocation without any face to face contact with the lecturer on the ground (EM)

Similarly, students realised that being allocated at a health facility close to the college was advantageous because it meant that educators could easily get to the facility for clinical teaching.

lecturers who supervise at Bwaila hospital were there on the first week so we got everything and our competences we were able to achieve them just because they were frequently visiting us teaching us and in addition to that we also learnt whatever we didn't learn in class they were able to supplement. unlike someone who is in Ntcheu lecturers only go there once every 2 weeks so maybe the lecturer goes there on Tuesday and then the next time she may not go because there is no transport, so it is difficult for the lecturers to supervise students allocated at placements that are far away from the college (EM)

Participants observed that during supervisory visits educators did not teach therefore, they suggested that educators should be given feedback by students.

Most of the times when the lecturer came to visit at the ward, it's like the lecturer comes in just to criticise not to teach, let's say if there is something you are doing wrongly instead of correcting you they end up shouting like we are doing nothing, this makes the relationship to be sour and when we hear that the lecturer is coming, we start shivering knowing that we will be shouted at (FGD, KK)

there should be time during the programme to evaluate our lecturers it is only during OSCE that we are asked to evaluate the examiners of which some of them are our lecturers (KK)

Regarding their clinical learning, students realised that motivation of qualified staff was crucial for their learning at a clinical placement. They recognise that some midwives have positive impact on their learning while others impact their learning negatively.

clinical learning mostly depends on the staff that you meet at the hospital so if it happens that we come through a staff that is willing to help us we sometimes can achieve our objectives but if it happens that the staff that is there is not willing to teach us on some other things then we do not really benefit (FGD, KK)

we have midwives that love working with students and even when they are off duty you miss them but sometimes because of shortage of staff, they are not able to teach us, they don't have time they focus on what they were employed to do not on the students because they are not paid for teaching (FGD, EM, KK)

4.5 6 Students' clinical assessment

Regarding clinical assessments, at the end of the allocation, students stated that they were assessed by two educators, they had assessments at antenatal clinic and postnatal ward on real clients. Students perceived that these assessments were good.

assessments at antenatal and postnatal we are assessed individually the assessments are oral and practical for instance in the post-natal ward we were having a woman, a baby and there would be like two lecturers for the assessment the practical assessments they are not bad the criteria of the assessment are very good it's the same things that we do in the ward (EM, KK).

Students disapproved group assessments because some group members did not participate in the work

when doing a project there are some people that maybe dormant in the group and depending on others to be doing the assignment so it's like you are doing an assignment for someone who is just idle and they receive marks that they are not supposed to receive (SA)

Students realised that overall clinical assessments lack objectivity, and sometimes they were assessed by educators who had not observed them during clinical practicum. Participants made a recommendation regarding this.

> *when it comes to assessments we have not been objectively assessed, lecturers grade based on the past performance maybe they saw you at one-point practicing poorly and today when it's time for assessment they give you a poor grade based on what they saw last time not on how you are doing at that time no matter what you do, the grade is usually around 60 or 70 so it's like whatever you do you falls around 60 and 70 (SA, KK)*

> *in 3rd. year the lecturer who was teaching us in the clinical area was not the same lecturer who assessed us so that one is a big challenge because during the assessment we did exactly what the other lecturer taught us, but the other lecturer was not convinced with our performance, so, we suggest that the one teaching us in the clinical area should be the one to assess us (EM, KK)*

Students acknowledged that at the end of the clinical rotation, a midwife assessed them as an overall clinical evaluation. Participants perceive that this should be done by two educators.

> *during clinical evaluation there should be 2 people so that there should be an average grade but only one person is given the evaluation form to do the grading which maybe subjective to enmity 2 people should evaluate us to avoid biases (EM)*

Regarding labour ward assessment, students suggested that there should be a change.

> *there should be a lecturer or even the ward in charge that the ward in charge must be observing us on every stage of the case study the admission, 1st, 2nd, and 3rd stage management, should be conducted on the bedside not on the presentation because sometimes they encourage us to lie you find that you manage the patient without supervision so sometimes it encourages forging (EM)*

4.5. 7 Lack of resources

Participants were mostly concerned about inadequate time in the implementation of the programme. They observed that time for theory in classroom, skills practice, contact with educator during practicum, clinical practicum especially in labour and delivery room, was inadequate. Consequently, their learning was compromised.

> *the problem is we covered a lot of content in a short time they should give us much time to learn theory we should have at least 7 weeks sometimes you just study for you to write exams and you don't really understand the things. And the practical sessions that we do at school, they are just in a hurry, we don't have enough time to practice, mostly it is the lecturer doing the procedure and us observing and at the end we grab a little information about it so, it could be better if everybody was able to practice (FGD, EM, KK, SA)*

> *the four weeks for labour ward are not enough in terms of the number of skills that we are required to learn sometimes it becomes tough because some hospitals have seasonal deliveries it is difficult to find the case studies that you are looking for; we end up learning nothing because we focus on finding the forty-low risk deliveries to log in the books rather than learning (KK)*

Regarding paucity of equipment, students observed that their learning was compromised because they were forced to do short cuts.

> *most of the hospitals that we are allocated to have no resources which somehow encourages us to do shortcuts (EM)*

In view of the time constraints, students suggested that the programme be extended to five years.

> *we cover is too much content because the time is not enough the materials to be delivered is squeezed everything within a small period so if we are to have 5 years, we would have a lot of time to cover everything at a very good speed to learn and assimilate what is being taught (SA)*

4.5.8 Personal relationships

Participants acknowledged that they had poor relationships with qualified midwives who graduated from other colleges. Additionally, poor relationships between

educators and qualified midwives contributes to poor relationships between students and midwives. Hence, students suggest that educators should create good relationships with midwives.

> *in the labour ward staff from different schools either MZUNI or CHAM schools you find that maybe the one in charge of that ward is not from KCN they do not respond when you ask them questions and they say your school is the best didn't your lecturer tell you this maybe you have just forgotten yet you are asking for assistance they do not treat us well just because we are from a different school so mine is just a plea with those people the staff even if we are from different schools at least they should be corporative enough to help us, they say students from KCN are stubborn and selfish and NMTs, they think we underrate them (FGD, EM)*

> *when the lecturers come to the clinical placement they should treat the qualified staff well because when they go, we remain with them, and we suffer. They should work hand in hand with the midwives during supervision of students, there should be a close relationship so that in their absence, the midwives should take over the supervisory role to help us sharpen the skills (FGD, EM)*

4.5.9 Comparisons

Students compared themselves with their colleagues from Mzuzu as regards supervision during clinical practice, duration of clinical placements.

> *Mzuzu students are supervised frequently than us for example at the neonatal nursery we were never visited by our lecturer, but our colleagues they had the lecturer within the first week and they were visited maybe two or three times. Their lecturers stay at the placement for 3 days supervising students. they learn more from their lecturers (EM, KK, SA)*

> *they have almost 15 weeks just for low-risk practice that is antenatal, postnatal, and labour ward while our case we just go there for 12 weeks; 4 for antenatal, 4 for labour and delivery and 4 weeks for post-natal. they have more time to practice. During high risk they have 6 weeks of practice at the neonatal nursery while we have 4 so, it puts them at a higher advantage over us, and they act with confidence (EM, KK, SA)*

Regarding health facilities that are utilised for clinical practicum, students perceived that some facilities promote learning while other hinder learning, they attributed this to failure of educators to make enquiries about learning opportunities at the health facility.

some of the hospitals are good based on the objectives of the module and others no, sometimes they send us into those hospitals without enquiring what really is there because we know that the central hospitals are not good for low risk because they are referral and most of the time there are high risk cases, so, mostly instead of sending you to the districts where you can find more of the low-risk cases, they send you to central hospital where you can't achieve the objectives, we find that we are there just working not learning so the lecturers do not enquire much from the clinical team on what happens there (EM)

4.6 Findings from documents

4.6.1 Introduction

In this section, I present findings from the curriculum, timetables and clinical assessment forms used for the teaching and learning of the cohort from which the study participants were drawn.

4.6.2 Pre-requisites for entry into the programme

The curriculum document indicates candidates' entry requirements at KCN which include a Malawi School Certificate of Education (MSCE) with 6 credits (3-6 points) in English, Physical Science/General Science, Mathematics and Biology.

4.6.3Curriculum

The curriculum was designed in response to analysis of health care characterised by the high maternal and neonatal mortality and morbidity plus the high disease burden. Intended learning outcomes for the entire programme are indicated in the curriculum and all modules. Action verbs such as design, demonstrate, critique, analyses, create, were used for learning outcomes.

4.6.4 Classroom schedule

Classroom sessions commence at 7:30 am to 5:00 pm every day.

4.6.5 Nature of programme.

According to the findings, the midwifery programme is competency-based. The seven essential competencies were designed by the ICM as core competencies that are an expected outcome of midwifery pre-service education. However, Malawi added two to the ICM competencies based on the needs of the country. The competencies are presented in the table below the last two are specific to Malawi

Table 10: The NMCM adapted Essential midwifery competences

Competency area	Competency
Generic knowledge, skills and behaviours from the social sciences, public health and the health professions	Midwives have the requisite knowledge and skills from the social sciences, public health and ethics that form the basis of high quality, culturally relevant, appropriate care for women, new born and childbearing families.
Pre-pregnancy care and family planning methods	Midwives provide high quality, culturally sensitive health education and services to all in the community in order to promote healthy family life, planned pregnancies and positive parenting**.**
Care and counselling during pregnancy	Midwives provide high quality antenatal care to maximise the health status during pregnancy including early detection and treatment or referral of selected complications
Care during Labour and Delivery	Midwives provide high quality, culturally sensitive care during labour, conduct a clean and safe delivery, and handle selected emergency situations to maximise the health of women and their new born
Postnatal care of women	Midwives provide comprehensive, high quality, culturally sensitive postnatal care for women
New born care (up to 2 months of age)	Midwives provide high quality, comprehensive care for the infant from birth up to six weeks.
Post Abortion Care	Midwives provide a range of individualised culturally sensitive post abortion-related care services for women experiencing pregnancy termination or loss that are congruent with applicable laws and regulations and in accord with national protocols
Lifesaving skills	Midwives competently apply life – saving skills during Emergency Obstetric and Neonatal Care
Professional Leadership and management	Midwives apply Professional, Leadership and Management skills in the provision of Maternal and Neonatal Health Services

Adapted from NMCM 2012

Additionally, during the midwifery clinical experience, students are obliged to fulfil the Malawi Nurses and Midwifery Council minimum pre-registration requirements under the direct supervision of a registered nurse midwife. The NMCM pre-registration requirements are indicated below:

Table 11: NMCM minimum pre-registration requirements for student midwives in Malawi and basic emergency services they are mandated to offer.

NMCN Requirements	Minimum	Basic emergency midwifery services
Carry out complete assessment of pregnant women at first visit	20	Administration of parenteral antibiotics
Carry out complete assessment of pregnant women at first visit	50	Administration of uterotonics (for example, parenteral oxytocin)
Perform vaginal examinations including pelvis assessment	20	Administration of parenteral anticonvulsants for preeclampsia and eclampsia, e.g. (magnesium sulphate)
Conduct spontaneous vertex deliveries	40	Manual removal of placenta
Perform and repair episiotomies under local anaesthesia	5	Removal of retained products of conception (manual vacuum extraction)
Repair perineal lacerations under local anaesthesia	3	Perform neonatal resuscitation using bag and mask
Conduct vacuum extractions	6	Manage postpartum haemorrhage
Conduct breech deliveries	2	Manage shoulder dystocia
Conduct multiple gestation deliveries	2	
Manage the care of postnatal mothers and their infants during the hospital stay	40	
Conduct postnatal assessment of mothers and infants at the 6th week	12	

4.6.6 Outcomes

The curriculum has intended learning outcomes which are also outlined within each module; the outcomes start with an action verb. Some of the outcomes are as follows:

- Apply the midwifery management process during the care of mothers and their families in health care facility and community settings.
- Demonstrate competence and safety in the provision of care during pregnancy, labour, delivery, and puerperium.
- Utilize research findings in the provision of midwifery care.

4.6.7 Programme implementation

The midwifery course commenced in the second semester of the third year. The curriculum prescribes the number of hours for the various teaching and learning strategies for year three and year four students as follows: 40 hours-lectures, 20 hours tutorials/seminars, 60 hours lab/simulations (year 3) 110 hours-lectures, 15-tutorials/seminars, 75-lab/simulations (year 4) and 240 hours are prescribed for each clinical placement.

The timetable indicates that classes started at 7:30 am to 5.00pm every day. In one of the weeks, 13 hours were allocated for theory and 8 hours for skill practice. Year three students had 92 hours of preparation for clinical practice, 18 of these were used for skill practice.

The classroom hours for midwifery have reduced to 18 hours per week which translates to 90 hours of theory for the designated five weeks. However, the NMCM prescribed the 200 hours. Students had 22 hours per week for eight weeks which translated to 176 hours of theory. The NMCM prescribed 200 hours (NMCM, n.d.). Previously, students had 39 hours per week for five weeks which translated to 195 hours. The clinical practicum in labour ward is four weeks, two weeks for antenatal and postnatal ward respectively and four weeks for neonatal nursery and community midwifery separately. This indicates that students were expected to achieve all the minimum requirements pertaining to labour and delivery within ten weeks. However, for the advanced procedures, the time frame was six weeks because they were not allowed to perform advanced procedures in year three.

Comparatively, students enrolled in the in-University Certificate in Midwifery (UCM) programme had four weeks of theory and the hours are for midwifery only. They had

the same amount of time for practicum as the integrated programme group, but towards the end of the programme, they were allocated to various district hospitals for four weeks. They experienced midwifery practice at a district hospital where resources are usually scarce compared to central hospitals. In contrast, their counterparts were allocated to health centres for four weeks for community midwifery.

4.6.8 Teaching and learning strategies

The curriculum prescribes lectures, group discussion, clinical simulations, laboratory sessions, problem-based learning, directed and self-directed learning as teaching and learning strategies in this programme.

4.6.9 Students' clinical assessments

Assessment of learning prescribed in the curriculum includes written examination, objective structured clinical examination (OSCE), and group projects. Antenatal, postnatal, and neonatal care assessments were authentic, and the student are required to interview, practice and taught a client in a clinical session. Norm referencing was the prescribed mode for the grading of students' assessment. Assessment of learning in year three students involves multiple choice and short answer questions. In year four students' assessment involves multiple choice, short essay questions, case studies and OSCE. The assessment form indicates that norm referenced grading is utilised when assessing students' learning. The assessment tool indicates that the student is required to demonstrate his or her learning in a real-life situation that includes practice teaching, interviewing a client in a clinical session where he or she performed several behaviours to a specified standard. At the end of the rotation students have end of rotation evaluations done by the midwives. Finally, students have and OSCE at the completion of the programme.

4.6.10 Reflexivity

This is endogenous research, with me, the researcher as an insider (Fleming,2018). My understanding of the context and role enhanced my awareness, knowledge, and sensitivity to many of the challenging decisions and issues encountered by educators, learners, and midwives. Being an insider assisted me in working with the informants in this study, in that I had easy access to them and understood them easily (Trower, 2011). I was familiar with the language, jargon and acronyms used by the participants; hence, I understood the participants' responses (Fleming, 2018). In reference to this study, I understood what the participants meant when they referred

to KCN graduates as “half-baked or drip stand midwives”. Each group of people has its own language and associations, a stranger to the culture may miss clues that are clear to an ‘insider (Berger, 2015). Additionally, I had easy access to the curriculum, students’ clinical assessment forms and time-tables, which could have been difficult for an outsider. Brannick and Coghlan (2007) assert that since insider researchers are already members of the organisation, they have primary access to specific parts of the organisation that are relevant to their research. I realised that some questions during the interview would touch on topics that have already been discussed during workplace conversations, therefore, I encouraged participants to feel free and open about an issue we had already talked about and to respond as if the issue was never discussed previously (Chavez, 2008). My perceptions of midwifery education at the college have been shaped by my personal experiences in my different roles. Due to previous experiences working closely with the educators and midwives I brought certain biases to this study**.** However, I set aside my assumptions and perceptions so that they did not interfere with the information given by the participants. I ignored my assumptions and preconceived ideas and prompted, probed, and encouraged participants to express their views of their experiences (Jootun et al, (2009). Though I identified with the participants, I did not impose my values or opinions on them. I opened my mind to listen and understand what the participants said. Considering that this is a qualitative study, I was the instrument in the semi structured interviews through which data were collected (Pezalla et al, 2012). I used responses of the senior midwives and educators in the first phase of the study, to guide in the data collection, I probed for further information for depth and clarity (Sorrell & Redmond, 1995). This helped me to develop a data collection tool for students’ focus group discussions in the second phase of the study, I made questions that I did not consider previously. For example, the midwives perceived that many students are not interested in midwifery, they are forced to study midwifery due to the combination. Hence, I decided to add a question pertaining to the students’ interest in midwifery. My focus was on what the participants and documents said. I reflected and created new understanding of the teaching and learning of midwifery at KCN using my previous knowledge (Sorsa et al, 2015).

CHAPTER 5
INTERPRETATION OF FINDINGS

5. Introduction

In this chapter I interpret the findings from all the sources of data under themes and subthemes. The findings will be interpreted using the learning theories, international and national standards of care, CBE concepts and evidence from the literature. This will assist me in making implications on the midwifery profession in Malawi, and conclusions will be drawn accordingly. The themes include; nature of programme, programme implementation, outcomes, instruction process, teaching and learning strategies, student supervision, personal relationships, lack of resources, and educator needs and challenges, and comparisons. The themes are listed in the table below:

Table 12: Themes and subthemes

Theme	Subthemes
Nature of the programme	Response to national needs
	Competency based
	Combined nursing and midwifery
	Implementers excluded in change of programme
	Disapproved by students, midwives, faculty members
	Entry into the programme
Programme implementation	Sequencing: Theory first then practice
	Reduce content
	Demonstrations and skill practice done at once
	Long classroom hours
	More focus on theory than skill practice
	Rotational placements
Outcomes	Programme
	Graduates' performance below expectations Internship recommended
	International body (ICM)
	National body (NMCM)
	Unable to fulfil minimum requirements
	Changes to minimum requirements
	Inadequate learning opportunities
	Large enrolment
	Do vacuum extraction at the skills laboratory
	Theory practice gap
Teaching and learning strategies	Classroom-lecture; to finish content, too many students
	No opportunities for skill practice
	Clinical teaching- demonstration
	No peer or near peer teaching
	Role models

Student supervision	Midwives, lecturers
	Frequency of supervisory visits
	No faculty on first day
	Assumed that midwives will support students
	Unequal support; lack of skills and absence of well qualified midwives
	Have preceptors at clinical placements
Students' assessment	Assessors
	No formative feedback
	Assessments- summative, individual, group, overall evaluation
	Assessment tools
	Group assessments disapproved
	Grading of assessment-norm referenced, influenced by interpersonal relationships, and past performance
	Grade inflation
	Midwives pressurized to produce grades
Personal relationships	Poor interpersonal relationships with lecturers, midwives, and doctors
Lack of resources	Human, time, equipment, teaching and learning materials, infrastructure, finances
	Unequal distribution,
Educator needs and problems	No supervision
	No feedback from students
	No teaching skills
	Heavy work overload- many programmes, large enrolment
	No job satisfaction
Comparisons	

5.1 Nature of programme

The curriculum document and some educators indicate that the programme is competency based, it was developed in response to high maternal and neonatal deaths in Malawi. Despite that students and graduates did not mention this, they were aware that they were required to fulfil pre-determined competencies. This is in line with Gruppen et al (2012) who state that in CBE, the curriculum is designed based on needs and assessment of the society, and a competency advises learners, and other stakeholders, about what is expected of them. What students should learn, and how they should express their learning, is clearly stated before teaching takes place (Biggs, 2014).

Senior midwives, KCN graduates, educators and the curriculum indicate that the programme is combined. Senior midwives, educators and students disapproved the programme, stating that it compromises the learning of midwifery. They, including the KCN graduates suggest that the two programmes be separated for effective teaching and learning. This concurs with the ICM who assert that integrated programmes of nursing and midwifery do not have sufficient time and clinical resources to prepare competent individuals who can practice full scope midwifery and have the confidence to take full responsibility for attending births upon graduation (ICM, 2012). Mzuzu University graduates did not indicate any concerns with the combination. This may be because Mzuzu University uses a different calendar since it is not under University of Malawi. They indicated that Mzuzu University students spend more time at the various clinical placements.

The curriculum document indicates the necessary programme entry requirements. Admitting candidates who have met a formal admission criterion, such as entrance examinations, an in-person interview, or a written statement of interest in the profession, helps candidates achieve clinical competency (Kibwana et al, 2017). The same applies to Mzuzu University candidates. This is consistent with the ICM global standards for midwifery education (2025) who recommend entry requirements, including minimum requirement of completion of secondary education. However, students and graduates

from both institutions acknowledged that although they fulfilled the entry requirements, most of them were not interested in the programme, they were motivated by other people. Interest is a powerful motivational process that energises learning, guides academic and career paths, and is essential to academic success (Harackiewicz, 2016). Interest is an increase in attention, and focuses the mental activities of a person on an object related to him/herself. Hence, interest has the potential to increase an individual's strength or drive to centre attention on his/her desires (Wahdi et al, 2024). Considering the amount of effort required for a midwifery student to achieve competency in various skills, his/her interest in the programme is crucial.

5.2 Implementers excluded in change

Two educators bemoan the top-down approach that was implemented in the changes of the programme: changing to CBE and large enrolment. This approach renders members of the organisation passive and limited to receiving information and acting accordingly. Their degree of participation tends to be low, and their reaction is mostly acceptance, however, resistance is high (Janićijević, 2012). Employee involvement in decision-making is a critical aspect of current organisational management, it provides significant benefits regarding motivation, job satisfaction, and organisational performance (Ogu, 2024). It is recommended that nurse educators at all levels of the educational institution should be involved in curriculum development for a deep understanding of the context of teaching and learning and the new curriculum, and to support implementation. For effective teaching and learning, and uniformity in teaching, educators must have a clear understanding and appreciation of the curriculum approach (Uys, 2005; Morgan et al, 2007). Educators must be involved from the early stage of curriculum development till implementation. Having first-hand experience, educators can anticipate what can go wrong in classrooms and make accommodations to revise implementation. Educators' early engagement in the curriculum development process is crucial because they develop their understanding of the curriculum based on their existing beliefs and practices (Haque & David, 2022).

5.3 Programme implementation

Students, educators and the curriculum document, KCN and Mzuzu University graduates reveal that the teaching and learning of midwifery starts with theory followed by practice. Providing students with theory which is immediately followed by a clinical practice allows for adequate exposure to experiential learning for developing required competencies (WHO, 2016). Knowledge gained during theory sessions serves as a tool for students during clinical practicum, and its application aids them in decision making and providing evidence-based care to clients (Daemers et al, 2017). Incorporating theory with practice is consistent with the NMCM (2013). Nursing is a practice discipline where theory and practice cannot be separated as both are very critical to the profession (Bharati, 2022). The gap reflects a separation between best and actual practice, hence such a divide could result in the delivery of care that is inconsistent with practices elsewhere (Matthew & Tucker, 2018). Theory to practice gap leads to poor quality of patient care, and job attrition (Shoghi et al, 2019), a greater risk of patient harm (Matthew & Basil, 2018). Based on this, it is not surprising that KCN graduates were found to be lacking in their practice.

Educators and the timetable indicate that students have demonstrations and practice of all skills at the same time a week prior to the clinical practicum. This is a typical example of massed skill learning which does not support learning. massed learning does not provide chances for memory reinforcement. Though time-consuming, spaced practice leads to a better retention rate, allowing for better consolidation of facts and ideas, long-term retention and better skills implementation (Ahmad et al, 2024). Spacing practice of motor skill training facilitates skill acquisition, short-term and long-term retention, and, a more efficient learning process for learners, leading to patient safety, and economical as fewer resources, such as simulators, and educators for training the students (Spruit et al, 2015). It can also be argued that massed skill learning may increase students' cognitive load, considering that the skills may be of varying complexity, consequently compromising learning. Andersen et al, (2018) affirm that repeated and spaced simulation training reduces cognitive load and has positive effects on cognitive load and performance in the successive learning situations of higher complexity. At Mzuzu University learning of skills starts with a lecture in the morning and skill practice in the afternoon. Though this

practice seems better than that of KCN, it lacks constructive alignment. In constructive alignment the action verb of the learning outcome is enacted during the learning process. Educators should focus on what outcomes students are meant to attain and help them to do so other than talking while the learners take notes (Biggs, 2014).

Students, educators, and the timetable indicate that classroom sessions are too long starting at 7.30 am to 5.00pm. Students find this tiresome, and the hot weather during summer compounds the problem. Consequently, students are unable to concentrate and tend to sleep, use mobile phone or absent themselves from class. Temperatures at high levels beyond an individual's bearable limit can heighten body heat, which may cause muscular weakness, dizziness, mental and physical fatigue. Thermal discomfort in the lecture theatre space has an effect on stress behaviours affecting learners' concentration, attentiveness and non-vigilance, tiredness, restlessness and irritation during lectures (Amasuomo & Amasuomo, 2016). Engaging students in learning activities, in small groups would be ideal, otherwise learning is compromised in such conditions. Although Mzuzu University students' classes are also from 7.30am to 5.00pm, the graduates did not indicate having problems with this.

Students and educators and Mzuzu University graduates indicate that students have rotational placements. Rotational placement means students must establish relationships with a new group of qualified midwives, learn the layout of the new placement, and gain functional competency with the various electronic charting programmes and equipment. Additionally, continuous faculty changes contribute to students' stress, impair the instructor's ability to know the students and their abilities (Mulcock et al, 2017) and to assist them relate to the perplexing stimuli-filled clinical learning environment (Papp et al, 2003). However, participating in clinical rotations, exposes nursing students to several patient populations and healthcare settings, to prepare them for the challenges of working in a different and dynamic healthcare environment (Yaas et al, 2023).

