A FRAMEWORK FOR IMPLEMENTING AND SUSTAINING A CURRICULAR INNOVATION IN A MIDWIFERY PROGRAMME IN LESOTHO

by

Champion N Nyoni

2012152241

Interrelated publishable manuscripts submitted in fulfilment of the requirements for the degree,

PHILOSOPHIAE DOCTOR IN NURSING,

PhD (Nursing)

in the

School of Nursing,

Faculty of Health Sciences

UNIVERSITY OF THE FREE STATE

PROMOTER: PROF. Y BOTMA

NOVEMBER, 2018

DECLARATION

I hereby declare that the work submitted in this thesis ***"A framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho"*** is a result of my own independent investigation. Where assistance and support were sought, it was acknowledged appropriately.

I further declare that this work has not been submitted by me for a degree or qualification to any other university or faculty. I hereby cede copyright of this product in favour of the University of the Free State.

_____ November, 2018

CN NYONI

DEDICATION

Young African scientists are the foundation of the solutions of problems in Africa. This work is dedicated to all young African scientists with a big dream of changing their setting, their country, the continent and the world.

It can be done.

ACKNOWLEDGEMENTS

I express my deepest and most sincere appreciation to all who assisted and supported me during this journey, making this study a reality. I wish to mention the following people and organisations who played a significant part in the design and development of this work;

- My promoter, friend and mother, **Professor Yvonne Botma** – you have held my hand and mothered me for the last six years. Your presence in my life has changed my path, dreams and desires. Your insightful questions and calm approach towards problem solving were essential in making me see realities in African nursing science. All this was catalysed by the thinking juice, thank you so much;
- My family and friends – your understanding, support and distance during the last few years of the entire process are much appreciated. You constantly understood, why I always had to be on the computer with a mind that was always far away. You are special to me, and I thank you. Ngiyabonga;
- My employer – the Paray School of Nursing, for allowing me to use their resources and time to study, kea leboha;
- Special mention to my colleagues at the Paray School of Nursing, who came in handy as sounding boards – thank you so much for all your time and support;
- The nursing colleges in Lesotho, including their awesome students who made this thesis what it is – thank you for your support and being part of this research. We will get there, with time;
- Dr L Wolvaardt, Dr C Gordon, Mr T Munangatire and Mrs R Nyamakura – I appreciate you for the critical role you played as part of the