5.4 Outcomes

Senior midwives, educators, KCN students, and the curriculum indicate that before the completion of the programme, students are required to fulfil the programme outcomes, the NMCM (2012) essential competencies for basic midwifery practice, and the NMCM pre-registration minimum requirements. Fulfilment of pre-registration requirements is requisite for licensure examinations. There is some contradiction here on the part of the NMCM because their document stipulates competencies, on the other hand they prescribe numbers that learners should fulfil before they can be licensed**.** The curriculum document has educational outcomes that signify the graduate's characteristics. The outcomes and requirements are made known to the students through the course modules. This is consistent with Gruppen et al (2012) who state that after identifying the learning outcomes, they must be made explicit and communicated to students and teachers.

Senior midwives and educators have high expectations of their graduates. Educators expect the graduates to be managers, educators, researchers, supervisors, and decision makers at ward level because they are taught at a higher level. There is evidence that higher proportions of degree nurses in hospitals are associated with better patient outcomes (Lasater, et al, 2021; Haegdorens et al, 2019; Audet et al, 2018). Baccalaureate and higher education prepares nurses to coordinate health care. They have better communication skills, more expertise in critical thinking, and are well prepared to deliver holistic care that is autonomous, evidence-based, necessary to satisfy patients' needs and achieve high quality care (Liu et al, 2020). Senior midwives expect graduates to perform highly as mentors, leaders, managers, skilful practitioners, accountable, caring and to perform according to standards because they are from an outstanding institution in the country. However, educators and senior midwives observed that KCN graduates do not meet the expectations. Educators and senior midwives perceive that graduates' performance is below the NMCM professional practice standards. Hence, educators refer to the graduates as 'half baked' meaning that they are not adequately prepared for practice. However, the most important requirement at registration is that a midwife is safe and will practise safely. This requires the midwife to be reasonably self-sufficient, to base her practice on up-to-date research evidence and to be conscious of a midwife's sphere of practice and the limits of his/her own abilities (Murphy et al, 2008). The new graduate is

an advanced beginner who relies on textbook descriptions of patient signs and symptoms associated with illnesses, injuries, and treatments, they may find it challenging to identify minute differences and are unable to assess the severity of a case in relation to others merely because of their inexperience with such patients' past and future paths (Murray et al, 2019; Alharbi et al, 2023).

On the contrary, KCN and Mzuzu graduates consider themselves well prepared for midwifery practice, based on the skills they were able to perform. There is, usually a gap between the expectations of senior nurses and new graduates. Senior nurses tend to have low expectations of new graduates' performance while new graduates believe that they are well prepared to perform tasks (Hsiao et al, 2021). Nevertheless, some graduates from both institutions admitted having challenges in their work. The transition from being a nursing student to a professional nurse is a substantial milestone accompanied by various struggles, such as being tense and suffering physical exhaustion, that newly graduated nurses must adapt to and cope with (Alharbi et al, 2023).

Educators, students, KCN, and Mzuzu graduates acknowledged that student midwives are mandated to demonstrate their achievement of the ICM and NMCM essential competencies for basic midwifery practice, through their ability to perform according to the prescribed acceptable standards. This is consistent with CBE, which is more concerned with what students should do with what they learn (Tacettin & Mustafa, 2021). Success is determined by the ability to perform to expectations that are mostly determined by stakeholders outside the educational programme (Gruppen et al, 2012). As for the NMCM minimum pre-registration requirements, students demonstrate their achievement by fulfilling the prescribed numbers. Focusing on numbers may impact negatively on students' quality of clinical learning and may cause a lot of stress among students as they manage the theoretical and clinical components of their course (Pincombe et al, 2007). There is no association between attainment of specific numbers of experiences and a learner's achievement of competency (Fullerton et al, 2011). The successful completion of the midwifery education programme occurs when the learner completes all the learning requirements and demonstrates competency in full scope midwifery practice (ICM, 2012). All participants except the senior midwives

acknowledged that the NMCM minimum requirements especially the six vacuum extractions are unachievable.

The outcomes in the curriculum document begin with action verbs in line with CBE. However, students, educators, KCN and Mzuzu University graduates acknowledged that the lecture is mostly used in classroom teaching. Some educators and the timetable indicate that there is minimal engagement of students in the learning process. In a certain week the timetable indicates that students had eight hours of skill practice and thirteen hours of theory despite all content being practical. This indicates lack of constructive alignment in the teaching. Additionally, it shows that learners did not have adequate time for hands on experience which is necessary in psychomotor skill learning. Hands on skills practice in clinical skills laboratory is necessary for psychomotor skill learning (Sharma et al, 2019). Time constraints hinder the utilisation of self-directed skill learning and threatens the acquisition of clinical skills and knowledge during the training of student nurses (Phehla et al 2024).

Students, KCN graduates, midwives, educators and Mzuzu graduates stated that there is theory practice gap. Acquiring and using knowledge occur concurrently; a student's use of knowledge demonstrates learning. Knowledge that cannot be applied in practice is useless to learners since it does not facilitate learning (Dagar & Yadav, 2016). Theory practice gap is a true reflection of challenges at the institution as well as the health facilities where students are sent for clinical learning; such as ineffective teaching and learning approaches, and paucity of resources for students' learning (Daneshfar & Moonaghi, 2025), paucity of resources to undertake procedures as they were taught (Haraldseid et al, 2015; Kerthu & Nuuyoma, 2019), and shortage of staff (Kerthu & Nuuyoma, 2019), which compromises students' learning. One educator, and students acknowledged that educators teach the same old things. This is contrary to the WHO (2014) mandate which obliges midwifery educators to maintain current knowledge and skills in midwifery, based on the best available evidence.

5.5 Content

Educators reported that students' learning is in line with essential competencies for basic midwifery practice as prescribed by the NMCM. This is crucial in CBE because the ultimate goal is that what is learnt should help graduates to address societal needs. In CBE outcomes dictate what is learnt (Biggs, 2014), which entails that what is learnt is directly related to what the graduate is expected to do upon completion of the programme which is the whole essence of conducting a societal needs assessment before curriculum development.

5.6 Methods and learning strategies

The curriculum document prescribes interactive teaching and learning approaches that promote students' development of transferable skills as necessary for lifelong learning like role play, PBL, group discussion and simulation. This is consistent with the NMCM (2013) nursing and midwifery education standards which mandate the nursing and midwifery programme to define the instructional methods employed. However, educators, students, KCN, and Mzuzu graduates agree that the lecture method is the main method used during a day long classroom session. This is not an effective way of teaching skills, changing attitudes or encouraging higher order thinking. Learners get information but have little opportunity to process or critically appraise the new knowledge presented. Learning is an active process, but the lecture method fosters passiveness and dependence on the educator (Saiyad et al, 2018). Students struggle to maintain focus during traditional lectures, consequently, information retention is compromised. This causes information overload and boredom in students (Klein et al, 2023). A traditional lecture promotes a surface approach to learning, does not encourage the development of transferable and generic skills (Stigmar, 2016). This contributes to the theory practice gap reported by participants in this study.

Although, educators indicate awareness of the interactive teaching approaches, they mostly use the lecture method, and, in some cases, they just give notes to students. This practice is inconsistent with CBE and the NMCM (2013) nursing and midwifery educational standards who mandate educators to use evidence-based approaches to teaching and learning. Some educators reported having difficulty using interactive teaching approaches to a large class. Fullerton et al (2011) assert that educators may be

involved in teaching without adequate preparation for the teaching of midwifery programme. This is a reflection of poorly introduced change in an institution.

It is surprising that an educator who knows that he/she is expected to implement the curriculum chooses to practice contrary to what is prescribed in the curriculum and expect the programme to produce graduates who would perform competently. Self-assessment is important, it is expected that one would desire to perform well and hence, seek assistance to address their challenges regarding their work. It seems that educators were comfortable with teaching contrary to the stipulations of the curriculum. There is strong contradiction between what is stated in the curriculum and how it is implemented. This is a good example of the impact of top-down change management style, it has the potential of experiencing failure during change implementation because it does not allow bilateral flow of communication (Kiprotich et al, 2019). This indicates that the CBE at KCN was compromised from the start, hence, it is not surprising that the graduates underperform post registration.

One educator observed that there is no peer teaching among students. On this, there are contradicting findings because some KCN students and all Mzuzu graduates acknowledged using peer teaching and role play during skill practice. Peer to peer teaching supports learning. Peers to peer teaching creates a more comfortable and less intimidating environment for learners (Zhang et al, 2022). Cognitive and social congruence between student teacher and learner results in a powerful peer assisted learning experience. In the peer assisted learning context a student teacher and learner share the same knowledge framework referred to as cognitive congruence. Student teachers know where students are struggling and are able to consider topics as important, difficult or as basic knowledge, student teachers use language familiar to the learner, enabling the student teacher to explain difficult topics or concepts at an appropriate level for the learner's understanding (Loda et al, 2019). Peer educators have a cognitive schema or knowledge base that is somewhat similar to the students and this cognitive congruence that would enable them to communicate in language that the student understands as well as to explain concepts in ways that are easily grasped by them. Social congruence is the interpersonal qualities like the ability to communicate informally and

empathically with students, and creating a learning environment that encourages an open exchange of ideas (Yew & Yong, 2014). Besides, student teachers show social congruence by being interested in the student's academic workloads and daily lives because they themselves have previously completed the same course successfully at an early stage of their studies (Loda et al, 2019).

Students and educators agree that students are denied the opportunity to practice skills at their own time, because the opening hours of skills laboratory coincide with classroom sessions. This may deny students the opportunity for deliberate and repetitive practice of skills for mastery compromising the development of expertise, retention and later skill transfer to other settings (Kardong-Edgren et al, 2019). The fundamental tenet of competency-based teaching and learning is that instruction should be designed to maximise the probability that the majority of students will meet those outcomes. Discussing the subject, as in traditional teaching is not the best method. Students must participate in educational activities that are directly related to reaching the desired results (Biggs & Tang, 2011). In contrast Mzuzu students have access to the skills laboratory almost every afternoon during the week. Additionally, they take mannequins and textbooks with them to the placements, allowing them to practice with peers. A skills laboratory is crucial in the learning of psychomotor skill because that is where the learning materials are. The clinical skills laboratory creates a bridge between the university and the clinical settings in which students integrate theory and practice and develop a reflective attitude (Ewertsson et al 2015). Midwifery education involves hands on activities and these are mostly done at the skills laboratory, that is where deliberate practice takes place for students to perfect their skills and achieve automaticity. Restricting learners' access to the skills laboratory is working against CBE.

Midwives, students, Mzuzu University graduates and educators agree that the demonstration method is used to teach skills. Demonstration is the most appropriate strategy for teaching skill development, it turns imagination into something students can see, hear, and feel, hence leads to much higher levels of achievement and retention (Devi et al, 2019). Learning occurs through activating different sense modalities, hearing, touch, sight, speech, smell and taste. The more one modality strengthens another, the

more effective the learning (Biggs & Tang, 2011). Demonstration is more individualistic in teaching and draws student's attention better than traditional lecturing, in which students divert their attention to doing other things while the lecture is ongoing (Ogunlowo & Ajibade, 2024). Demonstrations help students to understand the subject better, they promote thinking skills and enable students to think more creatively. They are useful for facilitating and developing learning, since they stimulate student's interest (Basheer et al, 2017).

Midwives and educators agree that most of the placements lack good role models. Role modelling is a significant strategy in the learning process of nursing students. Role modelling conveys professional knowledge, skills, and values, and development of academic accomplishments. It supports individuals in their personal growth and enhances their self-efficacy approach for conveying professional knowledge, skills, and values, and fostering academic accomplishments

(Azadian et al, 2022). In the nursing profession, role models are essential to nursing students' journey towards understanding the nursing role and professional responsibility. Therefore, it is important for nursing students to identify role models that support their growth and development. Student nurses are predominantly influenced by clinical nurses and regard them as both positive and negative role models, and they aspire to imitate the qualities of the nurses they consider positive role models and actively avoid behaviours and qualities associated with those perceived as negative role models (Kurt et al, 2024). Educators are typically reported to be role models for their students, therefore, it is important for clinical educators to pay attention to their professional behaviours knowing that they are effectively observed and modelled by students (Azadian et al, 2022). Educators who model positive behaviours in both clinical and academic settings are valued by students, negative behaviours can still lead to valued learning experiences, but there is a risk that students might imitate such practice, leading to poor outcomes for themselves and others. Continuous exposure to educators who display poor practice increases the students' chances of adopting the same behaviours (Jack et al, 2017). In the context of KCN graduates, it can be argued that it is likely for them to have negative behaviours considering that they lacked good role models during their training. During

clinical practice, students become peripheral members of the community of practice, and they are likely to automatically adopt the good or bad behaviours of the older members of the community through professional socialisation. Role modelling, mentorship and the peer group are powerful socialising means which contribute to student identity formation and forming critical components of the clinical and educational community of practice within their placement (Kirtchuk & Markless, 2024). Male KCN students complain that they lack male role models at the institution. The social characteristics of the model such as sex and similarity influence motor performance of the learner during demonstration. Students tend to pay attention to a model they perceive to have a greater similarity to themselves leading to self-efficacy and learn faster (Chye, et al, 2025). Mzuzu University graduates were silent on role models.

5.7 Support

All participants agreed that educators and midwives supervise and give support to students during clinical practicum. This practice is consistent with NMCM (2013) nursing and midwifery standards that students be supervised by experienced practitioners. Similarly, the Nursing and Midwifery Board of Australia (2018) mandates nurses to commit to teaching, supervising and assessing students to develop the nursing workforce across all contexts of practice. Educators and KCN students stated that educators are available for clinical teaching once in a four-week placement. However, KCN students and educators bemoan the absence of educators on the first day at the placement. With such practice students lack a good foundation for clinical facilitation due to lack of proper orientation (Letswalo & Peu, 2015). Raisley et al (2003) state that the educator's presence is critical in preparing students for entry into the clinical setting; thus, plans should be made to orient learners to the site and to clarify the education programme's expectations to the learners**.** Mzuzu graduates did not report having challenges with supervision. Considering that KCN students are allocated to so many health facilities within the country it may not be possible for educators to be available on the first day of students' placement.

Educators and students reported that students get unequal supervision and support because educators concentrate on third rather than fourth year students. Additionally, students allocated to district hospitals had the opportunity to work with professional

midwives unlike those allocated to health centres. Consequently, students allocated to health centres did not interact with individuals who control important resources. Mzuzu graduates did not raise any challenge related to this. Unequal supervision entail unequal student support meaning that students had unequal learning opportunities. Similarly, those allocated to district hospitals had the opportunity to observe highly qualified health care professionals at work, hence, they had many learning opportunities. Additionally, health centres in Malawi tend to be grossly short staffed and ill equipped which compromises learning (Haraldseid et al, 2015).

KCN graduates, educators, students and midwives perceive that the large student enrolment hinders supervision and student support. According to one midwife, 10-12 students are allocated to a single midwife to supervise contrary to the 1: 5 educator student ratios prescribed by the NMCM (NMCM, 2012). This compromises students' learning. Mzuzu graduates did not have issues with this. KCN seems to be implementing the programme without adhering to standards of practice stipulated by both international and national bodies and yet expect to get good outcomes at the end of the programme.

5.8 Assessment

Students, educators, senior midwives and Mzuzu University graduates stated that students have summative assessment at the end of a four-week clinical practicum and at the completion of the programme. The summative assessment done at the end of the rotation is followed by a general evaluation of the whole placement. The assessments are scheduled by the educators which is contrary to CBE approach where students have assessments when they are ready (Gervais, 2016). Assessments are done in different formats; firstly, students are assessed individually while they provide comprehensive care to live clients which involves history taking, physical examination, provision of care including client education, to a client at the antenatal clinic and the postnatal ward. This is consistent with CBE, which entails that a student must demonstrate his or her learning in a real-life situation that includes practice teaching, interviewing a client in a clinical session where he or she performs several behaviours to a specified standard (Biggs & Tang, 2011). This assessment is done at the 'Does' level of Miller's Pyramid of clinical competence, where a student performs in practice and the educator directly observes the student in real clinical settings (Witheridge et al, 2019). Mzuzu graduates, students are

also assessed on real clients, but they request for an assessment when they are ready for it. Students demonstrate that they are capable of transferring knowledge, performing some skills in a certain multifaceted situation to resolve problems, and make decisions, or create new decisions within a given context (Gallardo, 2020).

Secondly, students have group assessments, three or four of them provide care to a woman during labour and delivery under the observation of a midwife. Later an educator who did not observe the students asks them questions on the conduct of the delivery and the care given to the mother and baby. They are then graded equally, similarly, some case studies are done individually while others are done in groups. This is contrary to best practice regarding assessment, students are given feedback on activities that the assessor directly observed the student performing (Burgess & Mellis, 2015; Gallardo, 2020; Witheridge et al, 2019). Without observation, errors are not corrected, and good performance is not reinforced, consequently, clinical competence may not be achieved (Burgess & Mellis, 2015). In CBE each student is expected to demonstrate his or her achievement of competence or mastery of all the prescribed skills. KCN graduates, students and educators disapproved group assessments.

Lastly, midwives conduct an overall evaluation of each student at the end of the placement. End-of-rotation evaluation forms are poor predictors of real performance (Saucier et al, 2012), hence, they are of little use (Burgess & Mellis, 2015). At Mzuzu university each student is observed directly by two/ educators throughout all the stages of labour and assessments are mostly done by educators.

The NMCM (2013) nursing and midwifery education standards recommend formative and summative assessment of students. Equally, the WHO (2016) three-year regional prototype pre-service competency-based midwifery curriculum document clearly indicates a wide range of formative and summative strategies to be used by educators. Students, educators, and the curriculum document reveal that there is no formative assessment/feedback for students. However, formative feedback is important in psychomotor skill learning. It helps to bridge the gap between where the student is and where he/she should be. Besides, it is an indication of good teaching (Biggs & Tang, 2011). At Mzuzu lecturers give feedback to each student during supervision.

All participants agree that students are assessed by educators and midwives which is consistent with the NMCM (2013) standards. A plethora of research on feedback indicates that students should receive feedback from all professionals working in the health facility because patient care involves people from different professional backgrounds (Jenq et al, 2024). Recipients of care from students, family members (Nuuyoma, 2021), medical students, peers, and the student him or herself can give feedback on the student's performance (Burgess & Mellis, 2015). Patients are the only persons who can assess the students concerning the patients' own perception of the care rendered by students (Tomas et al, 2024). Assessments done by educators tend to be more trustworthy than those done by midwives inexperienced educators rely solely on assessment tools and books for their knowledge, hence, tend to assign high scores during assessment (Vuso & James, 2017). Checklists are used for students' assessments. Leung (2002) states that this practice is superficial and demotivating, it encourages students to do the right thing to pass rather than to think critically and excel**.** Checklists are good indicators of can do, can't do and done, not done, but are less informative than scaled rubrics. Checklists do not indicate the quality of a product or performance. Good feedback practice provides useful information to students in improving their learning, offers decent information to educators which is eventually used to improve learning experience for the students (Al-Bashir, et al, 2016). An assessment should indicate the extent to which learners have learned and the extent to which they can demonstrate that learning (Biggs &Tang, 2011).

Educators, students, curriculum document and assessment tools indicate that the norm reference grading system is used in grading assessments. Norm referencing assessment results do not indicate what the student can and cannot do (Oermann & Gaberson, 2014). They do not indicate whether a student has developed the desired competencies rather, whether a student performed better or worse than others. In CBE the emphasis is to identify performance that informs educators what has been learned, and how well, rather than identifying students in terms of some characteristic (Biggs & Tang, 2011).

Midwives, educators, and students stated that sometimes assessment grades were influenced by existing personal relationships between a student and the midwife. Students

also indicated that some educators grade students based on previous performance. This may cause students to get preoccupied with building good relationships with clinical midwives, rather than improving their performance, knowing that this strongly impacts on their clinical grade. Furthermore, this signifies halo effect in assessment where a student's initial favourable impression leads to higher later assessments (Cannon & Cipriani, 2022; Biggs & Tang, 2011). Mzuzu graduates did not report having such problems with assessments.

One midwife stated that some educators pressurise midwives to provide end of rotation students' evaluation grades because they had practicum in her or his ward despite the midwife having not interacted with them. Consequently, midwives just assign a passing grade to every student. Such an assessment lacks justification. Academic grading is a complex responsibility of educators embedded in ethical and relational competencies that support or compromise student development and professional formation. Ethical integrity guides the educator's moral compass in supporting the legitimacy of assessment aligned with the student's authentic performance (Del Prato & Bankert, 2021). The NMCM (2013) standards oblige educators to use valid and reliable formative and summative evaluation and assessment methods to measure student performance progress in learning related to knowledge, skills, and attitudes**.** As for the Mzuzu University graduates, in addition to the already mentioned assessments, each student writes a report on their clinical experience. This concurs with Kolb's experiential learning theory which encourages learners to reflect on their performance.

5.9 Students

The curriculum has information regarding the entry requirements of candidates into the programme. This entails that those who enrol into the programme are likely to succeed. Successful learning in CBE is dependent on learners having a strong cognitive and psychological foundation of prior learning. Learners with a lot of qualitatively good knowledge are expected to learn more than learners with little qualitatively good knowledge. When activated, prior knowledge affects learning outcomes and influences the learning processes that leads to positive learning outcomes (Schneider & Simonsmeier, 2025). Learning is an active construction process based on an individual's prior knowledge. Learners have to activate prior knowledge and connect it to the

provided information, to foster incorporation of new information into existing knowledge structures (Brod, 2021). Candidates who have met a formal admission criterion are likely to achieve clinical competency (Kibwana et al, 2017).

However, senior midwives perceived that some KCN students lack interest in midwifery. Interest is very important in learning for direction and duration of attention, quality of learning, the use of learning strategies, and the overall learning experience. Interest and knowledge develop and influence how a learner engages in current and subsequent tasks, given the inherent connections between the emotions and cognitive structures. People with high interest in something tend to learn more about it, and are more likely to devote quality time to activities related to that field (Herpratiwi & Tohir, 2022).

5.10 Educational environment

This is an overarching concept in the CBE framework. The learning environment is categorised into, physical environment which include material equipment, facilities, learning tools and standardized procedures (Heraldseid et al, 2015). Senior midwives, KCN, and Mzuzu University and students reported paucity of human resource both at the institution and health facilities and time for learning. There is a high educator-student ratio of 1: 265 in class and 1: 10 or 20 during clinical teaching contrary to the NMCM recommendation of 1:50 and 1:5 for midwifery classroom and clinical teaching respectively (NMCM,2013). The ICM (2013), standards oblige institutions to respect the ratio determined by the requirements of the national regulatory authorities. Educators bemoan the absence of a skilled midwife to assist students at the skills laboratory. Learning of psychomotor skills requires the presence of an expert to physically guide the learner (Soderstrom & Bjork, 2015) and to provide feedback during instruction. Therefore, the absence of a skilled person at the clinical skills laboratory compromises learning. Maternity units are equally understaffed, and midwives complain of having many students to supervise which compounds their already existing heavy workload. Paucity of human, financial resource, time, space, transport, teaching and learning materials featured highly in this study

Some educators observed that the programme is shorter than the ICM (2012) recommendation of 18 months, hence it does not suffice to prepare a fully qualified

midwife that can improve the quality of care as well as reducing unnecessary maternal and new-born deaths. Consequently, graduates from this programme may lack international recognition. The curriculum, timetable, students, and educators indicate that during the theory block, more time is allocated to lectures than skill practice. Students who spend little time learning skills only reach the cognitive stage, where they only know what to do and can pass a skill check off (Kardong-Edgren et al, 2019). Students' learning in the clinical skills laboratory extends over time (Ewertsson et al, 2015). Mzuzu graduates state that during the theory block students have every afternoon for skill practice, and they have their own scheduled time for skill practice at the laboratory.

Educators, midwives, and students are dissatisfied with the four-week clinical allocation for clinical practice. In CBE time is a resource for education, not the marker of learning. CBE programs allow students to progress at their own speed through the learning opportunities provided outside of institution hours and barriers, rather than to progress at a standard pace or time set for every student. CBE is an outcomes-focused approach, therefore, time is perceived as the variable, and performance as the constant. Consequently, CBE may not fit into fixed academic timetables because students do not spend equal time on achieving competency (Tacettin & Mustafa, 2021). Mzuzu graduates did not have issues regarding time. Furthermore, educators are dissatisfied with time allocated for the summative clinical assessments, because sometimes they do not finish the individual assessments, hence students who have moved to a new placement are taken back to the previous placement for an assessment. However, to accurately assess learning it is recommended to assess motor performance using retention tests, which involves assessing the learner after he/she has rested, such transient temporary influence of practice to dissipate. The resting period may range from 10 minutes to many days. Dubrowski (2015)

Educators and students bemoan the lack of microphones in the lecture hall, students scramble for the front seats because educators are inaudible at the back of the hall. Educators reported that the screen does not beam adequately in the large hall. Additionally, the skills laboratory does not have adequate mannequins. Training materials are necessary for deliberate practice for expert performance in skill acquisition.

Providing the right resources to support the expert performance approach allows learners to become self-regulated (Ericsson, 2015).

All participants reported paucity of resources in hospitals utilised for clinical practice hence, they improvise. Not only is there paucity of equipment at health facilities, but they are also of poor quality. One educator observed that there is unequal distribution of equipment in health facilities such that some students complete the programme without using basic midwifery equipment like the cord clamp. Consequently, students are exposed to a scenario different from what they learned in class. In situated practice, it is crucial that the newcomer is aware of the appropriate instruments, conditions, and usage of instructions (Gardiner & Anderson, 2013). Effective modelling involves demonstrating a procedure in an authentic setting while simulating the relevant actions and approaches, it includes preparation of equipment (Whitson et al, 2022). Lack of equipment, need to reuse equipment, unfamiliar old and outdated equipment forces learners to improvise resulting in false and inadequate training (Heraldseid et al, 2015). This is contrary to NMCM (2013) educational standards which mandate the nursing and midwifery programme to have standard teaching and learning resources to meet programme needs. Mzuzu graduates perceive that lack of resources at health facilities causes students to perform poorly when giving care.

Educators stated that the clinical skills laboratory can only take ten students at a time. This is contrary to the NMCM (2013) recommendation of a skills laboratory that accommodates 25 students per sitting. Inadequate space compromises students' ability to learn and practice skills, learning space is required for deliberate practice (Ericsson & Hadwell, 2019). Learning spaces must foster a sense of identity or encourage the perception that the learners are part of a community of learners (Nordquist & Sundberg, 2013). Educators and midwives state that some hospitals have poor infrastructure and lack running tap water, hence not conducive to students' learning. This environment does not support learning, the learning environment is the strongest predictor of preparedness for practice (Dijkstra et al, 2015). Placing students at a health facility that does not have running water may not only compromises patients' safety but that of the students too. Educational quality is influenced by students' learning conditions. Allowing students to

practice care giving at a health facility that has no water, may make infection prevention and control unlikely to become the everyday habit it needs to be (WHO, 2019). Among others, quality education requires a system where environments are healthy, safe, protective, offering sufficient resources and facilities (Andrade et al, 2024).

Educators state that due to financial constraints, supervision of students at distant placements is restricted to once every fortnight. Sometimes they are cancelled due to unavailability of transport. Consequently, students acknowledged that those allocated to placements that are closer to the college receive adequate support since educators can easily reach to them. This entails that students support is unequal. Nevertheless, both the NMCM (2013) and the ICM (2013) standards mandate institutions to have financial and budgetary arrangements for the continual operation of the programme. For effective implementation of a CBE programme, it is important to have adequate learning materials especially considering the large enrolment. The State of the World's Nursing (2020) urges governments to invest in massive acceleration of nursing education; educators, infrastructure and students, to address global needs, meet domestic demands, respond to changing technologies and advancing models of integrated health and social care.

Students, educators, and Mzuzu University graduates complained of poor personal relationships with educators and midwives, stating that educators mostly criticise rather than teach them during practicum. Positive relationship behaviours demonstrated by teachers lead to students' comfort in clinical environments (Heydari et al, 2013). Additionally, some educators acknowledged poor relationships among educators and midwives, consequently, some midwives were unwilling to support students, compromising students' learning. Cooperation between the school and clinical staff is an important aspect in the establishment of an effective clinical learning environment. It is important to maintain communication between the healthcare service and the nursing education institution (Bester, et al, 2024).

5.11 Educator needs and challenges

This is not part of the CBE framework but it came out strongly in this study from educators, learners and senior midwives.

5.11.1 Supervision

One educator stated that staff lack supervision and guidance on student supervision. Academic supervision conducted leaders is very helpful, it increases motivation of the work of educators in teaching; educators feel better prepared to teach and they feel helped to improve the quality of the learning process, and enhances the professional capabilities of teachers (Rahabav, 2016). The national regulatory body prescribes regular performance appraisals of staff involved in the implementation of the programme (NMCM, 2013). The ICM (2025) mandates regular assessment of the effectiveness of educators.

5.11.2 Lack of feedback from students

Educators, students and midwives acknowledged that they students do not give feedback to educators and midwives at the end of the placement. Appropriately structured and utilised feedback from students is effective in assessing teaching effectiveness. These evaluations are useful for gathering information about student learning as well as for making suggestions about future teaching behaviours (Ajmal et al, 2024). Student feedback is a valued improvement tool, and influential stimulus for educator reflection. Student feedback informs educators on the effectiveness of their practice and identifies areas for future professional learning (Mandouit, 2018). Feedback from students may help educators to develop self-awareness and identify deficits in their teaching practices

5.11.3 Educator developmental needs

Educators, senior midwives, and students reported that educators have developmental needs such as using interactive teaching approaches, handling large group of students in class and clinical teaching. Educators may be involved in teaching without adequate training for the midwifery programme (Fullerton et al, 2011). Educators should be supported to improve the quality of teaching in large classes, to facilitate learning and assessment, and to adopt more effective teaching methods that promote active learning and student engagement (Nyagope, 2023).

5. 11. 4 Heavy workloads

Educators, students, and midwives recognised that heavy workload impedes students' support. Workload remains a barrier to student teaching and learning at many nursing schools (Gerolamo & Roemer, 2011). Teaching large classes adds pressure to educators who are also expected to engage in research, community engagement and other administrative obligations (Nyagope, 2023).

5.11.5 No job satisfaction

One educator lacks job satisfaction because of dissatisfaction with her teaching. Job satisfaction and commitment to work are linked to high performance (Inuwa, 2016).

Based on this finding, my interpretation is that the CBE framework, may not apply to all contexts in its present state, it is a good starting point but, in some contexts, there may be need for modification. For example, the findings have revealed that for KCN, not only do learners need support but educators need support too to achieve the desired outcomes. The participants perceived that supervision, and feedback from learners would help educators to improve their teaching.

5.12 Conclusion

Although the curriculum document portrays that the KCN midwifery programme is competency based, the teaching, learning and assessment practices are contrary to CBE concepts, learning theories, hence, do not support learning. The educational environment is not conducive to effective learning due to paucity of learning resources, poor personal relationships, and inadequate space.

CHAPTER 6
DISCUSSION

6 Introduction

This chapter presents a discussion of the findings. The themes will be discussed in line CBE concepts, standards of practice, learning theories, evidence from the available literature and international and national midwifery regulatory bodies. Lastly conclusions will be drawn accordingly.

6.1 Nature of the programme

Findings indicate that KCN runs a combined nursing and midwifery BSc programme. According to WHO (2016), an integrated nursing and midwifery competency-based curriculum can address the health-systems challenges identified in the African Region. The complexity and acuity of health problems in Africa necessitates a multi-skilled individual with enhanced competencies to provide comprehensive care, manage various disease conditions in diverse health-care settings for people of all ages, and make appropriate referrals for appropriate services. Hence, they developed a prototype four-year nursing and midwifery competency-based curriculum, that African countries can adopt or use as a base to improve or review their curricula. However, the ICM (2012) does not support any type of integrated nursing and midwifery programme. They argue that there is insufficient time and clinical resources in integrated nursing and midwifery programmes to prepare competent midwives to practice full scope midwifery and have the confidence to take full responsibility for attending births upon graduation. This concurs with the findings in this study which reveal among other things, such as paucity of resources hinders students' learning. Therefore, it may be argued that graduates from this programme may not be sufficiently prepared and recognised internationally. Being signatory to the ICM, KCN is expected to adhere to the ICM standards. Failure to do so may jeopardise the recognition of graduates at international level. It is important to note that there are a lot of finances spent by government and parents for the education of these learners, therefore producing inadequately prepared graduates would be a betrayal to parents, government, as well as the public and a waste of learners' time. Besides, it disadvantages graduates in a competitive world.

6.2 Pre-requisites for entry into the programme

Findings indicate that a candidate's fulfilment of predetermined entry requirements and an indication of interest in nursing are requisite for enrolment. Students who fulfil a formal admission criterion are likely to achieve the clinical competency (Kibwana et al, 2017). The use prior knowledge helps learners to understand new concepts and synthesise new knowledge. Prior knowledge is an essential part of learning, it is the springboard in which a person may jump into another topic, similarly it is the mesh that connects to new information, consequently be reconstructed into a new and improved knowledge (Diaz, 2017; Nold, 2017; Pachman et al, 2013). The more a learner knows, the more he or she learns. The amount of information that can be held simultaneously in working memory is determined by the learner's prior knowledge. High levels of existing knowledge imply that schemas have been previously constructed and are easily retrievable (Meylani, 2024). Schemas assist in determining what information will be addressed and link it to existing schema. Therefore, having more schemas reduces the cognitive load placed on working memory (Paas et al, 2020). Although one of the requirements for admission into the programme is a candidate's expression of interest, findings reveal that many students who enrol into the programme are not interested in the profession. Most of them were influence by parents, other relations, and friends. Some were redirected into the programme by the selection committee of the University of Malawi due to unavailability of space at the colleges of their choice. While others enrolled into the programme because it is easy for nurse midwives to find employment soon after the completion of their study. Some educators and midwives perceive that many students are disinterested in midwifery, but they have no option due to the combination. Some midwives perceive this contributes to students' dishonesty and laziness. Considering that there is a lot of effort required for a learner to achieve competence, personal interest in the programme would be a critical aspect to be considered during enrolment.

Nevertheless, students as well as graduates acknowledged that midwifery is a good profession and did not regret enrolling into the programme. O'Callaghan and Slevin (2003) also found that some students demonstrated lack of interest in their learning. Equally, Eta et al (2011) found that students were not willing to learn and lacked respect

for staff. Midwives in this study associate the high attrition rate among KCN graduates to their lack of interest in the profession. Arguably, this may be a response to the non-supportive clinical environment they encounter during clinical practicum and when they join the workforce. Positive clinical learning experiences may reduce nurse attrition, increasing the number of capable professional registered nurses in the health sector (Zhang et al, 2022). Grigulis (2010) found that Malawian nurse midwives are very marketable since the introduction of the BSc programme.

6.3 Competency-based programme

The programme was designed in response to the country's health needs. This aligns the programme with CBE which maps the specific health needs of the populations to a set of competencies for the workforce to be trained. Outcomes can be linked to desired changes in health to ensure programme accountability to relevant stakeholders and to focus learners on aligning their performance with societal health expectations. The expectations are used to develop and implement specific learning experiences designed to instil in learners the necessary knowledge, values, and skills to achieve the competencies (Ponomarioviene et al, 2025). Unlike the traditional curriculum model where learning objectives are defined to reflect what the educators desire to teach or consider important, the KCN curriculum is a product of a needs assessment.

Findings indicate that KCN adopted the seven essential competencies designed by the ICM as core competencies that should be an expected outcome of midwifery pre-service education. The competencies are guidelines for the mandatory content of midwifery pre-service education curricula, and information for governments and other policymakers interested in the contribution that midwives can make to the health care system (ICM, 2010). Malawi added two competencies to the seven based on the needs of the country (NMCM, 2012). The ICM encourages countries to adapt the core set of basic competencies to reflect the needs and circumstances of the country (Fullerton et al, 2011). Hence KCN students have nine mandatory essential competencies (Table 4) to fulfil preregistration. The concept of CBE supports the current ever-changing real-world context, which should address the current and future complex needs of society. CBE focuses on integration of theoretical knowledge and practical skills, such as creative problem-solving, communication, teamwork, and the application of technology, allowing

students to not only understand theoretical concepts but also successfully apply them in daily, real-life situations (Ponomarioviene et al, 2025). This curriculum, if implemented properly, has the potential to produce critical learners who see education as more than acquisition of knowledge and skills for solving life problems (Gwele, 2005). CBE, as a performance-based approach, provides a powerful way of reforming and managing medical education by focusing on the product rather than the educational process (McMullen et al, 2023). However, this study has revealed the opposite, this may be a suggestion that the curriculum was improperly implemented. This may call for a need to revisit the implementation of the programme.

6.4 Programme implementers excluded

The study indicates that top-down approach was utilised in the change process. The university office ordered KCN to increase intake while WHO recommended integration of nursing and midwifery programmes and a competency-based curriculum. The government considered the increased intake as a means of increasing the workforce and the integration as an effective approach to meeting the reproductive health needs of clients as all nurses would attend to female clients holistically. KCN increased the intake from 25 to 150, to 250, and integrated the programmes. At the time of this study there were 169 midwifery students in the final year. Power coercive strategy seems to have been utilised in the change, giving the impression that the institution is regarded as a political organisation, as was stated by one educator in this study. "*KCN is a political institution, and it has been influenced politically*" Those in positions of power have the authority to manage and bring about change, with the expectation that members will obey and implement the changes. Power is a key driver and tool for change; top management plans the changes and, using power, imposes the changes on the institution's members. Members are expected to obey and implement the changes without question. This strategy assumes that power confers the right to impose a course of collective action in a social community. The inferior members of a community also expect the superior members to chart the course for the implementation of changes. Leaders who use this change strategy are uninterested in changing the beliefs and values of the organisation's members. The leader simply forces members to comply by using power; the member's assumptions, values, or attitudes are not changed (Janicijevic, 2012). Educators are the

operating core; they provide the service and create the product. Top managers are the strategic apex of the organisation, with overall responsibility. Employee engagement is critical in change management since it determines how open and receptive employees are to the new ways of doing things. Engaged employees are more inclined to welcome change, work through it constructively, and go above and beyond the call of duty to help bring about positive results (Vaja & Bhatt, 2018).

A normative re-educative strategy is an effective organisational change strategy. This strategy assumes that an organisation is a social system whose members' behaviour is influenced by shared assumptions, values, norms, and attitudes. People are social beings who construct the image of reality and set the rules of behaviour in that reality through social interaction. In every social system, the basic mechanism for determining individual and collective action is social construction of reality. Hence, organisational changes are implemented by constructing a different image of reality, which results in changes in the members' assumptions, beliefs, and values, thereby changing their behaviour. Such changes are normative because changing values leads to new behaviour, and they are re-educative because the process of change is facilitated by learning. In this strategy, values are the primary driver of change (Kiprotich et al, 2019; Szabla et al, 2016). It is recommended that staff be involved and allowed to use their initiative in the change process. Additionally, it is necessary for an organization to consider on evaluating the readiness of implementing the changes since change cannot be underestimated. Consequently, it requires people with adequate knowledge and expertise to manage and oversee the change processes (Kumarasinghe & Dilan, 2021). It can be argued that management assumed that educators were knowledgeable about CBE, and continuous monitoring and evaluation was not implemented. If monitoring had been done, it would have helped to recognise the impact of the change rather than leaving change unchecked to the extent that stakeholders begun to question the graduates' performance. It is surprising that people in decision making positions would overlook the aspect of monitoring the change that was imposed on people. It is unrealistic to just assume that the educators would implement the program effectively. This seems to suggest lack of commitment on the part of decision makers as regards the change.

6.5 Programme implementation

Findings indicate that the programme incorporates theory and practice. Furthermore, incorporating theory with practice is consistent with the ICM (2010) and NMCM (2013) standards. Theoretical knowledge of skills provides learners with declarative knowledge, which is later translated into procedural knowledge via knowledge compilation (Saks et al, 2021; Salaberry, 2018).

Sequencing

Findings reveal that teaching and learning starts with a theory block that precedes a clinical practice block. Having a theoretical understanding of issues relating to practice before being exposed to practice promotes safety in practice. However, it is also argued that delivering theory and practice separately within a curriculum has the potential to divide the two, thereby promoting a theory practice gap. A crucial part of nursing students' clinical skill development is putting theory into practice (Fathi & Ibrahim, 2023; Saifan et al, 2021). This prevents students from utilising their cognitive processes, the first stage in motor skill learning (Oermann et al, 2016), resulting in faster and more effective learning. Because midwifery procedures require physical manipulation, presenting them theoretically increases students' cognitive load, compromising learning. When theoretical and practical sessions are held concurrently, it entails that the educator is utilising a teaching approach that allows learners to use visual, auditory, and hands-on experiences. This reduces mental processes because learners do not have to make the manipulations mentally, consequently improving information retention (Liu & Lahoz, 2024) and learning takes place. It can be argued that this may also make learning enjoyable. While the ICM (2010) commends incorporating theory with practice, they recommend sequencing that enables students to acquire essential competencies for midwifery practice. In constructivist pedagogy, acquiring and applying knowledge occur concurrently; a student's application of knowledge signifies the occurrence of learning; thus, meaningful learning develops through authentic tasks. Constructivist theorists recognise that there is no knowledge "out there" that is independent of the knower; the only true knowledge is that which the learner constructs for himself or herself during the learning process (Dagar & Yadav, 2016). It may be argued that the separation of theory

and practice in the KCN curriculum may be contributing to the theory practice gap reported by all participants in this study.

6.6 Long classroom hours

Findings reveal that classroom sessions commence at 7:30 am to 5:00pm. Educators state that this is done to finish the content. Consequently, students complain of exhaustion due to long periods of sitting. In CBE, the focus is not on finishing the content rather, on achieving the outcomes, what the learner knows and can do (O' Sullivan & Bruce, 2014). Educators focus on what and how students are to learn. An obsession with coverage, too many topics taught with equal emphasis, overburdens learners, resulting in a failure to achieve deep engagement with any topic. Too much verbal information presented at once causes mental overload, and some information may not be processed because an individual's mental process only processes a limited amount of information at a given time (Mayer & Moreno, 2002). It also represents the educator's lack of concern for the students. Besides causing mental overload, one would expect that educators would automatically know that such long classroom hours would cause exhaustion hence reducing learners' ability to learn. Ignoring the impact of long classroom hours just because they want to finish content demonstrates educators' lack of understanding of CBE. This also demonstrates inappropriate use of time, engaging learners in hands on activities would not only ensure effective use of time but also that learning is taking place.

6.7 Skill practice

Findings indicate that students practice all the skills a week prior to clinical practice. This is massed learning, in which learners learn without significant interruption, as opposed to spaced learning, which involves studying the material with distinct time intervals between each study period. Spaced learning outperforms massed learning when it comes to long-term retention of study material. It applies to both motor skill development practice and studying for knowledge acquisition. Because the learner assesses what concepts have been learned when summarizing material or performing a procedure after a time delay. Spaced learning is associated with improved metacognition. It alerts the learner to material that has not been thoroughly learned, demanding additional attention. Summarising immediately after learning new material allows a

learner to easily recall concepts stored only in short-term memory (Weidman et al, 2015). Spaced practice is also associated with retrieval, which allows a learner to pull information from memory, resulting in long-term retention of information. Using spaced practice improves educational outcomes. Incorporating spaced practice into education is a cost-effective approach because learning becomes more durable in the same amount of time compared to massed practice, and it can lead to future savings because less time is spent relearning forgotten content (Kang, 2016). Spacing augments retention by increasing the likelihood that all repetitions are fully processed (Walsh et al, 2023).

Mass skill learning does not support learning; it is failed metacognition (Weidman et al, 2015). Although learning several skills at once may seem efficient, it results in short-term retention; therefore, distributing practice over time is preferable because it allows consolidation and programming of information in long-term memory, where it can be retrieved when needed (Kang, 2016; Walsh et al, 2023). Mass skill learning entails that students learn many skills of varying complexity in a short time, which is likely to result in high intrinsic cognitive load (Kardong-Edgren et al, 2019). It is recommended that learning tasks should be designed in a manner that the available working memory is used efficiently to maximise the return on mental effort investment by making effective use of the available working memory capacity. In order to free up working memory capacity and perhaps boost working resources allocated to intrinsic cognitive load, also known as germane processing, it is necessary to reduce unnecessary burden (Paas & van Merriënboer, 2020).

Secondly, having students' practice skills a week prior to clinical practicum compromises learning. Teaching learners several clinical skills as they begin to work on a new unit can result in significant cognitive overload. The goal of motor skill learning is to perform the skill accurately, quickly, and consistently over time (Oermann & Gaberson, 2014). Learning is a long-term behavioural change that allows for long-term retention and transfer to other contexts (Soderstrom & Bjork, 2015). Learners remember how to perform a skill or procedure, even if they have not done it in a while and can perform it in a different setting. Learning a skill differs from performing it; performance is temporary; the teacher observes the learner performing the skill in the laboratory and

assesses the student's ability to complete the series of required steps, mostly using a skills checklist. However, accurate performance of the skill in the laboratory may not represent having learned it (Oermann et al, 2016). Hence, learning should produce permanent changes in behaviour or knowledge for long-term retention and transfer. This may be achieved through practice (Campitell & Gobet, 2011), to facilitate learning and produce long-term behavioural changes (Williams & Hodges, 2023). Students must devote significant time and effort to learning new motor skills (Müssgens & Ullén, 2015), to improve retention and transfer of learning from training to real-world situations (Broadbent et al, 2015). Learners progress through the stages of motor skill learning, which include cognitive, understanding of what needs to be done, associative phase, gradually improving performance until movements are consistent, and autonomous phase, performing the skill automatically (Oermann & Gaberson, 2014). To advance through these levels, students must practice the skill repeatedly and receive specific, informative feedback on their performance. Deliberate practice is the repeated performance of intended cognitive or psychomotor skills in a focused domain, combined with rigorous skills assessment that provides learners with specific, informative feedback, resulting in increasingly better skill performance in a controlled setting. Deliberate practice allows students to avoid skill decay and develop their expertise ((Campitelli & Gobet, 2023). Repeated practice of skills allows for the development of students' proficiency, retention of skills, and transferability to other contexts (Oermann et al, 2015; Oermann et al., 2016; Bosse et al, 2015). It is also required for schema construction and automaticity to perform efficiently and learn new tasks (Weidman & Baker, 2015). A single competency validation with a simulator is insufficient to ensure skill mastery or retention (Gonzalez & Sole, 2014). This practice demonstrates poor planning for the teaching and learning of psychomotor skills. This seems to suggest lack of understanding of effective methods of learning psychomotor skills. Such practice cannot promote transfer of skills it is a mere waste of time.

The study reveals that the skills laboratory is not readily accessible to learners. This is a hindrance to learning. Skills laboratory facilities provide an effective and safe learning environment for students to acquire technical clinical skills. Skills laboratory training improves knowledge, skills, and behaviours. It creates a bridge between the university

and the clinical settings in which students integrate theory and practice and develop a reflective attitude (Ewertsson et al, 2015). In terms of technical and communicational aspects, skills laboratory training enables learners to perform procedural skills on patients faster, more accurately, and professionally than standard clinical training (Lund et al, 2012). Furthermore, skill laboratory training leads to successful OSCE results (Khan et al, 2017). Additionally, there is no qualified midwife at the skills laboratory to support students with their learning. Learning psychomotor skills necessitates the presence of an expert who can physically guide the learner to improve accuracy and reduce errors (Soderstrom & Bjork, 2015). Physical guidance, such as showing the learner what to do, and verbal prompts from the teacher improve performance during the initial instruction. It assists the learner in performing the skill correctly during the initial stage of learning (Oermann et al, 2016). Feedback enhances skill learning and has motivational properties that influence a learner's learning. The absence of an educator at the skills laboratory denies learners of expert assistance and feedback. An expert helps the learner to progress within his or her zone of proximal development (ZPD) (Sadideen & Kneebone, 2012). It can be argued that the learning of skills at KCN is not prioritised, and the skills laboratory is underutilised. It would be expected that with the large enrolment, the scarcity of resources at the health facilities, and compromised learner support, KCN would invest more into the skills laboratory and utilise it adequately.

6.8 Rotational placements

Findings indicate that students have four-week rotational placements of clinical practice at all placements regardless of the quantity and complexity of skills students are required to learn at the placements. Because some placements are likely to have fewer and less complex skills than others, assuming that four weeks is sufficient for learning at all placements is unreasonable. Firstly, rotational placement means that students have to build relationships with a new group of nurses. Ongoing changes of educators contribute to students' stress and impede the educator's ability to know the student nurses and their skills and to help them relate to the confusing stimuli-filled clinical learning environment. A new facility increases students' extraneous cognitive load, (Mulcock et al, 2017). Arguably, clinical rotations provide opportunities for learners nursing to collaborate with healthcare professionals from various disciplines. Such an exposure allows teamwork,

communication, and mutual understanding among healthcare providers, leading to improved patient care outcomes. Learners who participate in interprofessional collaboration during clinical rotations develop skills in effective communication, shared decision-making, and understanding the roles and responsibilities of different healthcare team members (Yaas et al, 2023). Secondly, some placements may have to learn more complex skills for the first time which may cause intrinsic load.

The CLT states that the more complex a skill is, the greater the intrinsic load (Sweller, 2010), especially when students lack prior knowledge of the skills. This practice ignores students' individual differences; educators appear to believe that all students are capable of learning all the skills in four weeks (Kardong-Edgren, et al, 2019). Each student has a ZPD, so they enter the placement at different levels, with different learning needs. Some students may need to stay at a placement longer than others to learn the skills (Sadideen & Kneebone, 2012). Furthermore, setting aside specific time for students' clinical practicum is not typical of competency-based teaching and learning. CBE is associated with time flexibility for students to acquire and consistently perform the specified competencies (Fullerton et al, 2013). CBE de-emphasises time-based training and focuses on the learning achieved rather than the time spent on an educational unit. Learners may progress at different rates, with some achieving threshold competencies faster than others. Greater emphasis is placed on the progression of abilities and performance measures (Frank et al, 2010). In fact, there is no limit to the number of years spent in training other than the definition of minimal and maximal times. Considering that the learners did not have deep engagement with content before the clinical experience, mandatory four weeks at every clinical placement may be insufficient for learning. Besides, in CBE progression to the next level is based on successful fulfilment of requirements at the current allocation not time spent at the allocation. This further emphasises the importance of having learners spend adequate time practicing skills at the skills laboratory.

6.9 Outcomes

Findings indicate that educational outcomes are clearly outlined in the curriculum document and students' modules. Action verbs are used for learning outcomes, consistent with CBE (Biggs & Tang, 2014). The inclusion of learning outcomes signifies that the major aim of the educational programme is to produce high quality learning outcomes in its graduates. Consequently, educators and senior midwives have high expectations from the graduates because they are trained at degree level rather than diploma as was the case previously. This concurs with Dlamini et al (2014) who found that nurses in practice had unreasonably high expectations from new graduates because they had a higher academic qualification. Similarly, Netshisaulu and Maputle (2018) found that experienced midwives expected newly graduated midwives to function as professionals; unfortunately, they expressed disappointment as graduates did not meet their expectations. Apparently KCN graduates perform below the set standards, they lack confidence, are deficient in clinical skills such as assessment of cervical dilatation, vacuum extraction, and cannot interpret the labour chart. Hence, 'drip stand midwives', and 'half baked' are cynical phrases commonly used by the clinical staff and educators respectively, a disparaging reference to their inadequate preparation for practice. Similar shortfalls were reported by Dlamini et al (2014; Yezengaw et al, 2024), who found that graduates demonstrated little confidence in their clinical competency after graduation. However, several studies found positive outcomes regarding degree nurses; Kutney et al (2013) found that having many nurses who hold a baccalaureate degree in nursing is significantly associated with improvements over time in rates of surgical patient mortality and failure to rescue. Hospitals with increased proportion of nurses had greater reductions in mortality than hospitals that do not (Aitken, 2014; Harrison et al, 2019; Yakusheva et al, 2014). Roets et al, (2016) reported that degree prepared nurses are needed by the health sector, hence, increasing lower cadre may challenge the quality of nursing care. Nurses with college degree possess higher level of reasoning, think critically and make sound clinical decisions when executing patient care (Zhang et al, 2022).

A newly graduated nurse is someone who has completed their nursing education and has up to 12 months of experience as a professional nurse. Typically, he/she has limited experience and expertise when entering the professional role, gradually developing the

competencies and confidence required for their new responsibilities over time (Aryeequaye et al, 2025). New graduates working in the hospital setting consistently express frustration and a sense of demoralisation due to the incongruence between their perceptions of nursing and the reality of nursing (Duchscher et al, 2021). Newly graduated nurses experience various challenges in their first year of practice such as; deficiency of clinical knowledge and confidence in skill performance among new graduates in the first 12 months of practice (Nafaji & Nasiri, 2023), unpleasant interactions, and a lack of knowledge affected their self-confidence, and that the shift from the supportive environment of a student to the autonomous role of a professional nurse can be daunting (Alharbi et al, 2023). lack of knowledge and confidence to make clinical decisions, caused stress for newly qualified nurses (Smythe & Carter, 2022), poor nurse-physician interactions, inadequate communication, leadership, and management skills (Sharma et al, 2021), lack of critical thinking and clinical/technical skills (Missen et al, 2016), overwhelming physical demands, social acceptance stress from colleagues, and poor adaptation to new working environment culture (Alkhaqani, 2022). Lack of sense of independence, commitment to patient care and inability to display in task sharing among newly qualified midwives (Netshisaulu & Maputle, 2018).

New graduates go through a transitional period during their first twelve months of professional practice. Transitioning from the role of nursing student to graduate practicing nurse is a challenging and multidimensional experience. The first six months of nursing practice are a critical transition phase that can be fraught with high levels of anxiety, theory-practice confusion, career disappointment and an increased tendency for errors (Patterson et al, 2017). In the first 2 to 8 weeks, new graduates undergo transition shock, an initial phase of their practice assimilation, which represents the official entry adjustment to their new reality. The transition shock experience is not just a professional experience, it is physical, social, cultural, developmental, spiritual and emotional (Duchscher et al, 2021). Nervousness, fear, lack of confidence, inability to perform some skills, finding the labour ward challenging and looking for support, were reported by Wiersma, Fenwick et al, (2012), as experiences of new graduates. However, Avis et al (2013), argue that although one is perceived as competent, there is no demarcation point in becoming confident to practice as a registered practitioner. This indicates that

deficiencies are usually corrected within a few months of qualifying. Senior midwives in this study confirmed that some graduates who received support, counselling and worked with good role models exhibited tremendous change with time**.** Charette et al (2022), found that 12- month transition programs are necessary for newly graduated nurses to expand their competence. Competency development continues beyond graduation, and graduate nurses require continuing professional development activities that are underpinned by pedagogical principles and the significance of reflection on and in action.

All graduates in this study perceived that they were well prepared for practice but admitted that they could not function independently although they were allocated full loads of clients like their senior counterparts. They were nervous and afraid, found it hard to work in the labour and delivery room, could not make decisions, found the workload heavy, looked for and valued the support of experienced midwives. The need for support was also confirmed by midwives in this study. Positive and supportive environment was essential for new graduate nurses to expand their competences (Charette et al, 2022; Cusack et al, 2024; Smythe & Carter, 2022).

The new graduate is regarded as an advanced beginner functioning at the level of a beginning staff nurse possessing full legal and professional responsibility for patients. He or she has anxiety about learning to perform new tasks, and frequently experiences excessive fatigue. They realise that the support system they had as students has ended and find themselves isolated in the face of significant responsibilities and problems. The advanced beginner is reliant on others, therefore, newly graduated nurses require intellectual, practical, emotional support, and appropriate feedback, to alleviate concerns about their task performance, ethical distress, fear, insecurity, and anxiety. The lack of a support system in their new role can lead to feelings of inadequacy and guilt, inner conflicts, disappointment, job dissatisfaction, and they may leave the profession entirely (Ebrahimi et al, 2016). This study revealed that many KCN graduates prefer to work with non-governmental organisations rather than providing bedside midwifery care.

A supportive environment facilitates post registration development, helps retain new graduates in practice and improves patient care (Doleman et al, 2025). A positive workplace culture that promotes psychological safety, inclusivity and career development

can significantly improve job satisfaction and retention among newly qualified nurses. A supportive approach cultivates resilience, loyalty and a strong sense of purpose among newly qualified nurses, all of which are critical to their retention. Retention of newly qualified nurses is essential for workforce sustainability and high-quality care (Burnell et al, 2025). In view of this, Hayton et al (2021), recommend programmes designed to support newly qualified nurses to build their competencies, rendering quality care, and retaining nurses for the profession. Newly qualified nurses require active learning opportunities to learn specialised skills including time management, problem solving and effective communication. This requires competent facilitators to observe, supervise and are willing to teach newly qualified nurses. Therefore, it is important to create learning environments that facilitate learning and learning processes that are valuable to competence development.

6.10 Minimum pre-registration requirements

Findings reveal that learners are mandated to achieve minimum pre-registration requirements in addition to the ICM essential core competencies. The same applies to student midwives in Zimbabwe (Goshomi, 2019), Australia (Licqurish & Seibold, 2013) and the United Kingdom (NMC, 2019). However, fulfilment of minimum council requirements does not signify the achievement of competency (Fullerton et al, 2011). The practice contradicts the concept of CBE because it requires learners to just keep a record of the procedures performed during the clinical practicum disregarding the quality of performance. This is a requirement from the NMCM, obliges educators to use valid and reliable formative and summative assessment methods to measure students' performance progress in learning related to knowledge, skills, and attitudes (NMCM, 2013). An obsession with numbers may impact negatively on the quality of students' clinical learning experience. It may cause a lot of stress among learners in their management of the theoretical and clinical components of the course. In Malawi, the achievement of the minimum pre-registration requirements is a pre-requisite for the licensure examination. It may be argued that the regulatory body also lacks understanding of CBE because they emphasise on valid and reliable formative and summative assessment but still insist on achievement of minimum requirements for licensure. The ICM (2012) requires the completion of all the learning requirements and demonstration of competency in full

scope midwifery practice pre-registration rather than a completion of specified numbers. Therefore, a student cannot be considered competent based on his or her achievement of specified numbers. Fullerton et al (2013) assert that the competency-based programme entails that it prepares graduates who can meet the expected scope of midwifery practice. According to the ICM (2017), midwives are recognised as responsible and accountable professionals who collaborate with women. They provide the support, care, and guidance that women need during pregnancy, labour, and the postpartum period. This care consists of taking precautions, encouraging a healthy birth, identifying issues in both the mother and the child, getting medical attention or other help as needed, and responding to emergencies.

6.11 Minimum pre-registration requirements unachievable

The study reveals that the minimum requirements are unachievable, especially the six vacuum extraction deliveries. This is attributed to the large student enrolment, compounded with unavailability of the learning experiences at some placements, due to low caseloads and the fact that other maternity units stopped the procedure due to its associated complications on women and the new-born. Consequently, learners need extra time and placement to achieve the numbers beyond the academic calendar. This is time wasteful and poses unnecessarily financial burden on learners considering that achievement of minimum requirements does not have any impact on achievement of competence. It is noteworthy, that Mzuzu graduates experience the same challenge despite their enrolment being less than KCN's. This finding supports Licqurish and Seibold (2013), who found that midwifery students in Australia could not achieve the minimum requirements timely. They needed an additional placement to meet the requirements for licensure examinations, despite having been assessed and declared to have passed their final placement, because they couldn't register without it. The findings reveal that Mzuzu University learners also failed to achieve the minimum pre-registration requirements timely. It may be argued that this challenge is real, and may not necessarily be due to the large enrolment at KCN as was reported by some participants in this study. Placing much emphasis on fulfilment of prescribed numbers in a CBE programme may confuse learners as to what is really important in their learning between quality and quantity.

Students dishonest about fulfilment of minimum pre-registration requirements

Findings reveal that some students from both institutions, lie and fabricate cases to fulfil the pre-registration requirements within the stipulated timeframe to qualify for the licensure examination. This is academic dishonesty which has also been reported by Sadeghi and Bagheri (2017) who found that some student nurses at Rafsanjan University of Medical Sciences in Iran were dishonest in their work. They copied other students' homework and presented information of dead patients to educators as if the patient was still alive. Taradi et al (2012**)** found that third- and fifth-year medical students from four Croatian Schools of Medicine admitted engaging in cheating during examinations and regarded the behaviour as acceptable. Other findings include documenting false findings (Bultas et al, 2017), and developing a personal relationship with the nursing professor to gain information about the test (Krueger, 2014). This is academic dishonesty, a purposeful act or acts of deception in reference to academic work; behaviours that challenge academic integrity because they do not comply with academic rules, norms, or expectations (He et al, 2024). Academic dishonesty in nursing degrees has become common, this has created concerns about its impact on the professional practice of graduate registered nurses (Allen et al, 2017). Dishonesty among nursing students can be detrimental to quality patient care and outcomes. Dishonesty can endanger quality patient care and outcomes; the health care worker's honesty is crucial in maintaining patient safety. It can be argued that professionally, it is difficult to work efficiently with dishonest health care workers. Students' dishonest behaviour may lay the groundwork for future patterns of dishonest behaviour. Academic dishonesty reflects poor role modelling, which has a significant impact on behaviour (McClung et al, 2021). Students may emulate the dishonest behaviour by educators and staff members especially when such behaviour is ignored or not reported. Rafati et al (2020) found that clinical stress makes students increasingly vulnerable to dishonest clinical behaviours. Additionally, they found that observing clinical dishonesty had a significant positive relationship with dishonest clinical performance. That is, the more people witness their co-workers' unethical behaviour, the more they are likely to do it. This is consistent with Bandura's social learning theory. The people with whom one regularly associates define the types of behaviour that one will repeatedly observe and hence learn most thoroughly (Hendy et al,

2021). This suggests that learners may learn to engage in academic dishonesty by observing their peers or qualified midwives cheat without getting caught. It also suggests that students can also learn academic honesty by observing others within the profession. Therefore, educators and professional midwives must strive to uphold ethical and professional culture at all times. Researchers on academic dishonesty have reported several factors for dishonesty among students such as; academic pressure, competition for higher grades, and a grade point average sufficient for graduate study (Allen et al, 2017), students' age of the male gender (Liu & Alias, 2022; Hendy et al, 2021), because male students may exhibit a higher tendency toward risk-taking behaviours, including cheating. Lower self-esteem because self-esteem affects social interactions, academic performance, career success, mental and physical health, and antisocial behaviours. High self-esteem is generally associated with happiness, academic achievement, and overall life satisfaction (Rahmati et al, 2025). Rafati et al (2020) found that the highest frequency of clinical dishonesty was observed among fourth-year students, which could be related to their more frequent presence in the clinical setting, more workload, and less supervision by instructors, and being in stressful environments. This finding is consistent with findings in this study, fourth year students were dishonest about assisted vaginal births like vacuum extraction in their quest to fulfil minimum pre-registration requirements. Academic dishonesty affects the formation of professional identity in nursing students, therefore, academic dishonesty is related to professional dishonesty and ethical professional behaviours Clinical dishonesty may become a recurring pattern of professional behaviour and affect patient health and safety (Rafati et al, 2020; Homayouni, et a, 2024; Macale et al, 2017; He et al, 2024; Lynch et al, 2017; Sharma et al, 2020). A study by Krueger (2014) revealed that more than half of the nursing students reported academic dishonesty in the classroom and almost the same number of cheating in the clinical environment, a reflection of the unprofessional behaviour of the students in the clinical environment. An environment of mutual trust and respect that allows students to make mistakes in a safe environment while receiving appropriate guidance and feedback lessens the influence of factors that motivate students to cheat (Garbeson et al, 2015). Educators are encouraged to remind students of the ethical nature of nursing practice and nurses' obligation to adhere to professional codes of conduct and standards

of practice (Krueger, 2014). It may be argued that this may be due to the pressure learners had about the fulfilment of the minimum requirements, knowing that their failure to fulfil the numbers meant that they would have to put in extra time outside the academic calendar. Rafati et al (2020) recommend that educators should teach students to use effective strategies to cope with clinical stresses to ensure patients' health. It is important to understand that student behaviour reflects the institutional climate hence, it is essential to continually educate students about ethical standards and appropriate disciplinary actions related to academic dishonesty (Apatic et al, 2024). It may be argued that this may be due to the pressure learners had about the fulfilment of the minimum requirements, knowing that their failure to fulfil the numbers meant that they would have to put in extra time outside the academic calendar.

6.12 Teaching and learning strategies

As stated earlier, a systematic review of the literature on effective teaching and learning strategies for skill acquisition revealed that flipped classroom (Aksoy et al, 2021), problem based learning (Salari et al 2018), team based learning (Tsai et al 2023; Ulfa et al 2021), face to face simulation and e simulation (Cooper et al, 2015), simulation based zoom based learning (Chan et al, 2024), Web-based learning (Barisone et al, 2019), as effective teaching and learning strategies. The learning should take place in a skills laboratory (Ewertsson et al 2015; Ozturk et al 2020 ;) using technology (Ozturk et al 2020) and hands-on experience (Sharma et al 2019). Time constraints hinder the utilisation of self-directed simulation learning, and this challenge threatens the acquisition of clinical skills and knowledge during the training of student nurses. Adequate clinical cases, preceptors showing different procedures, students' confidence Implementing logbooks, selecting clinical sites, enhancing the confidence of students, and clinical preceptor support are important to improve the clinical competence of students (Yezengaw et al 2024). Using teaching method combined with situational awareness and case-based seminars (Sun et al, 2023).

Findings in this study reveal that the lecture method is dominantly used during classroom sessions despite having interactive teaching and learning strategies prescribed in the curriculum document, educators having knowledge of them and the nature of the programme. During lectures, the teacher gives all the information from start to end.

Students are just passive listeners and there is little interaction. Students easily get distracted and miss many elements. A teaching approach should focus at reaching every students and hence should provide them a good mix of visual, auditory, and kinaesthetic situations to learn. Traditional didactic lectures may just cater to lower levels of cognitive abilities such as acquiring only the knowledge component (Nanjundaiah & Anuradha, 2024). Findings reveal that educators opt for the lecture method to finish the content. This is a content- or teacher-centred approach, distinguished by a focus on the content to be taught. This contrasts with the learner-centred or constructivist learning model approach, which focuses on the student and ensures appropriate learning occurs (Priyamvada, 2018). Educators who adopt the content centred approach transmit information to students and supply notes, as was reported by some educators in this study. Educators opt for the lecture method to finish the content. This is a content- or teacher-centred approach, distinguished by a focus on the content to be taught. This contrasts with the learner-centred or constructivist learning model approach, which focuses on the student and ensures appropriate learning occurs. Educators who adopt the content centred approach transmit information to students and supply notes, as was reported by some educators in this study.

Educators' teaching approaches expose their conceptions of teaching and learning, their meaning of teaching and learning, and their perceptions of the roles of teacher and learners. Educators who use the content or teacher-centred approach are very active in the transfer of knowledge to students, whereas students take a very passive role in knowledge construction. Learning is defined as remembering and memorising (Bas, 2016; Carstensen et al, 2018). The constructivist viewpoint emphasises the value of experience and active learning processes that promote discovery, collaboration, and critical thinking, with the teacher acting as a counsellor and the student as an active participant (Priyamvada, 2018). The educator's goal is to help students further develop the world view or conception that they already have about their field of study. The educator focuses on what the students are doing in the teaching and learning process as they construct their own knowledge. A student-centred strategy is required because it is the students' responsibility to construct and re-construct their knowledge to further develop their conceptions and generate a new world view or conception. Encouragement

of an active student role indicates higher teaching conceptions. Hence, learners' approaches to learning reflect the educator's learning conceptions, which can be quantitative or qualitative. Quantitative conceptions of learning include information acquisition and restructuring, whereas qualitative conceptions include meaning comprehension and personal change (Alamdarloo et al, 2013; Prosser & Trigwell, 2014). Qualitative concepts are linked to a more in-depth approach to learning. The teacher's teaching style influences the learners' learning style. The approach learners take to learning is related to their awareness of their learning environment **(**Uiboleht et al, 2018). Based on this, it can be argued that educators in this study have low conceptions of teaching which discourage the development of critical thinking in students. Hence, students may have quantitative learning conceptions producing low learning outcomes. This may be another contributing factor to the perceived poor graduates' performance.

Secondly, this study found that educators opt for the lecture method because they find it difficult to demonstrate to a large group of students in a classroom setting. This finding supports Matoti and Lenong (2018) and Albertyn et al (2016) who found that educators have problems with large group teaching, and they are unable to be creative in lesson design and presentations, hence unable to engage students. This goes back to poor implementation of change; these educators were abruptly introduced to large groups teaching which would be a challenge. On the other hand, it seems that educators lacked understanding as to what is involved in CBE teaching, because it can be argued that large groups provide an opportunity for interactive teaching methods such as problem based learning. Although large group lecturing may save time and manpower; but higher level of critical thinking, understanding and engagement between educator and students is only possible during face to face, that is, in small group teaching. While the teacher's skill and competency are important, smaller classes are more effective for developing higher-level cognitive skills, increasing contact between students and staff, and addressing the needs of students with low motivation and specific learning needs (Saiyadi et al, 2018; Laitsch et al, 2021). Consequently, rather than the size of the classes, more emphasis should be on a teacher's ability to instruct in college and university classes. A large class reduces students' sense of personal responsibility, activity, and the possibility of the educator personally knowing each student and tailoring instruction to the individual student. The

effectiveness of teaching is determined by what the teacher does, not the size of the class. In CBE the outcomes determine the teaching strategies rather than the content and the number of students (Tacettin & Mustafa, 2021).

Findings from the curriculum document indicate simulation as one of the recommended teaching and learning strategies. This finding is consistent with several researchers who found that simulation is an effective teaching and learning approach for skill acquisition. Alconero-Camarero et al (2021) reported that the satisfaction of students with simulation was significantly greater in medium fidelity simulation than high fidelity simulation. Simulation is beneficial for learning in all its forms, but for the acquisition of basic skills, and at a lower cost, medium fidelity simulation proves to be effective. However, high-fidelity is not always better than medium-fidelity as this depends on the student's level of knowledge and clinical experience. High fidelity perinatal simulation training was reported to be a positive learning method that increased students' competence and confidence. As High-Fidelity perinatal simulation training constitutes a helpful learning experience in midwifery it could have a positive influence on maternal and neonatal outcomes (Vermeulen et al, 2017). Inclusion of simulation technology to the Critical Care Nursing course was regarded as a positive learning experience by students and that it is an effective method for the development of technical and nontechnical nursing skills (Albaqawi et al, 2020). Simulation based zoom learning showed improvement in perceived creative thinking, perceptions of the learning environment and clinical decision-making Chan et al (2024). Hence, both face to face simulation and e simulation are effective teaching strategies (Cooper et al, 2015). Simulation is widely used as a valuable teaching strategy in clinical teaching, learning, and assessing students at undergraduate, postgraduate, and long-term education levels (Martins et al, 2018).

Using standardised patients in simulation training allows novice nursing students to meet a real patient and to recognize their own true self-efficacy (Karabacak et al, 2019). Standardised patients allow students to practice various procedures in a controlled setting. Simulation-based education is a valuable teaching and learning modality, for final year students who are transitioning to real-life clinical practice. Student-centred simulation-based learning experiences can cultivate professional development and support learners

in their transition from university student to healthcare professional (Moloney et al, 2022). To facilitate critical thinking disposition, improve general self-efficacy, and enhance learning motivation a simulation-based practicum based on the Jeffries Simulation Framework would be an effective learning method (Park et al, 2017). In line with this, Zarifsanaiey et al (2016) found that students' performance level was increased by the application of integrated simulation and critical thinking strategies. It is a deep learning guide for the learner in order to think and explore the knowledge, solve problems and think critically. Simulation is a helpful learning experience in midwifery with a positive influence on maternal and neonatal outcomes. However, time constraints hinder the utilisation of self-directed simulation learning and this challenge threatens the acquisition of clinical skills and knowledge during the training of student nurses (Phehla et al, 2024).

Simulations promote constructivist learning by engaging participants' psychomotor, affective, and cognitive learning domains, resulting in a richer and more memorable experience (Shapira-Lishchinsky, 2014). In simulation, learners may encounter ethical quandaries that prompt them to react and act on problems as if they were in real life. Role playing allows students to engage in a high level of personal involvement. Role-playing during simulations actively engages students in the learning process leaving a lasting impression. Simulation enables learners to learn from peer feedback as they role-play various functions, and by observing their behaviour recorded by a video camera (Shapira-Lishchinsky, 2014), such feedback is used to construct new learning for participation in future simulations. High- and low-fidelity simulation is a key component of CBE and assessment. Standardised patients are used to teach clinical skills, low fidelity models are used to teach simple technical skills, and high-fidelity models are used to teach higher order skills (Nousiainen et al, 2016). High Fidelity Human Patient Simulators (HFHPS) enable educators to incorporate Kolb's four-phase experiential learning to teach obstetric emergencies. For the concrete experience HFHPS allows student midwives to experience and manage real-life emergencies, provides students with opportunities for reflective observations and reflection on the experience, and allows student midwives to think about the learning experience and act or try out what was learned (Amod & Brysiewicz, 2019).

Simulation is frequently used in small groups, which encourages the use of collective working memory. Because learners collaborate, they gain working memory from the group collective memory, which helps to alleviate the limitations of individual working memory. During a scenario collaboration, the learners borrow information from each other's long-term memory and can organise this information from their personal working memory into their individual long-term memory (Josephsen, 2015). During simulation students use multiple perspectives and modes of learning. It combines cognitive, auditory, visual, and tactile learning modes. A learner's engagement in three cognitive processes: selecting relevant words for verbal processing and relevant images for visual processing, organising words into a comprehensible verbal model, organising images into an intelligible visual model, and integrating corresponding components of the verbal and visual models, results in active learning. When both auditory and visual working memory are used, effective cognitive capacity increases (Elendu et al, 2024).

Simulation can be done using electronic platforms. Web-based learning effectively reduced the gap between theory and practice. It was effective for learning technical-practical skills, improve students' conceptual learning, ensuring high standards of care and patient safety, especially due to the increasing complexity of care (Barisone et al, 2019). Simulation based zoom learning showed improvement in perceived creative thinking, perceptions of the learning environment and clinical decision-making (Chan et al, 2024). And face to face simulation and e simulation were effective strategies to teach patient deterioration management Cooper et al (2015). However, the use of electronic platforms may be a challenge in Malawian context due to perpetual network challenges and financial constraints. In many instances students lack appropriate devices for e learning.

Simulation situates learning in compound, realistic, and relevant settings, allowing learners to perform complex performance demands in the clinical setting. Therefore, educators must construct scenarios that are applicable to clinical practice challenges to provide learners with opportunities to experience a variety of rare clinical crises and emergencies. Taking learners out of the classroom and placing them in a simulated delivery room with a patient, equipment, support staff, and a scenario design, challenges

the learner in several domains while also providing concrete learning opportunities in realistic contexts (Elendu et al, 2024). According to situated cognitivists, everyday learning, or learning as a function of being in the world, occurs within a socially and culturally informed context; this context or situation shapes both knower and knowledge (Pyrko et al, 2017).

Situated cognition assumes that learning occurs in a social setting through communication with others in the community (Pyrko et al, 2017). Learning evolves into a process of reflecting, interpreting, and negotiating meaning among community members. Situated cognition considers thinking to be embedded in context and draws on social, cultural, and material resources that are never the same for any two people or contexts. Hence, cognitive processes involve relationships between people and situations; they are not solely in one's mind. Therefore, situated learning is commonly referred to as enculturation, or adopting the norms, behaviours, skills, beliefs, language, and attitudes of a particular community (Zamiri & Esmaeili, 2024). As social negotiation is a fundamental part of learning, simulation educators recreate the social context of the clinical setting. This entails critical interactions and relationships with clients, staff, and peers. Furthermore, simulation based learning supports deliberate practice, where students repeatedly perform tasks and receive immediate feedback. Structured debriefing sessions following simulations provide opportunities for reflection, discussion, and learning from mistakes, reinforcing learning outcomes further. Feedback is crucial for identifying areas for improvement and enhancing clinical competence. This encourages peer and instructor collaboration during debriefing to learn from the simulation experience (Elendu et al, 2024). Allowing learners to reflect on extraordinary incidents related to the experience and encouraging them to revisit their knowledge, skills, or behaviours in this area. This encourages learners to identify the strengths and weaknesses of their knowledge and skill base, allowing them to engage in specific, intrinsically motivated learning activities tailored to their specific learning needs (Grant et al, 2017). Reflection generates a new idea or modifies an existing abstract concept, indicating that the person has learned from their experience (McLeod, 2017).

Cognitive load theory also has distinct application to nursing simulation design and efficacy, because there are many aspects of simulation that add to extraneous, intrinsic, germane, and mental cognitive loads. A simulation experience mostly includes several items requiring the learner's attention and ability to discern element relevance for the situation. Simulation is fraught with mental load issues based in the emotional aspect of many simulations and the occasional high-stakes outcomes of successfully or unsuccessfully managing the simulation environment. Because simulation contributes to cognitive overload, it is important that simulation educators examine their educational practices and simulation design for efficacy. Simulation is frequently used in small groups, which encourages the use of collective working memory. Because learners collaborate, they gain working memory from the group collective memory, which helps to alleviate the limitations of individual working memory. During a scenario collaboration, the learners borrow information from each other's long-term memory and can organise this information from their personal working memory into their individual long-term memory (Josephsen, 2015). However, cognitive load theory provides the simulation educator practical instructional strategies that can reduce cognitive load, such as scaffolding, worked-out examples, self-explanation, and use of collective memory (Sando et al, 2013). Like CBE, simulation incorporates elements of behaviourist theories (Brightwell & Grant, 2013). Behaviourism is more concerned with how the right outcome can be conditioned and repeated rather than with how the problem can be solved. Behaviourism plays a role in psychomotor clinical skill acquisition, and behaviourist educational methods are appropriate for psychomotor skill acquisition in medical education. The concept of skill automaticity underpins the effectiveness of behaviourist pedagogy in psychomotor skill acquisition (Arja et al, 2019**).** Behaviourism is criticised for its lack of focus on judgment, critical thinking, and analysis. Therefore, because behaviourism does not promote the development of higher-level thinking required for professional practice, the influence of cognitivist and constructivist philosophies is valuable in simulation design (Erlam et al, 2017). Behavioural educational perspectives are used in conjunction with other learning theories, particularly cognitive theory, rather than alone, and they are an effective adjunct to other learning perspectives (Saylor, 2014).

However, Elendu et al (2024) recommend that for effective learning, educators should be trained on using simulation-based assessment tools and data collection methods to evaluate learner performance and track educational outcomes. Training of educators should include development of scenarios, debriefing techniques, learner assessment, and simulation technology integration. This equips educators with pedagogical expertise and ensures that simulation-based education aligns with educational goals, promotes active learning, and enhances learner engagement. It may be argued that training of educators in an important aspect considering that simulation based teaching and learning can be done using platforms like zoom. Additionally, time constraints hinder the utilisation of self-directed simulation learning which threatens the acquisition of clinical skills and knowledge during the training of student nurses (Phehla et al 2024).

The curriculum prescribes problem based learning (PBL) as a teaching and learning strategy in this is progamme. PBL is regarded as the most innovative instructional strategy used in health sciences education. It is effective in problem solving, self-directed learning and collaborative skills (Rakhudu et al, 2016). The purpose of PBL process is to empower students to select their goals and learning experiences, consequently cultivating the spirit of self-reflection within students during their learning (Compton et al, 2020), to use a contextualised problem to encourage learners to actively seek relevant knowledge using all possible resources, to equip students with hands-on learning approaches so that they achieve their future responsibilities and develop self-directed learning as a lifelong knowledge-seeking habit (Zhang, 2014). PBL is student centered hence it fosters active learning, improved understanding, retention and development of lifelong learning skills. Allows students to develop appropriate generic skills for their future practice. It is fun for both students and educators and requires the engagement of all students in the learning process, resulting in deep learning (Srilatha et al, 2022). Studies done on problem based learning revealed that; the strategy is preferred over conventional strategy for instruction in paediatric nursing. PBL instructional strategy enhances students' overall and higher-order performances. The use of PBL strategies has the potential to significantly enhance students' achievement (Salari et al, 2018; Loyens et al, 2015). PBL has a greater impact on critical thinking skills learning of nursing students compared with traditional lectures, focuses on engaging students in group discussions to address complex clinical problems.

A process that involves analysing problems, setting objectives, gathering information, summarising ideas, and reflecting on problem-solving experiences (Wei et al, 2024; Rakhudu et al, 2016), and in developing knowledge of nursing students (Nasim et al, 2022; Manyisa & Khunou, 2024). Through PBL students can improve communication skills and address problems such as poor listening skills, and lack of acknowledgement of the importance of psychology, thus improving the ability of nursing students to express themselves, acquire knowledge on communication psychology, promote personnel exchanges and cooperation among several medical disciplines, and improve their professional communication competencies (Li et al, 2019). PBL impacts students' knowledge, attitude, and perception toward patient safety significantly unlike conventional teaching methods (Jamshidi et al, 2021). Additionally, PBL can effectively be combined with traditional teaching method to facilitate effective teaching and learning process (Mahariba et al, 2024).

PBL lies in constructivist and self-directed learning theories, whose idea is that students learn more effectively when they engage in solving authentic problems, reflect on their learning processes, and collaborate with peers, skills that are essential for clinical nursing practice (Xue et al, 2025). It is grounded in the values that knowledge is constructed and shaped in a social context and uses problem cases as vehicles for learning (Compton et al, 2020). It is surprising that although the curriculum stipulated these teaching and learning strategies, educators did not utilise them yet expected graduates to perform highly as qualified midwives. It may be argued that the educators do not understand their role regarding the curriculum. Educators interpret plan, implement the curriculum through teaching and evaluate it. They make recommendations which when enshrined in the curriculum can make learners realise their dreams after some instruction (Katsuna & Shikalepo, 2023). Regardless of the lack of their involvement in the curriculum change, educators who understand their role should strive to do what is expected of them.

Findings indicate that midwives and educators demonstrate skills to students on real clients during clinical practicum. Demonstration is linked to cognitive apprenticeship approaches that emphasise enculturating students into authentic practices through activity

and social interaction. During instruction, the learner models and replicates the teacher's skills and behaviours toward competency in a safe environment. Observing the skill being performed allows the learner to mentally process the skill and gather information on how to perform it (Oermann et al, 2016). Learner performance is higher when skills are learned from a skilled person. Learning through observation influences the acquisition of a motor skill through attention, retention, reproduction, and motivation. Attention is the behaviours to which the learner must pay attention when observing, retention means that the observed behaviours are stored in the memory as symbols through schemata and verbalisation. Reproduction means that the stored information or observed and learned behaviours are reproduced. Motivation is the demonstrative behaviour that learners display out of a necessity under certain situational conditions (Han et al, 2022). This suggests that it is essential that educators ensure that they are highly skilled. When students are learning to perform psychomotor skills, the presence of a skilled educator is essential.

As stated earlier, other effective teaching and learning strategies in CBE, which are not in the curriculum but were identified from the systematic review, include the flipped classroom, team based learning (TBL), hands-on experience, repeating practices, using a teaching methods with situational awareness and effective use of the clinical skills laboratory, providing logbooks, adequate clinical cases, and preceptors showing different procedures for the development of students' confidence.

The flipped classroom is an active learning method that encourages higher-order thinking and active participation from students (Rodríguez et al, 2019). The flipped class model is consistent with the constructivist view, whereby learners observe the educational content prior to the class, attend the lesson with eagerness, and participate in the learning activities provided by the educator. The significance of flipped instruction is turning class time into a workshop where learners have the opportunity to comment on educational content, evaluate their learning, and interact with other students through hands-on and group activities. The teacher acts as a guide during the session, encouraging students practice more and conduct group activities (Liu et al, 2023). This pedagogical approach allows students to direct their learning and to develop a set of interconnecting

fundamental skills, such as problem solving, confidence, flexibility, anticipation, putting ideas into context, and reflecting on different perspectives that promote critical thinking and development of creativity (Rodríguez et al, 2019). Research done on flipped classroom has revealed the effectiveness of the approach for students' learning such as: improving urinary system knowledge and skill level, and for the motivation and learning strategies of nursing students (Aksoy & Gurdogan, 2021). Students had the perception of having developed creative and critical thinking skills and social awareness throughout the flipped classroom methodology; they were extremely satisfied with this teaching method and recommended implementing it as a regular activity of the curriculum; better learning results were obtained using this method than with traditional learning (Rodriguez et al, 2019); student's grades in the flipped class were higher than in the lecture method (Liu et al, 2023; Mengesha et al, 2024); can improve teacher-student interaction, facilitate deep learning through classroom learning activities, increases learners' motivation and desire for deeper learning. However, in their study Khanova et al (2015) found that the cumulative workload of multiple concurrent flipped courses quickly becomes overwhelming and stressful to students. An unmanageable volume of pre-class learning may compromise students pre-class preparation, preventing them from properly engaging in classroom learning and eventually undermining the pedagogical model. Additionally, Moffett (2015) found that educators may need support to understand the learning theories and pedagogical philosophies that underpin the flipped approach, and guiding principles for the development of instructional resources, identifying suitable active learning activities, accurate estimation of pre-class preparation time, and the transformation of the classroom from a content-focused to a learner-centred environment. Nonetheless, flipped classroom can be an effective student-centered teaching strategy when properly planned and implemented for higher education. In medical colleges, it can be incorporated as one of the teaching–learning methodologies to teach must know topics (Nanjundaiah & Anuradha, 2024).

Team based learning (TBL) is another effective teaching and learning strategy for skill acquisition. It is a cooperative and collaborative instructional approach intended to deepen student's learning (Roossien et al, 2022). TBL is associated with cognitive out comes and retention of knowledge unlike the lecture. Students exposed to TBL perform

better in theoretical exams when compared to lecture. By actively participating in team discussions and problem-solving activities, students engage in deep processing and explanation of information, which leads to improved understanding, retention, and application of knowledge. Compared to lecture, TBL is associated with higher levels of satisfaction, positive attitudes, and increased motivation for learning (Alizadeh et al, 2024). It encourages students to apply their knowledge to solve practical problems whereas lecture based learning makes students to depend passively on acceptance of knowledge (Bingjie et al, 2022). TBL focuses on the learning enthusiasm, self-study ability, thinking ability, and communication skills of students (Lang et al, 2019). It cultivates independent and life-long learning skills. This is because peers as well as the educator, provide the necessary cognitive support required for learner self-evaluation and improvement in study skills over time (Odongo & Talbert-Slagle, 2019). In nursing education, TBL is effective for clinical competence skills, communication competence, and self-leadership than the lecture (Lee, 2018). In midwifery, TBL was found to be an effective active learning strategy to improve knowledge of postpartum haemorrhage of midwifery students before clinical practice exposure (Ulfa et al, 2021). The TBL approach is as efficient as the PBL and flipped classroom strategies (Tsai et al, 2023). Kibble et al (2016) recommend TBL in large enrolment classes.

The underpinning learning theory for TBL is constructivist experiential learning theory which assumes that learners activate previous learning, while undergoing processes of assimilation and accommodation of new information (Jackson & Otaki, 2023; Roossien et al, 2022). From a perspective of social constructionism, TBL is a process of active adaptation, where a small group of students learn together through their social interactions. The focus changes from the individual as a learner to learning as participation in the social world. In TBL, Kolb's experiential learning cycle starts with hands on learning experiences in a safe environment followed by guided reflections with skilled educators, then abstract conceptualisation where the students adjust their mental models, and lastly active experimentation where the students test their modified mental models (Jackson & Otaki, 2023). In TBL the principles of the social constructivist learning theory applies; learning is a constructive, cumulative, self-directed, goal-

oriented, situated, cooperative and individually distinct process of knowledge acquisition, meaning making and skills development (Roossien et al, 2022).

The learning should take place in a skills laboratory. The clinical skills laboratory (CSL) acts like a bridge between the university and clinical settings (Ewertsson et al 2015). Hands on skills practice in laboratory and supervised clinical practice during clinical placements are associated with high confidence for basic clinical midwifery skills amongst students (Sharma et al 2019). A fully-equipped laboratory is extremely important to the efficacy of education. Students prepare themselves for clinical practice by performing basic nursing practices at laboratories during preclinical period. Consequently, students' clinical anxieties are minimised, patient safety is maximised and patient harm is prevented. Additionally, repeated learning in the CSL prepares students for their practice in clinical settings. Repeating practice and feedback affects students' competence contributes to improving students' skills and self-confidence (Ozturk et al, 2020). Repetitive practice is critical for building strength memory and safeguarding that skills are retained over time (Elendu et al, 2024). Learning in the CSL and clinical setting takes place over time giving students the opportunity to reflect and evaluate different ways of performing procedures. It is recommended that supervision of students during their practice must be based on each student's individual performing of skills. The purpose of supervision is to integrate reflection and probing questions about the students' rationale of skills and actions in different patient care situations. Students develop their critical thinking and the supervisor gains an increased understanding of the student's clinical competence, and also learn new knowledge that could influence patient care. Therefore, it is important to deepen cooperation between the CSL and clinical settings to improve supervisors' understanding of the students' learning process and thus increase the students' ability to transfer knowledge (Ewertsson et al, 2015). Hands on skill practice in CSL is important for learning (Sharma et al, 2019). Hands-on practice is crucial for building proficiency and confidence (Elendu et al, 2024).

Situation awareness which can be combined with other teaching methods like case based learning and simulation. It is insufficient to learn pathophysiology, diseases, pharmacology, and nursing skills in a nursing program. Current nurses need adequate

preparation to combine that knowledge with the ability to notice delicate changes, review and interpret patient data, and respond quickly to prevent adverse patient events (Lee & McNair, 2024). By identifying, processing and understanding what is going on around them, students can plan ahead with greater knowledge (Gregory et al, 2015). Nurses with a high level of SA tend to have a better ability to predict what will happen to patients, to think about why events happened or will happen and to plan what they can do to curtail the damage and prevent blunders in patient care, and simulation based education was found to be useful in helping nursing students to cultivate situational awareness (Primiambodo et al, 2022). It can be argued that having midwives with situational awareness skills would be beneficial in midwifery practice in Malawi considering the unavailability of obstetricians in rural health facilities and maternal and new-born care is solely in the hands of midwives.

For effective learning and skill acquisition in CBE, students need adequate clinical cases, selecting clinical sites and educators showing them different procedures. Students with adequate clinical cases in practice placement were found to have increased clinical practice competence than students with few clinical cases in practice placements. (Yezengaw et al, 2024; Fikre, 2016). In this study, it was also found that some health facilities lacked clinical cases.

These findings reveal that not only do educators ignore the use of teaching and learning strategies prescribed in the curriculum, but also several effective learning strategies are missing in the curriculum. Hence, the poor performance of graduates may be a reflection of use of ineffective teaching and learning strategies. Apparently, even the people who brought the curriculum change were not adequately knowledgeable about CBE. The same may apply to the NMCM because as a regulatory body, they did not identify the gaps and approved the curriculum.

Findings reveal that some midwives get confused when students of different levels in the programme are allocated in one room for their practicum. This supports Daniels et al's (2014) findings that nurses had difficulties with supervision of students who were at different levels of their training. Arguably this presents a favourable environment for near- peer teaching among students thereby reducing the midwives' workload. Due to

increased cognitive and social similarities with their tutees, near peer teachers may be capable of effective delivery of course material (Tayler et al, 2015). Peer and near-peer teaching reduce educator's teaching demands and helps to sustain quality teaching in resource-constrained settings. Near-peer teachers teach at the students' cognitive level, practice peer feedback, and develop leadership and teaching skills. Hence, the students learn in a secure and comfortable setting. For junior health professional students, near-peer teaching may impact positively on their self-efficacy beliefs related to clinical skills, interpersonal skills and critical thinking, areas crucial to safe quality healthcare. For senior health professional students, near-peer teaching may enhance their self-efficacy in teaching, this prepares them for educating patients, other health professionals and students (Pierce et al, 2024).

Sociocultural learning theory is the underpinning theory of peer-learning. The theory assumes that the learner never, or rarely, learns in a vacuum but is rooted in a social space and in interaction with others; teachers and peers. This social interaction can have positive and negative implications, which the designer of a learning activity must take into account. It helps prepare students become professional nurses through personal development and professional development but a malfunctioning group dynamic causes frustration, lack of motivation, and commitment (Degn, et al, 2023).

Findings from the curriculum indicate although action verbs are used to express the intended outcomes, the verb is not activated in the teaching. This demonstrates lack of constructive alignment. Constructive alignment is an outcome-based approach to teaching, it is learner-centered whose goal is what the learner has to achieve and how the learner may best be engaged to achieve it to the prerequisite standard. Educators are facilitators of learning, who construct and sustain an effective learning environment and experience based on a wide range of best practices in teaching and learning. Constructive alignment embodies a combination of constructivist learning theory and instructional design that highlights the importance of the learner's activities in constructing meaning during study. Learning is a product of the student's tasks and experiences, rather than the teacher's. The emphasis is on what students can do at the end of the learning experience. (Lawrence, 2023; Biggs et al, 2022). Constructive alignment involves designing

assessment tasks that directly and realistically measure learners' accomplishment of the learning outcomes. The assessment tasks should align with the learning activities and outcomes, ensuring that students are assessed on the same knowledge and skills they are supposed to achieve through the learning process (O'Sullivan & Bjørndal, 2024). Constructive alignment has the constructive component which refers to the idea that students construct meaning through relevant learning activities. Meaning is not imparted or transmitted from teacher to learner, but rather something that learners must create for themselves. The alignment aspect is what the teacher does, which is to set up a learning environment that supports the learning activities appropriate to achieving the desired learning outcomes. The key point is that the teaching methods and assessment tasks are aligned with the learning activities assumed in the intended outcomes. In this context, the learner is 'trapped,' and it is difficult to escape without learning what is intended to be learned (Biggs, 2022). For students to learn desired outcomes effectively, the teacher's primary task is to engage them in learning activities that are likely to result in them achieving these outcomes. What the student does is more important than what the teacher does in determining what is learned (Biggs, 2014). Learning is an active process that involves all the senses in physical actions, knowledge construction occurs in the mind, and may sometimes require hands-on experience (Priyamvada, 2018). CBE focuses on the task, the learning activity, and the task is the content that students engage in. Educators concentrate on what and how students will learn rather than what topics the teacher will teach (Biggs et al, 2022). Cognitive and psychomotor skills are inextricably linked; a psychomotor skill involves movement, and this domain of learning and the associated theory encompasses the development of all movement. The development of movement skills is linked to cognitive development (Amorim et al, 2024; Capio et al, 2024). This practice is another demonstration of educators' lack of understanding of CBE learning, achievement of competence requires a learner to spend quality time engaging with the content rather than listening to an educator about the content.

6.13 Role models

Findings reveal that students encounter some good and bad role models during practicum and the good role models are inaccessible since they are few. Verbal or physical abuse, and poor communication are common among Malawian midwives (Hughes et al, 2022; Sethi et al, 2017; Eka et al, 2023). Msiska et al (2014) found that some Malawian nurses are compassionate and caring whilst others shout at patients. Midwives model by actively demonstrating and explaining the procedure to students (Gardiner & Anderson, 2013). Role modelling is an effective teaching strategy for imparting medical knowledge, skills, and values. Learning from role models is a complex mix of conscious and unconscious activities that occurs through observation and reflection. Students learn by observing the way communication, respect, and attitude toward clients. Midwives model their activities on students both consciously and unconsciously; therefore, educators must be aware of the conscious and unconscious components of learning from role modelling to have a positive impact on the process (Mwale & Kalawa, 2016). During their training, students undergo a professional socialisation process that shapes the type of midwives they will become. Professional socialisation is the complex process by which a person acquires the knowledge, skills, and sense of occupational identity unique to that profession. Internalisation of the group's values and norms into the person's own behaviour and self-conception occurs. Socialisation of nursing students is a multidimensional process, it starts with the classroom experience, clinical practice and extracurricular. Role models have an influence student nurses' practices and the sense of being a nurse. Nurses develop their social identity and nursing roles through their senior role models, the way senior nurses provide care. Eventually, a person abandons the societal and media stereotypes prevalent in his or her culture in favour of those held by members of that profession (Zarshenas et al, 2014).

Students in situated learning observe and practice the behaviour of members of a culture, pick and emulate relevant behaviour, and gradually begin to act in compliance with its norms (Baldwin et al, 2014). Professional development necessitates modelling by respected members. The ability to empower student competence and confidence, demonstrate professional and ethical characters, and enhance students' cognitive skills are professional role modelling behaviours of nurse educators **(**Rumerung, 2022**).** A

learner acquires a new attitude or behaviour by observing what is modelled, creating a mental representation of it, replicating what was modelled while monitoring their performance, and becoming motivated to incorporate the modelled behaviour into their work (Sternszus & Cruess, 2016). Male students in this study bemoan the lack of a male educator who can be their role model. This concurs with Hoogerheide et al (2016) who found that the gender of the model and the gender of the observer influence the modelling-motor performance relationship. Observing a male model improved male subjects' performance. Role modelling is inherent in teaching and can impact positively or negatively on students. Students observe teachers in the classroom, clinical skills laboratory, and clinical practicum. Consequently, educators, as representatives of the profession must be aware that their interactions and attitudes influence students (Baldwin et al, 2014). It can be argued that the negative behaviours exhibited by KCN students and graduates are a replica of behaviours exhibited by some older members of the Malawian midwifery community. Much as stakeholders may bemoan the bad behaviour of KCN graduates, one would retaliate that this is their doing, they have reproduced their kind in the midwifery community of practice.

Role modelling is associated with Bandura's theory of social learning. Learning occurs in a social setting through observation, and also involves cognitive processes. Learners internalise and make sense of what they see to reproduce the behaviour themselves. This involves the psychological matching of cognitive skills and patterns of behaviour between a learner and an observing individual. This kind of learning involves four phases attention, retention, reproduction and motivation. The attention phase involves learners attending to the behaviour, they actually see the behaviour that they want to reproduce. In the retention phase, learners internalise and retain what they have seen. This involves cognitive processes; a learner mentally rehearses the behaviour or actions to be reproduced. To reproduce the behaviour, the learner converts the information obtained from attention and retention processes into action. Lastly, learners need to be motivated to enact or emulate the observed behaviour. Motivation occurs through reinforcement (Horsburgh & Ippolito, 2018).

6.14 Theory practice gap

The study reveals there is theory practice gap. It has been attributed to changes in clinical policies, teaching outdated information and lack of resources. This finding supports findings by Tambunan (2024) in Indonesia, Akram, et al (2018) in Palestine, Sharif and Masoumi (2005) in Iran, Elcigil and Sari (2007) in Turkey and Safadi et al (2011) in Jordan, students reported discrepancies between what was learnt in class and simulation laboratory and the actual practice in clinical practice. Theory practice gap is related to lack of equipment and procedural gaps, heavy workload clinical setting, and educators lack of current practices in clinical settings (Tambunani, 2024), using memorisation in nursing education, domination of task-oriented work in clinical settings, students' lack of interest in the profession (Safazadeh et al, 2018), lack of appropriate facility for clinical practice for students, inadequate use of simulation laboratory, inadequate clinical supervision (Adha & Thomas, 2023). An effective way to promote the integration of theory into practice is through investing time in simulation-based exercises that use high-fidelity technology and realistic patient care scenarios to support communication, decision-making and prioritising of care, integrating theoretical education with hands-on clinical experiences (Singh et al, 2024).

Students enter the clinical environment expecting the same items and equipment they used at the institution. However, in the wards, the situation is different. Most of the equipment is not available, hence the need for improvising. Unavailability of resources generally leaves students frustrated and less interested (Amoo et al, 2022). In this study, theory practice gap was attributed to lack of equipment at the health facilities which leads to improvising, and educators' unawareness of current practices. Theory practice gap compromises patient safety, and contributes to an unsatisfactory clinical experience for the nursing student in the clinical environment (Saifan et al, 2021; Brown, 2019). Theory practice gap can compromise the socialisation of student nurses and newly qualified nurses, into the professional role, and subsequent professional development. It contributes to decreased job satisfaction, and increased job turnover rates. Much as the theory-practice gap is mostly visible in the clinical environment, its source is the educational environments where nurses are being prepared to practice. Consequently, the theory-practice gap can be reduced through the use of high-fidelity simulation utilising

scenario-based learning in pre-licensure programs prior to entry to practice (Brown, 2019; Adha & Thomas, 2023). The clinical skills laboratory creates a bridge between the university and clinical settings, where students integrate theory and practice and develop a reflective attitude (Ewertsson, et al, 2015). The solution to theory practice gap is simulation-based education (Daneshfar & Moonaghi, 2025; Singh et al, 2024). It can be argued that the use of ineffective teaching and learning strategies and public health facilities that lack equipment for clinical learning, contributes to theory practice gap experienced by learners at KCN.

6.15 Students' supervision

Findings indicate that there are no midwives specifically designated for students' learning at the health facilities, instead, all midwives are expected to supervise students. Educators and midwives support students during practicum. This concurs with the notion that most of the responsibility for supporting students and attaining prerequisite clinical standards is assigned to clinical midwives. Spending focused time with a clinical midwife offers the opportunity for students to observe and understand the role of the midwife in the provision of woman-centred care (Arundell et al, 2024).

However, findings indicate that students do not get adequate support from educators and midwives. This supports Msiska et al (2014), Mothiba et al (2012); Eta et al (2011) O'Driscoll et al (2010); Mongwe (2009); Daniels et al (2014); Mann et al, 2024; O'Callaghan & Slevin (2003), Asirifi et al (2017), Essfadi et al (2024) findings that midwives are disinterested in teaching students because they are overwhelmed by the high midwife student ratio, which compounds their heavy workload. Midwives view students as 'extra help' as also reported by Msiska et al (2014). Some midwives and educators have challenges with clinical teaching because they lack good clinical skills, like findings in Vuso and James (2017; Mann et al, 2024), Arundell et al (2024). This concurs with Msiska et al's (2014) findings that nursing students in Malawi prefer educators to teach them as opposed to clinical nurses. They are concerned about the credibility of some clinical nurses because many of them are nurse technicians. Additionally, some of the nurses lack confidence about teaching undergraduate students, hence, they refrain from the teaching responsibility.

Some students are disinterested in learning, as was also reported by O'Callaghan and Slevin (2003), Eta et al (2011), and Safazadeh et al (2018). Findings reveal that educators are not available on the first day of the practicum, and student supervision is done once during the second week of the four-week placements. This finding supports findings of Amoo et al (2022) who found that the midwifery educator's presence was not felt much in the clinical area where it was needed most. This compromises students' learning and compels learners to become prematurely central rather than peripheral members of the community of practice. Consequently, they lose their supernumerary status which is inconsistent with the Nursing and Midwifery Council (2009) and the NMCM (2013) mandate that prohibits students enrolled in pre-registration midwifery education programmes from providing midwifery care while in training and from working without the supervision of qualified midwives and their teachers. Leaving unqualified individuals to care for women and neonates jeopardises clients' safety (Shepherd & Uren, 2014). Students in a new placement, may encounter new unfamiliar procedures, therefore lack of support may increase the intrinsic load. Students differ in their levels of ZPD, therefore, the absence of midwives and educators hinders learning because there is no expert to offer support and guidance (Sadideen & Kneebone, 2012), give them feedback, correct errors and reinforce appropriate skills during the clinical practicum (Oermann et al, 2016). The complexity and difficulty of skill acquisition requires a supportive environment for clinical students to learn clinical skills (Muleya et al, 2018), Additionally workplace-based learning in clinical education imposes high levels of cognitive load that impacts negatively on students' learning and their performance (Tabatabaee et al, 2024). In line with this, Hebert (2018) found that effective motor skill learning necessitates the involvement of an expert who can model and demonstrate the skill to the learner. Skill acquisition improved when observing demonstrations, particularly prior to engaging in physical practice. Learners who observed a demonstration prior to engaging in practice performed the task considerably faster than those who practiced prior to observing. Therefore, educators and midwives who lack some skills may offer inadequate support to students hence compromising students' learning and skill acquisition. According to the situated learning theory, educators and midwives are senior members of the community of practice, old timers, expected to supervise and mentor new members and to confer

legitimacy on the newcomer, they control the newcomer's progression to different kinds and levels of experiences. Learning is considered as taking place through a process of co-participation as students practise their profession with and together with the experts in their specific learning community (Chunxian, 2020), therefore their close interaction with the newcomer during practicum is paramount. It is surprising how unskilful midwives are providing care to women and their neonates in maternity settings and even expected to support learners. This seems to agree with what senior midwives reported that there are midwives who perform below standards, hence, may not offer appropriate support to learners.

Findings unique to this study reveal that some midwives expect monetary compensation for the supervisory work, while others decide to take their annual leave when students are on practicum with the idea that the students will cover up for them. Students have unequal supervision opportunities which translates to unequal support because educators focus more on supervision of junior than senior students, and some students do not interact with qualified midwives during the practicum. Furthermore, some health facilities have more caseloads than others, hence, do not offer adequate learning opportunities to students the because of seasonal availability of clients. Generally, in Malawian context professional midwives are mostly deployed in central and district hospitals, hence students allocated to health centres for clinical practicum may complete the allocation without working with a professional midwife. Students acknowledge that those allocated at health centres are mostly supervised by NMTs, perceive that they are used as a pair of hands since they do not achieve their learning objectives. Because they lack the support of highly qualified midwives. This may impact negatively on the learners' performance since the scope of practice of professional midwives is more advanced than that of NMTs. NMTs may be effective at assisting students in developing psychomotor skills, but they may be ineffective at promoting the development of analytical and critical thinking skills. A degree programme should help student midwives develop analytical, critical thinking, problem-solving, and reflective practice skills (Roets et al, 2016). In CBE the learning experiences, and support are should help the learner to achieve the outcomes, therefore educators should identify health facilities that will

expose learners to appropriate learning opportunities and necessary support. This requires that educators plan adequately for students' clinical practice.

6.16 Students' clinical assessment

The study reveals that midwives and educators assess students during clinical placement, this supports the findings of Msiska et al (2015) and is in line with the requirements of the NMCM. However, student peer to peer feedback is recommended, the practice of providing feedback to peers is perceived by students as useful to development of knowledge, skills, and professional attributes. Provision of feedback from peers can foster high levels of responsibility in students. Regardless, there are worries concerning the honesty and accuracy of peer feedback due to students' inability to provide constructive feedback to peers and possible lack of honesty and accuracy (Burgess et al, 2020). Not only are students expected to give peer to peer feedback, but also feedback on the curriculum, assessment, course, teaching strategies, and individual educators (Chen & Chin, 2014). Additionally, recipients of students' care can provide feedback on the student's performance (Nuuyoma, 2021). Feedback from students and less skilled health care workers is just as valuable as feedback from highly skilled health care workers (Jenq et al, 2024). It can be argued that the involvement of patients and people from various professional backgrounds would be ideal in Malawian context considering the rampant complaints of abusive health care professionals. In CBE knowledge, skills, and attitudes are assessed, therefore by excluding less skilled health care workers and recipients of health care, the attitudes of learners may not be assessed adequately because sometimes learners tend to hide them when they are among those whom they know are directly involved in the assessment.

Findings reveal that students only have summative assessment despite the NMCM mandating educators to conduct both formative and summative student assessments (NMCM, 2013). This finding is unique to this study, the practice may be another contributing factor to poor students' learning outcomes among midwifery students at the institution. Although the reasons for this omission were not stated by participants, it can be argued that lack of its emphasis in the curriculum document, unavailability of experts during clinical practicum and lack of peer and near peer teaching denies students from

getting formative feedback. Formative feedback also referred to as assessment for learning enables students to not only retain information to pass examinations, but also to apply that knowledge in a variety of real-world situations. Learning retention is particularly critical in colleges and universities, as students need to embrace extensive knowledge and skills to use them in different and complex ways. Learning retention fosters lifelong learning and transferable skills. Formative feedback, self-assessment, peer assessment, and goal-setting impact positively on learning outcomes, including retention (Disawat & Mahapoonyanont, 2025).

Formative feedback from an external source is important in the learning of skills. Without external feedback, students may generate their own feedback, but, self-assessment is frequently wrong. High performers have a tendency of underestimating their own performance, and lower performers tend to overestimate. Receiving external feedback gives students the opportunity to benchmark their own self-assessment against appropriate criteria (Burgess et al, 2020). In CBE formative assessments are intended to assist the learner in progressing to the next stage of development rather than assigning a grade (Lee & Chiu, 2022). It may be argued that although the curriculum prescribed simulation and PBL as teaching and learning strategies, the lack of emphasis of formative assessment means that students' learning is compromised.

Another unique finding to this study reveals that during labour and delivery practicum, students are assessed in groups and all members get the same grade. A midwife observes the students as they provide care to the client, later an educator asks the students questions on the care and awards them the same grade. This practice does not conform to the tenets of feedback because the assessor does not directly observe the students' performance. For feedback to be of value, some observation is a prerequisite. Students value and readily accept feedback on directly observed performance. Having the educator directly observe the student's performance provides specific examples of good performance, and areas for improvement (Burgess & Mellis, 2015; Mehranfard et al,2022). Deeley et al (2019) found that students valued feedback that provides them with transferable skills and helps them to develop attributes that would be useful in the workplace. More essentially, feedback that involved actual skills that are required in a

future professional life, actually applying theory to a problem and bringing it into real life. Feedback that provided them with specific advice they can apply to subsequent assessments. Students noted that feedback worked well when it helped them understand where they went wrong and means of improvement. Students believed that the rationale underpinning feedback, is that it contributes to a continuous learning and improving performance. CBE requires individual skill mastery and competency demonstration. This suggests that competence is individualised, therefore, the level of performance of a group member cannot be generalised to all the members. It can be argued that having three students manage a woman during labour and delivery defeats the concept of CBE because only one student would have assisted the woman during the childbirth.

Upon completion of the clinical practicum, the unit manager fills a general evaluation form for each student. End-of-rotation evaluation provides insufficient feedback for most aspects of patient care, and inadequately covers the range of operative skills required (Dougherty & Andreatta, 2017). This practice requires assessors to rely on remote memory of students' performance when completing an evaluation form. Specifics may be lost or over-represented based on more recent performance, which may impact negatively or positively on the learner's performance ratings. It reflects a subjective, overall assessment of clinical performance and professional behaviour. Putting off daily evaluations and dealing with them all at the end of the rotation results in meaningless feedback and deprives students of a significant opportunity to improve clinical performance. Nuuyoma (2021) found that feedback in clinical settings can be improved by incorporating it into the departmental daily routine. Nursing students perceive feedback as a teaching method in clinical settings, where qualified nurses demonstrate short practical skills or teach students correct ways to perform nursing procedures. Therefore, feedback is more useful when it becomes a daily routine. Even though midwives are qualified and provide support and guidance to students, the entire obligation of assessing students' learning may not be left to them because some may be insufficiently prepared to assess students' clinical skills. The ICM (2010) global standards for midwifery education require educators and midwives to collaborate during student learning assessment. It can be argued that educators are failing in their responsibility considering that the midwives are not oriented to learner assessment.

Findings indicate that check lists are used to assess students' learning. Such assessments are shallow and demotivating; they encourage learners to do the right thing to pass instead of thinking critically and excel. However, according to the complexity of nursing skills in critical care settings, assessment methods in nursing education, a programmatic approach that uses multiple informational resources and several methods intertwined with the educational curriculum is required to make a comprehensive decision about students' clinical performance. A programmatic approach, using several sources of information and various methods helps educators to perform a high-quality assessment. A programmatic assessment is a process that is initiated by determining educational outcomes. Fitness to purpose is the basis of the design of a high-quality assessment system (Imanipour & Jalili, 2016). A programmatic assessment involves collection of data from assignments, feedback from peers, supervisors, clients, and observations in practice (Baartman et al, 2022).

Findings indicate that students' assessments are graded using the norm reference grading system. This system's results do not indicate what a student can and cannot do, nor do they indicate whether a student has developed the desired competencies; rather, they indicate whether a student performed better or worse than others (Oermann & Gaberson, 2014). This practice is contrary to CBE, which focuses on identifying performance that informs educators about what has been learned and how well it has been learned, rather than identifying students based on some characteristic. Students' assessment grades are inflated and lack objectivity. Some grades are influenced by student-midwife relationship or previous performance observed by an educator. These findings support those of Msiska et al (2015), and Sadeghi and Bagheri (2017) who found that assessments were characterised by personal preferences and unfairness. Deeley et al (2019) found that students did not believe that there was always a reliability in the marking and sometimes perceived it to be a matter of luck as to who marked their coursework. Awarding of grades that do not reflect the actual performance is not only unprofessional but also jeopardises the safety of the clients, the integrity of the profession and is unfair to the students**.** Allowing the student's previous failure or success to influence the current grade implies that the student's experience, rather than the level of proficiency in performance, determines the grade decision (Msiska et al, 2015). It represents halo effect in

assessment, in which an initial favourable impression of a student leads to higher grades in subsequent assessments (Cannon & Cipriani, 2022). Grades that do not accurately reflect the students' abilities and competence give students unrealistic perceptions of their abilities and competence, compromising their ability to develop and improve. The aspiration for job security and financial benefits may encourage some educators to practice grade inflation. Students prefer educators who inflate grades. Some educators may find grade inflation as time saving because they do not want to spend their time giving justifications for low grades on assignments or examinations. Grade inflation undermines the reliability and validity of an assessment, misleads students regarding their actual degree of academic performance (Chowdhury, 2018), and jeopardises the integrity of academic standards (Elie, 2015), and hinders students' professional formation (Del Prato & Bankert, 2021). Grade inflation reduces students' self-awareness of their competencies, undermine academic accountability, and deprives students of necessary remediation opportunities. Consequently, inadequately prepared students would face problems in their subsequent years of study and might lack the necessary competencies after entering the workforce (Aziz et al, 2025). This seems to be a contributing factor to the poor performance of KCN graduates.

Another finding unique to this study reveals that educators pressurise midwives to provide assessment grades even when the midwife has not had adequate contact with the students. This supports Msiska et al's (2015) findings which revealed that students questioned the source of their grades because they never had contact with the assessor. It demonstrates lack of professionalism and is unacceptable behaviour, it is academic dishonesty among educators**,** which may later reflect in graduates.

A criterion reference grading system is recommended in CBE. CBE principles require that students earn grades that reflect evidence of their academic achievement. CBE principles also mandate student flexibility, determined well-articulated competencies, engagement in authentic tasks significant to the discipline, clear criteria against which performance will be appraised, and multiple opportunities to demonstrate mastery. Competency-based assessment approaches are criterion based, learners are assessed against a standard criteria or benchmark, which are clearly communicated to students

before teaching and assessment, rather than being assessed against each other. The criteria may be defined in competency standards, learning outcomes or other performance outcomes (Skiba, 2020). The issue is how well the student performed and what the student can do irrespective of the performance of other students. It describes the specific learning tasks that a learner can perform, indicates the proportion of completed tasks or items answered correctly, and relates performance to a predetermined standard. It indicates whether the student achieved that standard and specifies how well the student performed at the end of the instruction compared to the expected outcomes and competencies (Oermann & Gaberson, 2014). Findings indicate that despite the challenges associated with students' assessments, educators are perceived to be more accurate than the midwives' during assessments. This supports Bewley (1995) who found that the teacher's assessment was rated more accurately and less biased. Lack of experience is associated with giving high scores during an assessment (Vuso & James, 2017; Yepes-Rios, 2016; Del Prato & Bankert, 2021)). However, even experienced educators are prone to grade inflation and it is practised globally (Chowdhury, 2018, Finefter-Rosenbluh & Levinson, 2015).

The systematic review of the literature revealed that a logbook is another assessment tool used to assess students' progress toward certain objectives. It provides students with the opportunity to receive face-to-face feedback from clinical educators. Additionally, it guides and informs students about the objectives of placement. It states the educational objectives and stipulates the minimum requirements for each department (Mazareie et al, 2016). Provides evidence of having gone through a learning experience, enlists all learning activities that have been performed, and records the tasks done leading to competency development (Shah & Singh, 2021). Yezengaw et al (2024) found that logbooks affect clinical learning, and make students eager to learn and work with their peer, which boosts their competency. Logbook at training in clinical placement can help students learn better and provide them with an opportunity to strengthen nursing skills. It also helps them to apply their knowledge in various clinical practices and demonstrate competency in practical skill and procedure. A logbook is a prerequisite for authenticating the procedural experience at the advanced level of training and reduces repetition (Mahmoud & Omar, 2018). Logbooks can be used as a tool by educators to

provide thoughtful and meaningful feedback to students (Gouda, 2016; Wright et al, 2019). (Yezengaw et al, 2024) found that students who had logbooks were five times more likely they were clinically competent compared without logbooks. Mahmoud and Omar (2018) found that the use of logbook was associated with increased clinical and cognitive skills. Much as Mazareire et al (2016) agree that the logbook is an effective tool for students' learning, they highlight that mutual cooperation and commitment of both the students and educators, requires time for proper establishment of this method. The use of logbooks would be useful in the context of KCN, educators and students would have grades that truly reflect their performance.

6.17 Lack of resources

There is gross scarcity of resources which include human, equipment, and time at the institution and health facilities utilised for clinical learning.

6. 17.1 Human resource

Findings indicate that the staff establishment has been fifteen since 1996 despite the increase in enrolment and programmes. This disregards that the same educators are involved in classroom and clinical teaching. This finding concurs with Ndawo (2016) who stated that the gradual increase in the number of students enrolled into a nursing college in Gauteng resulted in an increase in class size without a proportional increase in the number of nurse educators. Consequently, the teacher student ratio is high for classroom and clinical teaching, hence, educators perceive that they have heavy workload. In response to the workforce shortage, educational institutions have increased enrolment in nursing programmes. Such an increase is associated with clinical teaching constraints due to staff shortage. A high teacher-to-student ratio may result in group supervision during practicum and little teaching time allotted to each student, thus compromising learning. Valentino et al (2016) argue that group supervision can provide exceptional opportunities to establish critical professional opportunities like peer feedback and public speaking skills. However, the quality of the group supervision experience depends on the supervisor's arrangement of the components of the experience in order to maximise the effectiveness of the learning opportunities. Existing models emphasise on one-on-one supervision, called the preceptorship model of student supervision, which provides the student with individualised attention. The learner

engages in daily practice with a role model and resource person who is readily available in the clinical setting. This assists students in improving clinical efficiency and the process of professional development, such as communication with patients or other health care professionals (Hong & Yoon, 2021). Little contact between the educator and the student hinders psychomotor skill learning and denies learners physical guidance (Soderstrom & Bjork, 2015). Displaying what students should do and verbal prompts from the teacher improve performance during the initial instruction (Oermann et al, 2016). The high shortage of educators creates a favourable environment for group supervision which defeats the concept of CBE because educators may have inadequate time for each learner. One on one supervision would also promote one to one teaching to fulfil individual student's learning needs. Moreover, achievement of competency is individualised not a group experience.

Not only is there shortage of midwives at health facilities but also unequal distribution of professional midwives. Such that some students complete their clinical rotations without working with a professional midwife, instead they work with NMTs whose scope of practice is narrower than that of a professional midwife. Since KCN student midwives are prepared to become professional midwives, it is important that they interact with professional midwives in real life to learn from them as they discharge their duties among women. As stated earlier, learners' performance is enhanced when they observe highly skilled persons, older persons and individuals who control important resources (Chunxian, 2020).

6.17.2 Teaching/learning materials

Findings reveal that there are insufficient teaching and learning materials, at the skills laboratory, there are no microphones in the lecture hall and there is one screen that beams poorly. Consequently, educators are inaudible at the back, hence, students scramble for front seats. There is lack and uneven distribution of basic equipment for the learning of midwifery care at health facilities, like cord clamps and protocols of care. As such some students complete their labour ward placement without seeing nor using a cord clamp. This exposes students to different learning experiences compromising the learning of those who have not had the opportunity to use the equipment. In situated learning it is critical that students learn by actively using the equipment rather than simply knowing it.

This allows them to develop a thorough understanding of both the context in which they use the equipment and the equipment itself (Haji, 2018). Not only are equipment unequally distributed at health facilities, but they are also of poor quality, such that students improvise. This finding concurs Mann et al (2024) who found gross paucity of equipment and supplies at clinical sites, which made it difficult to involve students in patient care or to demonstrate and teach best practices. Students get exposed to a different scenario from what they learned in class. Paucity of equipment makes the training situation incorrect and inadequate. The requirement to reuse equipment, unfamiliar, old, and obsolete equipment, forces students to improvise, resulting in a false and inadequate training situation (Heraldseid et al, 2015). However, Patton et al (2013) argue that working in a less resourced hospital with outdated equipment may result in the development of creative practitioners who use creativity to maximise the use of available resources**.** It would be difficult for students to learn in an environment with insufficient learning materials, they are required for deliberate practice and expert performance in skill acquisition. This is an indication of the institution's lack of preparation for change.

6.17.3 Space and Infrastructure

Findings indicate that the skills laboratory is inadequate for the students, and some health facilities have poor infrastructure. Similarly, Eta et al (2011) in Cameroon found that health facilities utilised for clinical learning had poor infrastructures. This creates an unfavourable environment for clinical learning because they can be hazardous to students' health and may be demotivating**.** Physical learning spaces reflect and express underlying teaching and learning assumptions. The design, organisation, and layout of physical learning environments expresses teaching and learning values. For effective learning, the learning environment should encourage dialogue between learners and facilitators, as well as between learners, and should promote peer-learning (Nordquist & Laing, 2014). In line with this the NMCM (2013) mandate nursing and midwifery teaching institutions to regularly improve and update students' learning environment by extending the facilities to match developments in education and practice. Nursing and midwifery training institutions are obliged to have written policies that address student and teacher safety and wellbeing in teaching and learning environments.

6.17.4 Transport and finances

Findings indicate that supervision of students and the frequency of supervisory visits to far distant hospitals, is largely dependent on the availability of college transport for educators. This finding concurs with Mann et al (2024) who also found that in two midwifery schools in Sierra Leone, distance from school to some clinical sites impacted negatively on students' supervision. The top management team controls transport and they decided on one supervisory visit for the entire four-week placement due to financial constraints. Sometimes supervisory visits are cancelled due to lack of transport. Consequently, students from far distant placements complain that their peers are better supervised than them. Again, this contributes to unequal learning opportunities to students. This seems to suggest that KCN midwifery educators do not have power and control on the teaching and learning instead the power is in a few individuals who control the finances and resources of the institution. However, The NMCM (2013) and the ICM (2013) standards mandate institutions to have financial and budgetary arrangements for the operation of the programme.

6.17. 5 Time

The study revealed that time is insufficient firstly for clinical practicum. Similarly, Eta et al (2011), Froneman et al, (2023) found that clinical educators reported that students spent less time on clinical placement. Secondly, the timeframe for the implementation of the program is inconsistent with international standards. According to the ICM (2012) 18 months is required to prepare of a fully qualified midwife that can improve the quality of care as well as reducing unnecessary maternal and new-born deaths. It is surprising that KCN being signatory to ICM would not implement the programme according to the stipulations of the international regulatory body.

Thirdly, educators do not have sufficient time for students' summative clinical assessments as such they withdraw students from a current placement for an assessment at their previous placement. Similarly, Mann et al (2024) found that time constraints compromised supervision of students by educators of the midwifery school. Arguably, much as this encroaches on the student's time for the current placement but results from such assessments may provide a true reflection regarding skill retention which is important in the learning of skills**.** Polack and Miller (2022) recommend retrieval tests also referred to

as retention tests as the main approach to use when assessing the amount of learning acquired from practice. This involves asking the learner to perform the skill that had been practiced after a rest period ranging from 10 minutes to many days. Fourthly, during the theory block, the curriculum, timetable, students, and faculty members indicate that more time is allocated to lectures than practice of skills at the skills laboratory. This finding is consistent with Fullerton et al (2013) who affirm that in many countries midwifery education currently follows a didactic curricular model where students learn through classroom lecture with little opportunity for skills practice. Simulation and role play are needed for the development of critical thinking, values and clinical decision-making abilities needed for effective practice. Nurses are experiential learners; hence, practice is essential to consolidate theory. Experiential learning enables students to learn through doing, learning while experiencing, and learning through hands-on practice and reflection leading to deep learning (Wyllie et al, 2020). Therefore, students need to spend more time practicing the skills so that they reach the autonomous phase of motor skill learning where their movements become automatic (Oermann et al, 2016).

Participants in this study were dissatisfied with the four weeks allocated for all clinical practicum placements. Allocating equal time to all placements neglects the fact that learners must learn many skills which are of different levels of complexity. Learning many skills in a short time may lead to intrinsic load because of the complexity of the skills (Sweller, 2015). This is more likely to occur during the labour and delivery allocation where students learn many new skills. Learners tend to progress at different rates, and some may achieve threshold competencies faster or slower than their peers. In CBE a student's progression is based on evidence of skills rather than on predetermined and universally applied time frames. CBE is concerned about whether learning has occurred not time spent, time is a resource for education, not the marker of learning (Oroszi, 2020). CBE is based on learning and knows that students might need more time to learn the concepts and skills deeply, it ends the practice of "one-sized-fits-all" in education (Adeline, 2024). When there are learning gaps, a student's previous learning is revisited, and prerequisite learning is supplemented. When students are ready, they are promoted to the next level of competence (Tacettin & Mustafa, 2021). Some participants in this study suggested extending the program to 5 years, likewise Chetty and Gwele (2001) found that participants also

perceived that the duration of the midwifery component of the programme needed to be extended, to have more time all around. Much as adequate time is needed this should be coupled with effective teaching and learning, and availability of resources.

6.18 Personal relationships

Findings indicate that there are poor relationships among students, educators, doctors, and midwives. Some educators criticise rather than teach students during clinical practice, some midwives ignore students and doctors intimidate new graduates. Educators who model positive relationship behaviours for their students make them feel comfortable in clinical settings. Educators who build effective relationships with students and create a positive learning environment establish an atmosphere characterised by mutual support, caring and understanding, all of which are foundational to a sound educator–student relationship (Froneman et al, 2016). Stubin et al, (2024) found that educators' psychological support was more strongly associated with reduced nursing student depression and anxiety. Educators and nurses can impact student well-being significantly by creating supportive environments built on collaboration, empathy, and mentorship (Aryuwat et al, 2024). A partnership between the teaching institution and the healthcare practice is vital in providing support to students (Pienaar et al, 2022). Ward managers need to build a respectable clinical teaching environment and promote opportunities for integration of theory to practice among students through effective feedback mechanisms. Building a devoted work team is critical in improvement of clinical learning experience of nursing students, which can enable students to experience a healthier clinical learning environment and meaningful experiences for professional development and competencies (Zhang et al, 2022).

6.19 Educator needs and challenges

6.19.1 Supervision

The study reveals that educators are not supervised in their work hence lack guidance. The absence of faculty supervision or performance evaluation denies them the opportunity to grow professionally, jeopardising the quality of teaching and learning. In higher education, performance reviews of educators are important for identifying performance standards, honouring work well done, correcting weaknesses, and setting new goals. It improves the quality of education for students and the professional

development of educators. Furthermore, after introducing change, a change manager is responsible for planning, developing, leading, evaluating, assessing, supporting, and sustaining a change implementation, reward new behaviour and provide incentives like employee training (Phillips & Klein, 2023; Juchniewicz, et al, 2021). It may be argued that poor change management may have contributed to the poor teaching and learning practices at the college.

6.19.2 No feedback from students

Midwives and educators in this study want feedback from students. Constructive feedback from students to educators may help to improve educators' teaching practices and programme implementation. Student feedback has a significant impact on educators' teaching choices, as well as their ability to teach and improve courses (Floden, 2017). Allowing students to provide feedback to educators will assist them in learning how to provide feedback to team members, will aid in the professional development of midwives and educators, and will allow professionals to demonstrate to students how to receive, accept, and react to feedback in a professional manner (Soderstrom et al, 2013). Furthermore, students would realise that providing and receiving feedback is a professional norm.

6.19 3 Educators' professional development

The study reveals that educators have developmental needs regarding large group teaching, and interactive teaching strategies. Likewise, Matoti and Lenong (2018) found that lecturers have problems with large group teaching, which affects the quality of teaching, and they are unable to be creative in lesson design and presentations, making it difficult to engage students. Large classes present challenges in higher education institutions; therefore, educators must possess effective and specific management skills to effectively teach large classes. Ndawo (2016) recommends that nurse educators should be empowered with facilitative skills in order to effectively manage a large class and to achieve teaching and learning abilities. As tertiary class sizes grow, educators are frequently confronted with new issues and problems regarding classroom management, assessment of students' performance as well as providing support when it comes to individual time and attention (Almulla, 2015). The competency-based curriculum model requires educators to learn new skills because they may be involved in teaching without

adequate preparation (Fullerton et al, 2011; ICM, 2025; Bogren et al, 2025). It could be argued that this demonstrates the importance of involving core operators when introducing change, for them to critically examine the institution's readiness and the implications of the change. Furthermore, this emphasises the importance of staff supervision as well as providing staff support throughout and after the change process. Gruppen et al (2012) recommend that both resource-rich and -poor countries must recognise the need for faculty development about planning and implementing CBE.

6.19.3 No job satisfaction

Findings indicate that some educators recognise that their teaching is below standard, and it impacts negatively on students' learning, hence they lack job satisfaction. This concurs with Inuwa (2016) who states that high performance is associated with job satisfaction and commitment to work. Lack of job satisfaction leads to increased levels of absenteeism, job related stress, and substandard services (Nadinloyi et al, 2013). Small classes have been found to increase teachers' morale and job satisfaction because they are linked to increases in students' achievement (Laitsch et al, 2021). Additionally, social support is an important factor for both improving job satisfaction and reducing emotional exhaustion (Garmendia et al, 2023). While it was commendable that educators recognised that their teaching was compromised, it is surprising why they did not seek help.

6.19.4 Heavy workloads

Findings reveal that educators have heavy workload related to high student enrolment, shortage of staff, their involvement in both classroom and clinical teaching as well as teaching in several midwifery programmes. This finding concurs with Mthimunye and Daniels (2019), Daniels et al (2014) who found that nurse educators face work related challenges such as large numbers of students, and high workload. There is a relationship between workload and employee performance, the highest performance occurs when the workload is moderate (Herawati et al, 2023). Likewise, Priestly et al (2022) found that students perceived that their lecturers had other work pressures which made them not to prioritise students' support. Increased workloads and work intensification are stressful which contributes to academic dissatisfaction, exhaustion, and eventually, burnout (Magtalas & Eduvala, 2024). Midwives in this study attributed the heavy workload to the large enrolment which impacts negatively on their already existing responsibilities. Due

to heavy workload, midwives concentrate on their caregiving work and leave students unsupervised. This aligns with Mongwe's (2009) findings that increased workload worsened by staff shortages made it difficult for nurses to facilitate learning of student nurses. Professional nurses in clinical areas prioritise patient care over clinical teaching, making meeting students' educational requirements impossible (Daniels et al, 2014). Heavy workload is well known among hospital staff in Malawi, therefore, to totally entrust them with student support is unrealistic and a sure sign of compromised student learning.

6.20 Conclusion

The discussion reveals that competency-based approach to midwifery education is appropriate for Malawi since it has the potential of producing professional midwives who can effectively deal with the maternal and neonatal challenges of the country. Despite this, the programme may not produce competent graduates because its implementation is inconsistent with CBE concepts and likely to cause theory practice gap. The teaching practices are not evidence based, students lack support and good role models during their practicum. The assessment practices are characterised by subjectivity, halo effect and do not assess students' competencies. Academic dishonesty is rampant among students and educators. The educational environment does not support students' learning due to paucity of resources, poor personal relationships among students, educators, and professional midwives. Additionally, educators are not supported in their work, yet their teaching skills are deficient. Furthermore, graduates from this programme may not be accepted internationally since the ICM does not recognise the integration of nursing and midwifery. These challenges seem to have generated from utilising ineffective techniques in the introduction of a new curriculum.

6.21 Reflexivity

Insider research in work-integrated learning is mostly conducted to improve practice by understanding, influencing, and changing the direction and position of others (Fleming, 2018). This study has enlightened me regarding competency-based midwifery education at the institution. During classroom teaching I am always conscious of what is happening in the classroom, I ensure that there is interaction among students, in CBE what the students are doing during the classroom session is crucial. I ask question that stimulate

thinking, and I encourage group work. For example, when I was teaching breech presentation all the students had a doll and pelvis and went through the whole skill during the classroom session with my guidance. In so doing I achieved constructive alignment during the teaching, this an important aspect in CBE (Biggs et al, 2022). Since the curriculum has clearly stipulated outcomes starting with action verbs, I am now striving to enact them during the teaching. During clinical teaching I take time to work with each student, rather than conducting group supervision and I create time for formative assessment for each student. I was excited to hear one student commenting that she has never experienced such kind of learning. Biggs et al (2022) affirm that formative feedback indicates good teaching. I also encourage dyad practice for skill learning.

Mzuzu graduates are generally perceived to be working better than KCN graduates. From the study, Mzuzu students seem to have more opportunities for skill practice under the supervision of the educators who provide them feedback, this is not true of their counterparts. Additionally, they have time for dyad practice and work in small groups at the skills laboratory at their own time, this is deliberate practice which is important for learning of skills. Their placements are longer (6 weeks) than those of KCN students (4weeks), throughout their placement they get individualised support since, the educator-student ratio is less than that of KCN. Furthermore, educators conduct direct student assessments in the labour ward throughout all the stages of labour. This is not true of KCN students, they only have direct observation at antenatal clinic and postnatal ward assessments. Labour and delivery assessments are done by educators without direct observation. It is recommended that feedback should be based on what was directly observed (Burgess & Mellis, 2015; Burgess et al, 2020). During faculty meetings, when the opportunity arises, I make suggestions, and advocate against end of rotation clinical evaluations, currently, most of the educators are beginning to realise that these evaluations are unproductive. My plan is to introduce the use of logbooks for assessment.

6.22 Study strengths and weaknesses

The strength of this study is based on several features such as:

1. The qualitative approach is a strength to this study. Through the qualitative research I emphasised on context, existence, experience, perspective, meaning, and subjectivity. This offered me a unique lens through which to explore and interpret the complexities of the clinical teaching and learning of midwifery at KCN. The qualitative approach places emphasis on depth and richness of context and voice.

   Qualitative research is connected to real-world issues, as it seeks to explore phenomena within the natural settings. Insights emerging from qualitative research hold particular relevance for social scientists, policymakers, and stakeholders interested in addressing societal challenges. Qualitative research has the capacity to generate rich, contextualised insights, offering a human-centered understanding of the world (Lim, 2025).
2. The interpretivist constructivism paradigm improves the rigor, transparency, and validity of this study by reducing biases in interpreting the essentially subjective experiences of the participants (Tanlaka & Aryal, 2025). Interpretivism research approach has abilities to understand different people's voices, meanings and events (Rahman, 2017).
3. The use of purposive sampling ensured the identification and selection of information-rich participants especially knowledgeable about the phenomenon of interest (Palinkas et al, 2015; Tajik et al, 2024; Rahman, 2017), in this context, midwifery educators, midwifery students and graduates, were identified as information-rich participants about the clinical teaching and learning of midwifery at KCN.
4. Triangulation, achieved through the use of multiple sources of data enriches the depth and breadth, it enhances the credibility, validity, and depth of research findings, making the conclusions reliable and comprehensive. Using multiple sources of data counteracted biases inherent in any single approach, making the conclusions objective. (Meydan & Akkas, 2024; Bingham, 2023; Eldh, 2020).
5. The inductive analysis strengthens this study. Themes emerged directly from the raw data rather than being forced into a predetermined framework.

6. The findings of the study have been situated in the existing literature, learning theories and CBE concepts, this supports trustworthiness and credibility of this study (Bingham, 2023).
7. Reflexivity as a relational awareness, an inter dependent awareness of how I as a researcher influenced my research participants' perceptions and a simultaneous and interdependent awareness of how they influenced me. Reflexivity helps to enhance the trustworthiness and credibility of the findings by accounting for the researchers' values, beliefs, knowledge, and bias (Yip, 2024; Olmos-Vega et al, 2023; Bukamal, 2022; Dodgson, 2019).
8. Being an insider, I was accepted and familiar with those in the study location, this allowed the participants to be more open. Consequently, I collected rich, valid, and reliable data (Muasya, 2023).

However, the qualitative approach generally renders this study weak as the results cannot be generalised, based on the smaller sample size (Rahman, 2017). Only Mzuzu University graduates were involved, involvement of educators might have strengthened the findings. Being an insider renders this study to criticism, it raises issues of undue influence of the researcher's perspective (Dwyer & Buckle, 2009). I think adding observation of classroom teaching to data collection would have added more information to the findings. But the targeted population did not have classroom sessions during the data collection period because they had completed the theory part of the programme.

CHAPTER 7
CONCLUSIONS

7 Introduction

This chapter presents a summary of the research findings followed by recommendations to improve midwifery education at KCN. Although the study is specific to KCN, some of the issues and findings may apply to pre-registration midwifery programmes offered by other institutions within Malawi and the African region. This is because African countries have similar challenges regarding midwifery education. According to the WHO (2016) there are gaps in midwifery education in the African Region, including weak linkage between curriculum and priority health problems, lack of clearly defined competencies, mismatch between theory and practice, and the consequent inability to produce competent midwives to meet the health needs of the population. Yet health systems in Africa mostly rely on nurses and midwives, who comprise more than 50% of the health workforce and provide up to 90% of services in some countries (WHO, 2007). Malawi has 28 nurse midwives and two physicians per 100,000 populations. The recommendations are derived from the views of the participants who are the insiders, influenced by my personal knowledge based on the available evidence within the literature. It is hoped that their views will inform meaningful innovations in midwifery education at KCN.

7.1 Summary of findings

The study reveals prevailing problems in the teaching and learning of midwifery at KCN which are associated with the utilization of power coercive strategy in the introduction of change. The change led to increased enrolment, integration of nursing and midwifery programmes and introduction of CBE in line with the ICM and NMCM. All participants agree that the large enrolment compromises students' classroom and clinical learning. Furthermore, they disapprove the integration of nursing and midwifery programmes. Similarly, the ICM does not support any form of integrated nursing and midwifery programme as it does not provide sufficient time for the preparation of competent midwives (ICM (2012). This concurs with the findings from all the participants who identified lack of time as a constraint in the learning. This seems to suggest that graduates

from this programme may not be competent enough for midwifery practice. Other institutions may learn from this when introducing institutional change.

7.2 Programme implementation

Findings indicate that the programme incorporates both theory and practice, with theory preceding clinical practice. Though this is in line with the ICM (2010) and NMCM (2013). Theory/practice gap was reported by all participants in this study. Educators need to use the clinical skills laboratory to teach skills for students to apply theory into practice (Ewertsson et al, 2015). CBE has the potential to produce competent midwives if used properly (Uys & Gwele, 2005).

7.3 Minimum pre-registration requirements

All participants acknowledge that the NMCM minimum pre-registration requirements are unachievable and may be responded to dishonestly by students. Although the NMCM demand this from students. Fulfilment of minimum council requirements is not evidence of achievement of competency (Fullerton et al, 2011), the practice is contrary to CBE concepts. This seems to suggest that the NMCM may not have a clear understanding of CBE.

7.4 Learning environment

Findings indicate that the learning environment, both physical and psychological, compromises learning. The alignment of physical learning spaces with curriculum is a critical component in the health professions (Nordquist et al, 2016). The learning environment is the strongest predictor of preparedness for practice (Dijkstra et al, 2015). Paucity of equipment results in a false and inadequate learning environment (Heraldseid et al, 2015). All participants acknowledged gross paucity of equipment for classroom and clinical learning. This further indicates the importance of involving curriculum implementers in implementation of change.

7.5 Recommendations

7.5.1 Management of change

The KCN management team need to consider involving academic staff in any change process involving the teaching and learning. It is recommended that diagnosis of problems, and identification of solutions should be done jointly with the teaching staff, likewise the introduction and implementation of the change and continuous evaluation of the change to recognise what is going well or not and communicate early success (Phillips and Klein (2023; Juchniewicz, et al, 2021).

7.5.2 Nature of programme

There is need to reconsider the nature of the programme and align it to the stipulations of the international regulatory body. Disregarding stipulations of regulatory bodies in the implementation of the programme disadvantages the graduates as they may not be accepted internationally. Besides, government and families invest a lot of finances in the education of midwives; therefore, learners deserve quality education that will enhance their employment prospects in a highly competitive environment.

7.5.3 Outcomes

Adhere to the ICM competencies which reflect quality rather that quantity of skills performed by a student. Consider discussing with the NMCM to abolish the mandatory minimum pre-registration requirements since the practice is not evidence based.

7.5.4 Teaching and learning strategies

Use student centred teaching approaches indicated in the curriculum document this is important for the development of higher-order thinking, attitude change and motivation, for long-term retention and the application of knowledge to new contexts.

Educators need to identify good role models at the health facilities and give students an opportunity to interact with them, and they also need to be good role models. Educators need to consider introducing peer and near peer teaching and having male educators to be role models to male students.

Educators are required to focus on what and how students are to learn (Biggs et al, 2022) to create relevant learning opportunities that encourage students to perform the learning activities (Saucier et al, 2012).

Students should be active during classroom sessions, having all their senses involved in physical actions, for knowledge construction to occur in the mind. It is important to engage them in learning activities that can promote effective achievement of the educational outcomes (Priyamvada, 2018).

7.5.5 Student supervision

Students need to be accorded the necessary support for learning to occur. The availability of educators for orientation of students on the first day of clinical practice is paramount. Educators and midwives need to be up to date in skill performance as required by the national and international nursing and midwifery regulatory bodies to effectively support students in their learning.

Consider, having a midwife specifically designed for students' support at each health facility for continuous student support during clinical practicum.

7.5.6 Students' clinical assessments

Educators need to consider utilising assessment practices that are consistent with CBE to maintain constructive alignment. Miller's pyramid of clinical competence provides guidance to educators on the type of assessments to use at all levels of the pyramid from the lowest level of knowledge to the top of the pyramid which is clinical performance (Witheridge et al, 2019; Chiu et al, 2016).

Additionally, consider including people from different professional backgrounds in students' and recipients of care in assessments and to encourage self-assessment to help students engage in life-long learning (Burgess et al, 2020).

In view of inadequate opportunities for vacuum extraction, consider using mannequins at the skills laboratory to help learners achieve competences timely. Educators need to negotiate with the NMCM to abolish the minimum pre-registration requirements since they are not consistent with CBE.

Educators need to consider abandoning clinical summative assessments since they do not give a true reflection of students' performance, and conduct those assessments during OSCE. Introducing logbooks would improve students' assessments.

7.5.7 Personal relationships

Educators need to develop good relationships with staff at health facilities to create a conducive learning environment for students.

7.5.8 Lack of resources

The KCN management need to consider reviewing staffing levels to comply with the standards of the ICM and the NMCM for effective teaching and learning.

Consider reviewing the KCN midwifery programme so that it is implemented within the ICM's recommended timeframe. This is important for graduates' international recognition.

It is important to have written policies that address student and teacher safety and wellbeing in teaching and learning environments in line with the obligations of the NMCM and implementing them accordingly. Health facilities should be assessed before sending students for clinical practicum.

In view of paucity of teaching and learning materials, there is need to consider procuring microphones, screens, and mannequins. Having all the basic and essential midwifery equipment available at the clinical skills laboratory to allow all students to know and learn how to use them at the completion of the programme despite the paucity of the equipment experienced at the hospitals during practicum.

Consider having a spacious clinical skills laboratory that can take many students at a time as stipulated by the NMCM to assist in the teaching and learning of psychomotor skills and conducting simulation scenarios. Additionally, consider having an expert to assist learners at the skills laboratory.

7.5.9 Educator needs and challenges

In higher education performance review of educators is important to identify standards of performance, to honour work well done, correct weaknesses and to set further goals is important Educators would benefit from encouragement, mentoring, or modelling for

professional development of their teaching staff. This could be done by administrators and experienced faculty members (Phillips and Klein (2023; Juchniewicz, et al, 2021).

Consider establishing regular performance appraisals of staff involved in the implementation of the programme as required by the national regulatory body would assist in identification of weaknesses and learning needs of educators (NMCM,2013).

Introduce a system whereby students give feedback to educators and midwives to assist in the professional development of the midwives and educators, this may also help students to learn how to give feedback to team members (Soderstrom et al, 2013).

Consider orienting educators to learning theories, and CBE concepts.

Support newly qualified midwives so that they may attain the expected level of competence.

7.5.10 Theory practice gap

The college needs to consider owning a teaching hospital since it would probably be equipped with the necessary equipment for basic midwifery practice, hence reducing the theory practice gap.

Generally, the findings reveal a failed CBE programme. KCN needs to consider if they are ready for to implement a CBE programme. Much as CBE seems to be an appropriate approach that would help with reducing maternal and neonatal mortality rates in the country, it is unrealistic to expect that the desired outcomes may be achieved with so many challenging issues. Firstly, the findings reveal that the change was poorly introduced as such, the programme is competency-based on paper but in reality, it is not. Secondly, those who advocated for the programme, the regulating body, and the educators seem to lack understanding of what is involved in CBE. Thirdly, the college has gross lack of resources for effective implementation of the programme. Fourthly, the college heavily depends on public hospitals, and health care workers in the health facilities for the teaching and learning, as such, learners are scattered all over the country for their clinical practice making supervision difficult for educators due to transportation challenges. The health facilities lack resources which heavily compromises the learning.

Therefore, KCN needs to consider going back to the drawing board to rethink and be honest with themselves regarding the implementation of CBE.

7.6 Suggestions for future research

There is need to find out if these problems are specific to KCN, which is a public university, or need to be examined at other colleges who are also implementing CBE in Malawi and other developing countries.

The study portrays the impact of lack of learner support during clinical practice. There is need to investigate what is needed for learners to receive continuous support during clinical practice within the Malawian context.

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APPENDICES

Appendix 1: College of Human and Health Sciences ethics at Swansea

PLEASE COMPLETE THE FORM USING TYPESCRIPT

(hand-written applications will not be considered)

Principal Investigator	Chrissie Phiri
Date	01.10. 2018
School	College of Medicine
E-mail address	[redacted]
Title of Proposed Research	Acquisition of competence: an analysis of clinical teaching and learning of midwifery at Kamuzu College of Nursing
Type of Researcher (please tick)	Postgraduate student
Name of course & supervisor	Research in Health Professions. Professor A.J.Grant and Dr. S.L. Edwards
Supervisor e-mail address	[redacted] [redacted]
Qualifications and professional background	Diploma in nursing. University Certificate in midwifery. MSc Midwifery and International Health. My initial training is in nursing and midwifery. Practiced under the Ministry of Health Malawi for 2 years. Taught midwifery at St Joseph's Nursing College. Worked as nurse in charge at Beit Cure International Hospital in Malawi. Have taught midwifery at Kamuzu College of nursing since 2004 September.

1. Briefly describe the rationale and the main aims of the research you wish to undertake,

including a statement of the intended benefits of the research. Please use non-technical language wherever possible.
The aim of the study is to analyse midwifery education at Kamuzu College of Nursing. The benefit is that this study evaluates midwifery education at Kamuzu College of Nursing and based on identification of gaps appropriate action will be taken to ensure quality midwifery education for improved martenal and new-born health.

2. Briefly describe the overall design of the project including dates and/or the proposed period of investigation
The period of the study is from January 2019 to September 2021. Field work will start from January to September 2019.This is a qualitative mixed methods study that will be done in 2 phases. Study participants for phase 1 will be purposefully recruited. Data will be collected from multiple sources which lecturers, senior midwives, student midwives, graduate midwives, the curriculum, timetables assessment forms and the nurses and midwives council of Malawi. The aim is to get rich descriptions of midwifery education at the college to identify and interpret relevant meanings that will be used to understand the topic. Phase 1 involves lecturers and senior midwives followed by transcription and validation of the findings with the curriculum, timetables, assessment forms and records from the nurses and midwives council. Phase 2 has 2 samples. One sample of study participants will be purposively selected (student midwives), the sample of graduate midwives will be conveniently selected. The phase will start with designing a data collection tool based on findings of phase 1. The tool will be piloted and will be used for data collection from student midwives using focus group discussions.

3. Briefly describe the methods of data collection and analysis. Please describe all measures to be employed. If questionnaire or interviews are to be used, please provide the questionnaire / interview questions and schedule.
In phase 1, data will be collected using semi structured interviews with midwifery lecturers and senior midwives. I will validate data from lecturers by checking timetables, the midwifery curriculum and assessment forms used for assessing students. I will validate data from senior midwives with records from the nurses and miwives council of Malawi. Data will be transcribed and analysed using thematic analysis approach. In phase 2, data will be collected from student midwives using focus group discussions. After focus group discussions data will be transcribed and analysed using constant comparison analysis approach, interpreted and discussed accordingly. To explore graduates' perception of their preparation for midwifery practice, I will conduct a focus group discussion with graduate midwives. Data will be transcribed and analysed using thematic analysis approach, results will be documented and discussed separately. Finally, I will do an integrated discussion of all the results of the study.

4. Location of the proposed research (i.e., Departmental labs, schools, etc)
The project will be conducted at Kamuzu College of Nursing Malawi at Lilongwe and Blantyre campuses and Ethel Muthalika, Bwaila and Chatinkha maternity units.

5. Describe the participants: give the age range, gender, inclusion and exclusion criteria, and any particular characteristics pertinent to the research project.
In phase 1 participants will be male and female lecturers aged 30-60 who have been involved in classroom and clinical teaching of midwifery at KCN for at least 3 years. Male and female senior midwives aged 30-60 yeas with 3 years of midwifery experience and have worked with KCN graduate midwives in maternity. KCN lecturers who do not fit into the age bracket and not involved in classroom and clinical teaching of midwifery will be excluded. Similarly, those aged below 30 and above 60. Senior midwives below 30 and above 60 with work experience of 2 years and those who have not worked with KCN graduates in maternity setting will be excluded. In phase 2, participants will be male and female student midwives within the age range of 24-60 from the same cohort who have been taught by the same lecturers in classroom and clinical setting. Student midwives younger than 24 and older than 60, graduates from different cohort, and who have been taught by different lecturers in classroom and clinical setting will be excluded. Similarly, male, and female graduate midwives who went through the KCN midwifery curriculum and have worked in the maternity unit for less than one year. Those who have worked in the maternity unit for more than one year will be excluded.

6. How will the participants be selected and recruited? Please describe in detail the process of recruitment, including how and by whom initial contact is made with participants (e.g., advertisement, e-mail).
Purposive sampling will be used to recruit participants. In phase 1, I will seek assistance from hospital administrators to send mails to senior midwives on my behalf. Those willing to participate will be asked to give their phone numbers and indicate their consent to contact through my email. I will then contact them by email or phone and arrange for a meeting for familiarisation. I will seek the assistance of the dean of midwifery faculty of Kamuzu College of Nursing to contact the lecturers on my behalf through email. They will be asked to send emails to me indicating their interest and consent for me to contact them. I will contact them to arrange for a meeting to explain to them the nature of the study and why they are selected to participate and answer any questions they may have. In phase 2, the midwife in charge of the maternity will send mails to graduate midwives on my behalf. Those willing to participate in the study will be asked to give their phone numbers and indicate their consent to contact through my email. My email address will be provided in the letter. I will then meet them physically to give them more information and allow them to ask questions.

The head of the midwifery department will assist in the recruitment of student midwives to participate in the study by sending them emails on my behalf. Those willing to participate in the study will be asked to give their phone numbers and indicate their consent to contact through my email. My email address will be provided in the letter. I will then meet them physically to give them more information and allow them to ask questions.

7. What procedures (e.g., interviews, computer-based learning tasks, etc.) will be used to gather information from participants?
In phase 1, semi structure interviews with lecturers and senior midwives will be used. Interviews will be recorded using a voice recorder. In phase 2, I will conduct focus group discussions with graduate and student midwives all discussions will be recorded using a voice recorder.

8. What potential risks to the participants do you foresee and how do you propose to ameliorate/deal with potential risks? Declare any relationship with the participants.
I do not foresee any risks. Participants will be free to withdraw. Some partcipants are colleagues.

What potential risks to the interests of the researchers do you foresee and how will you ameliorate/deal with potential risks?
I do not foresee potential risks to the researcher

9. How will you brief and debrief participants? *(Please attach copy of participant information sheets and relevant debrief information)*
A written information sheet will be given to participants, and I will explain the nature of the study where necessary. Information forms are provided in the appendix.

10. Will informed consent be sought from participants? YES	Yes *(Please attach a copy of the consent form and participant information sheet)*	Consent form attached
If no, please explain below:		

11. If there are doubts about participants' abilities to give informed consent, what steps have you taken to ensure that they are willing/competent to participate?
N/A

12. If participants are under 18 years of age, please describe how you will seek informed consent.
N/A

13. How will consent be recorded?
Consent form will be completed and kept with other documents of the study in a locked cabinet in office at Kamuzu College of Nursing

14. Will participants be informed of the right to withdraw from your study without penalty? If no, please explain why.
Yes (see participant information sheet).

15. How do you propose to ensure participants' confidentiality and anonymity?
All interviewsforms will have no names. Participants will be identified by numbers. Interviews will be held at a place and time convenient to participants. All data will be kept in locked cabinet. All data in my computer will be protected with a password.

16. Please describe the arrangements for storing and disposal of data:
<u>Please explain, for each of the above, the arrangements you will make for the security of the data.</u> All data will be kept in locked cabinet in an office at Kamuzu College of Nursing. After analysis and write up all paper and audio recordings will be destroyed accordingly at least after 1 year of completion of study.

17. Does your research require the written consent of a public or private body, e.g., school, local authority or company? If so, please attach letter of consent.
YES (see appendix 2 and letter of approval from Principal of Kamuzu College of Nursing)

18. If your proposed research is with 'vulnerable' groups (e.g., children, people with a disability etc.), has an up-to-date Disclosure and Barring Service (DBS) check (previously CRB check) if UK, or equivalent non-UK clearance been requested and/or obtained for all researchers?

19. Does your research involve the collection of Human Tissue? E.g. saliva, urine	Yes	
	No	NO

Applicant's signature: _Chrissie Phiri_____ Date: __01.10. 2018._____

Supervisor's signature: __[redacted]__ Date: _01. October 2018_____

(if appropriate)

Upon completion, please forward an electronic copy (as a single document, Word or PDF) by e-mail to [redacted] and a signed hard copy to the Chair of the Committee, Dr Deyarina Gonzalez.

Administrative Support

Research Ethics Sub- Committee,

SUMS

Swansea University

Singleton Park, Swansea, SA2 8PP.

Dr Deyarina Gonzalez

Research Ethics Sub-Committee,

SUMS

Swansea University

Singleton Park, Swansea, SA2 8PP.

Email: [redacted]

Chairperson REG

****RESEARCH MAY ONLY COMMENCE ONCE ETHICAL**

APPROVAL HAS BEEN OBTAINED**

Ethical Approval

Ethics Committee Use Only

Principal Investigator	Chrissie Phiri
Title of Proposed Research	Acquisition of competence: an analysis of clinical teaching and learning of midwifery at Kamuzu College of Nursing
RESC Project reference number	2018-0034

Application approved	**Yes**	X	**No**			
Conflict of interest	**Yes**		**No**	X		
If yes, please supply details						
Chair of SUMS RESC	Deya Gonzalez Associate Professor of Molecular Medicine CNH, ILS2 building, room 018 Swansea University Medical School Singleton Park, Swansea, SA2 8PP, UK. Email [redacted] Tel [redacted]					
Date 23.10.18	Signature [redacted]					
Time limit for applicant to respond	(two months from receipt of email from ethics panel)					

This application **has been granted ethical approval** in its current form.

Please ensure that you quote project reference number 2018-0034 in any correspondence with the SUMS RESC

Appendix 2: National Commission for Science and Technology in Malawi

NATIONAL COMMISSION FOR SCIENCE & TECHNOLOGY
Lingadzi House
Robert Mugabe Crescent
P/Bag B303
City Centre
Lilongwe
Tel: +265 1 771 550
+265 1 774 189
+265 1 774 869
Fax: +265 1772 431
Email:directorgeneral@ncst.mw
Website:http://www.ncst.mw

NATIONAL COMMITTEE ON RESEARCH IN THE SOCIAL SCIENCES AND HUMANITIES

Ref No: NCST/RTT/2/6 **15th March 2019**

Ms Chrissie Phiri,

Kamuzu College of Nursing,

P/Bag 1,

Lilongwe.

Email: [redacted]

Dear Ms Phiri,

RESEARCH ETHICS AND REGULATORY APPROVAL AND PERMIT FOR PROTOCOL NO. P.01/19/348: ACQUISITION OF COMPETENCE: AN ANALYSIS OF CLINICAL TEACHING AND LEARNING OF MIDWIFERY AT KAMUZU COLLEGE OF NURSING

Having satisfied all the relevant ethical and regulatory requirements, I am pleased to inform you that the above referred research protocol has officially been approved. You are now permitted to proceed with its implementation. Should there be any amendments to the approved protocol in the course of implementing it, you shall be required to seek approval of such amendments before implementation of the same.

This approval is valid for one year from the date of issuance of this approval. If the study goes beyond one year, an annual approval for continuation shall be required to be sought from the National Committee on Research in the Social Sciences and Humanities (NCRSH) in a format that is available at the Secretariat. Once the study is finalised, you are required to furnish the Committee and the Commission with a final report of the study. The committee reserves the right to carry out compliance

Committee Address:
Secretariat, National Committee on Research in the Social Sciences and Humanities, National Commission for Science and Technology, Lingadzi House, City Centre, P/Bag B303, Capital City, Lilongwe3, Malawi. Telephone Nos: +265 771 550/774 869; E-mail address: ncrsh@ncst.mw

inspection of this approved protocol at any time as may be deemed by it. As such, you are expected to properly maintain all study documents including consent forms.

Wishing you a successful implementation of your study.

Yours Sincerely,

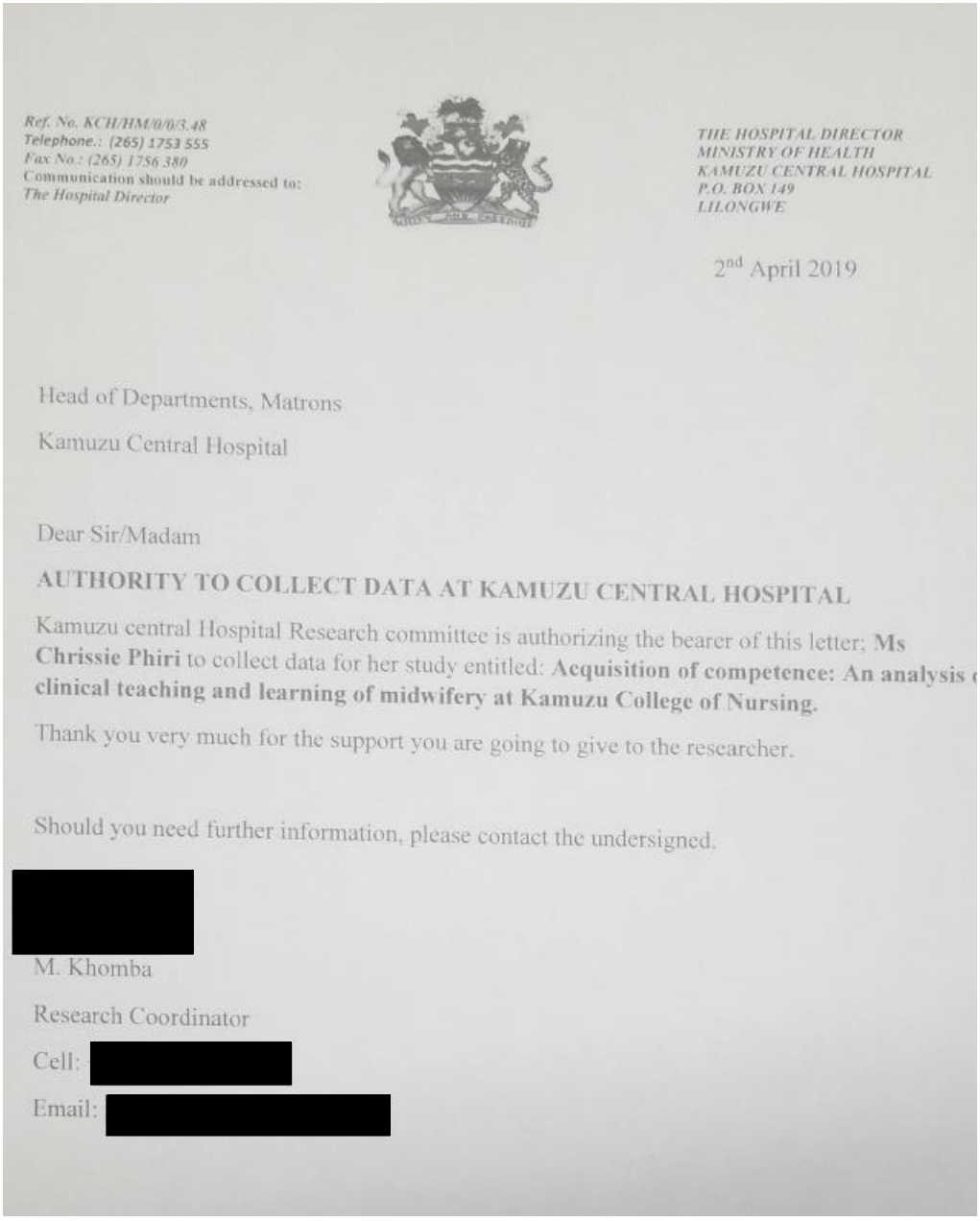
[redacted]

Yalonda .I. Mwanza
NCRSH ADMINISTRATOR
HEALTH, SOCIAL SCIENCES AND HUMANITIES DIVISION

For: CHAIRMAN OF NCRSH

Committee Address:
Secretariat, National Committee on Research in the Social Sciences and Humanities, National Commission for Science and Technology, Lingadzi House, City Centre, P/Bag B303, Capital City, Lilongwe3, Malawi. Telephone Nos: +265 771 550/774 869; E-mail address: ncrsh@ncst.mw

Appendix 3: Ethics Committee Kamuzu Central Hospital



Ref. No. KCH/HM/0/0/3.48
Telephone.: (265) 1753 555
Fax No.: (265) 1756 380
Communication should be addressed to:
The Hospital Director

THE HOSPITAL DIRECTOR
MINISTRY OF HEALTH
KAMUZU CENTRAL HOSPITAL
P.O. BOX 149
LILONGWE

2nd April 2019

Head of Departments, Matrons

Kamuzu Central Hospital

Dear Sir/Madam

AUTHORITY TO COLLECT DATA AT KAMUZU CENTRAL HOSPITAL

Kamuzu central Hospital Research committee is authorizing the bearer of this letter; **Ms Chrissie Phiri** to collect data for her study entitled: **Acquisition of competence: An analysis clinical teaching and learning of midwifery at Kamuzu College of Nursing.**

Thank you very much for the support you are going to give to the researcher.

Should you need further information, please contact the undersigned.

[redacted]

M. Khomba

Research Coordinator

Cell: [redacted]

Email: [redacted]

Appendix 4: Permission to conduct study Kamuzu College of Nursing

TO: The Principal KCN

FROM: Chrissie Phiri

Date: 07.05.18

Dear Madam,

Re-request for permission to conduct a study

I am a PhD student at Swansea University. I hereby request for permission to conduct a study titled "acquisition of competence: an analysis of clinical teaching and learning of midwifery at Kamuzu College of Nursing"

The aim of the study is to explore how clinical teaching and learning of midwifery is done to ensure that graduates are competent for practice. The sample for the study will comprise of KCN midwifery lecturers involved in classroom and clinical teaching, new graduates working in labour and delivery ward and qualified midwives working with the graduates. All necessary ethical requirements will be attended to accordingly.

Your quick response will be greatly appreciated,

Yours sincerely

Chrissie Phiri

Cc: Dean of Faculty (Midwifery)

College Registrar

Appendix 5: Permission to conduct study Kamuzu College of Nursing

TO: The Principal KCN

FROM: Chrissie Phiri

Date: 07.05.18

University of Malawi
Kamuzu College of Nursing
23 MAY 2018
PRINCIPAL
Private Bag 1, Lilongwe

Dear Madam,

Re-request for permission to conduct a study

I am a PhD student at Swansea University. I hereby request for permission to conduct a study titled "acquisition of competence: an analysis of clinical teaching and learning of midwifery at Kamuzu College of Nursing"

The aim of the study is to explore how clinical teaching and learning of midwifery is done to ensure that graduates are competent for practice. The sample for the study will comprise of KCN midwifery lecturers involved in classroom and clinical teaching, new graduates working in labour and delivery ward and qualified midwives working with the graduates. All necessary ethical requirements will be attended to accordingly.

Your quick response will be greatly appreciated,

Yours sincerely

Chrissie Phiri

Cc: Dean of Faculty (Midwifery)

College Registrar

Approved [redacted] 23/05/18

Appendix 6: Explanation of study

Participants' Information sheet

You are being invited to take part in a research study. Before you decide it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

The purpose of the study

There is evidence of complaints regarding the performance of Kamuzu College of Nursing midwifery graduates. Senior midwives in charge of maternity units in Malawi complain that the graduates' performance is below standard compared to the performance of graduates from Mzuzu University. The study is conducted as a requirement in the fulfilment of a professional doctorate programme at Swansea University. Its aim is to analyse clinical teaching and learning of midwifery at KCN.

The study will involve collecting data from KCN midwifery lecturers, senior midwives from Bwaila and Ethel Mutharika maternity units, KCN fourth year midwifery students, graduate midwives from KCN who are in their first year of practice at Bwaila and Ethel Mutharika, the midwifery curriculum, timetables, clinical assessment forms and if necessary, the nurses and midwives council of Malawi. The study will be carried out from 2019 to 2021.

Why have I been chosen?

You have been chosen because you responded to my request for participants. I want to find out about your perceptions regarding midwifery education at KCN.

It is up to you to decide to take part or not. If you decide to take part, you will be given this information sheet to keep, and be asked to sign a consent form. If you decide to take part, you are still free to withdraw at any time without having to give any reason for your withdrawal.

If you decide to take part, I will arrange for an interview with you/focus group discussions with other participants/ observation during classroom teaching at a time and place convenient to you. During this interview the interviewer will ask you to tell the story of midwifery education at KCN in your own words in response to questions that will guide the interview/focus group discussion. For the observation, I will ask for consent from lecturers for me to sit in the classroom during teaching sessions.

Confidentiality

All data collected in this study will be anonymised. You will not be identifiable in any reports or publications resulting from this research. Electronic audio and textual data will be stored on a specially created secure data storage facility set up for the purpose. Any paper records will be stored in a locked cabinet in a locked office. Data will be destroyed once the research project is complete and the results have been written up.

What do I need to do?

If you are willing to participate please make contact with Chrissie Phiri.

What will happen to the results of the research study?

The findings of this study will be delivered to the faculty of midwifery neonatal and reproductive health studies at Kamuzu College of Nursing, Bwaila and Ethel Mutharika maternity units in the form of a written report. Findings will be written up for publication in peer reviewed journals and will be widely disseminated at national and international conferences and meetings. I expect the findings to inform the faculty regarding midwifery education at KCN.

Allowances

There are no allowances for participating in this study however you will be given some refreshments during the interviews.

Contact for Further Information

Chrissie Phiri

[redacted]

[redacted]

National Commission for Science and Technology (NCST)

Email: [redacted]

Phone: [redacted]

Appendix 7

PARTICIPANT INFORMED CONSENT FOR GRADUATES

Research Title

Acquisition of competence: an analysis of clinical teaching and learning of midwifery at Kamuzu College of Nursing

I understand I am asked to participate in a study which analyses the clinical teaching and learning of midwifery at Kamuzu College of Nursing. By agreeing to participate in this study, my role will be that of a co-researcher because of the nature of the study. I understand that I will be engaged in face-to-face conversational interviews regarding my clinical learning of midwifery at KCN. The interview will take place at a place of my convenience and will be recorded. I have been assured of my anonymity and there are no known risks associated with the study.

My participation is voluntary, and I am free to withdraw from the study at any time I wish without facing any repercussions.

I understand that all data will be kept confidential, but the information will be used for publication and presentations

The study has been explained to me. I have read, and I understand the information on the consent form, and I agree to participate. I will get a copy of the signed consent and the researcher is ready to answer any questions I may have.

Signature of participant_____Date_____

Signature of researcher_____Date_____

Appendix 8: Participants consent form educators

PARTICIPANT INFORMED CONSENT FOR EDUCATOR

Research Title

Acquisition of competence: an analysis of clinical teaching and learning of midwifery at

Kamuzu College of Nursing

I understand I am asked to participate in a study which analyses the clinical teaching and learning of midwifery at Kamuzu College of Nursing. By agreeing to participate in this study, my role will be that of a co-researcher because of the nature of the study. I understand that I will be engaged in face-to-face conversational interviews regarding my teaching of midwifery at KCN. The interview will take place at a place of my convenience and will be recorded. I have been assured of my anonymity and there are no known risks associated with the study.

My participation is voluntary, and I am free to withdraw from the study at any time I wish without facing any repercussions.

I understand that all data will be kept confidential, but the information will be used for publication and presentations

The study has been explained to me. I have read, and I understand the information on the consent form, and I agree to participate. I will get a copy of the signed consent and the researcher is ready to answer any questions I may have.

Signature of participant_____ Date_____

Signature of
researcher_____Date_____

Name of investigator: Chrissie Phiri.

Appendix 9: Participants consent form midwives

Research Title

Acquisition of competence: an analysis of clinical teaching and learning of midwifery at Kamuzu College of Nursing

I understand I am asked to participate in a study which analyses the clinical teaching and learning of midwifery at Kamuzu College of Nursing. By agreeing to participate in this study, my role will be that of a co-researcher because of the nature of the study. I understand that I will be engaged in face-to-face conversational interviews regarding my perception of the performance of new midwifery graduates of KCN. The interview will take place at a place of my convenience and will be recorded. I have been assured of my anonymity and there are no known risks associated with the study.

My participation is voluntary, and I am free to withdraw from the study at any time I wish without facing any repercussions.

I understand that all data will be kept confidential, but the information will be used for publication and presentations

The study has been explained to me. I have read, and I understand the information on the consent form, and I agree to participate. I will get a copy of the signed consent and the researcher is ready to answer any questions I may have.

Signature of participant_____ Date_____

Appendix 10: Participants informed consent -students.

Research Title

Acquisition of competence: an analysis of clinical teaching and learning of midwifery at

Kamuzu College of Nursing

I understand I am asked to participate in a study which analyses the clinical teaching and learning of midwifery at Kamuzu College of Nursing. By agreeing to participate in this study, my role will be that of a co-researcher because of the nature of the study. I understand that I will be engaged in face-to-face conversational interviews regarding my clinical learning of midwifery at KCN. The interview will take place at a place of my convenience and will be recorded. I have been assured of my anonymity and there are no known risks associated with the study.

My participation is voluntary, and I am free to withdraw from the study at any time I wish without facing any repercussions.

I understand that all data will be kept confidential, but the information will be used for publication and presentations.

The study has been explained to me. I have read, and I understand the information on the consent form, and I agree to participate. I will get a copy of the signed consent and the researcher is ready to answer any questions I may have.

Signature of participant_____Date_____

Signature of researcher_____Date_____

Appendix 11: Letter of permission to hospital directors

The Hospital Director

Dear Sir/Madam

Re-request for permission to conduct a research study titled "Acquisition of competence: an analysis of clinical teaching and learning of midwifery at Kamuzu College of Nursing".

My name is Chrissie Phiri and I am currently studying at Swansea University. As part of my study programme, I am expected to complete a research study in fulfilling the requirements of a PhD programme.

The study involves new graduate midwives working in the labour and delivery unit in your institution. The participants will participate in an interview and focus group discussions.

Confidentiality and privacy will be maintained always - thus anonymity of participants and institution, will be observed and any information provided will not be made public or available to others, except to my research supervisor.

Please do not hesitate to contact me should you require any additional information.

Yours sincerely

Chrissie Phiri. Mobile [redacted] email [redacted]

Appendix 12: Guide for conversational interviews with educators

Research title:

Acquisition of competence: an analysis of teaching and learning of midwifery at Kamuzu College of nursing.

These questions will guide the conversational interviews with midwifery lecturers participating in the study

1. Tell me about the curriculum that you are using for the teaching of midwifery
2. Based on the curriculum you have just described how do you ensure you're your students will be fit to practice effectively
3. In which areas are you strong as a teacher
4. In which area you weak as a teacher
5. What has been done about the weak areas?
6. What areas are of concern to you in midwifery education at Kamuzu College of Nursing
7. What changes do you recommend?
8. What kind of training have you had in teaching?
9. If none, how has this affected your teaching?

Appendix 13: Guide for conversational interviews with senior midwives

Research title:

Acquisition of competence: an analysis of teaching and learning of midwifery at Kamuzu College of nursing.

These questions will guide the conversational interviews with senior midwives participating in the study

1. Tell me your perceptions about the performance of midwifery graduates from Kamuzu College of nursing
2. What are your expectations regarding the performance of graduates from the mentioned college?
3. If response to question 1 is not favourable. Why do you think the performance is poor?
4. Tell me your involvement in the learning of the students
5. what areas are of concern to you about the teaching and learning of midwifery at the college
6. Tell me how you think performance of the graduates can be improved

Appendix 14: Guide for focus group discussion with graduate midwives

Research title:

Acquisition of competence: an analysis of teaching and learning of midwifery at Kamuzu College of nursing.

These questions will guide the focus group discussions with graduate midwives participating in the study:

1. Tell me your experiences working as qualified midwives
2. What challenges are you having?
3. Do you think the midwifery programme prepared you adequately to function as a midwife?
4. What areas do you think should have been emphasised?
5. What areas should have been included?
6. What areas should have been left out?
7. In which areas are you competent?
8. In which areas do you lack confidence?
9. How are you coping with the challenges?

Appendix 15: Guide for conversational interviews with midwives

Analysis of the clinical teaching and learning of midwifery at KCN

Tell me about the curriculum used for midwifery education at KCN?

What do you think of the classroom and clinical teaching?

How do you prepare for clinical learning after learning the theory?

What do you think of the clinical teaching- the way it is done, the teachers, the contact hours?

Tell me what is expected of you by the employer as graduate/qualified midwives?

What is your understanding of what makes a good midwife?

How do you ensure that at the completion of the programme you will be competent midwives?

How are you assessed during clinical placements?

What are your views about these assessments?

What are your views about the clinical teaching? The way it is done, the teachers.

What changes would you recommend regarding midwifery education at KCN?

Appendix 7: Data collection instrument for curriculum, timetables, and student clinical assessment forms.

1. How are students enrolled into the programme?
2. How was the curriculum designed?
3. If there are learning outcomes in the curriculum, how are they designed?
4. What teaching/learning approaches are indicated in the curriculum?
5. How are classroom sessions scheduled?
6. How is the time allocated for theory and practical skill?
7. How is students' learning assessed?
8. What is included in the assessment?

Appendix 17: Matrix of findings and data sources for triangulation

Major finding			Sources of data			
	Senior midwives	Faculty members	KCN graduates	KCN students	Mzuzu graduates	Documents C, TT, AT
Nature of program						
Competency-based program		X				X (C)
Response to country needs		X				X (C)
Combined program	X	X	X	X		X (C)
Not appropriate for learning	X	X		X		
Program disapproved; teach midwifery separately	X	X	X	X		
Program implementation						
Sequencing: theory then practice		X	X	X	X	X (C), (TT)
Demonstrations and skill practice done at once		X		X		
Long classroom hours		X		X	X	X (TT)
Rotational placements		X	X	X	X	
Educational outcomes						
High expectations from graduates	X	X		X		X (C)
Graduates performance below expectations	X	X	X	X		
Graduates well prepared for practice			X		X	
Internship recommended		X		X		
Supervise new graduates	X					
Minimum requirements		X	X	X	X	X (C)
Minimum requirements unachievable		X	X	X	X	
Inadequate learning opportunities			X	X	X	
Large enrolment		X		X		
Vacuum extractions banned			X	X	X	

Completion done outside academic calendar		X	X		X	
Dishonest about minimum requirements	X		X		X	
Review minimum requirements			X	X		
Do vacuum extraction at the skills laboratory				X		
Central hospitals inappropriate for 3rd years				X		
Content						
More focus on theory than skill practice		X		X		X (TT)
Theory practice gap	X	X	X	X	X	
Teaching outdated information		X		X		
Changes in policy		X	X		X	
Lack of resources	X					
Reduce content				X		
Teaching and learning strategies						
Lecture method dominant		X	X	X	X	
Use demonstration for clinical teaching				X		
No peer teaching		X				
Peer teaching and role play				X	X	
No opportunities for skill practice		X		X		
Clinical teaching- demonstration	X	X		X	X	
Bad role models	X	X				
Good role models inaccessible				X		
Institution lacks male role models				X		
Support						
Supervision done by midwives, lecturers	X	X	X	X	X	
Frequency of supervisory visits	X	X	X	X	X	
No faculty on first day		X		X		
Assumed that midwives will support students		X				
Unequal support		X		X		

Have preceptors at teaching hospitals		X		X		
Too many students	X	X	X	X		
Lack of clinical skills	X	X				
Difficult to manage students at different levels	X					
Assessment of learning						
Assessments done by faculty members and midwives	X	X		X	X	
Real clients				X	X	
Have preceptors at clinical placements		X		X		
No formative feedback		X		X		X (C)
Assessments- summative, individual, group, overall evaluation		X		X		
Assessment tools						X (AT)
Group assessments disapproved		X	X	X		
Grading of assessment-norm referenced, influenced by interpersonal relationships, and past performance	X	X		X	X	X (AT)
Grade inflation	X	X		X		
Midwives pressurised to produce grades	X					
Students						
Students, entry into the program						X (C)
Influenced to enrol into the program	X			X	X	
Bad behaviours; Dishonest, lazy, lack interest	X			X	X	
Good profession			X		X	
Educational environment						
Poor interpersonal relationships with lecturers, midwives, and doctors		X		X	X	
Lack of resources; Human,	X	X	X	X	X	
Time	X	X	X	X		
Program to run for 5 years				X		

Teaching and learning materials	X	X		X		
Space-small skills laboratory		X				
Finances		X				
Poor Infrastructure -health facilities	X	X				
Unequal distribution of resources		X				
Educator needs and problems						
No supervision of faculty members		X				
No feedback from students	X	X		X		
No teaching skills	X	X		X		
Heavy work overload- many programs, large enrolment	X	X		X		
No job satisfaction		X				

Key
C – curriculum document
TT- Timetable
AT- Assessment tools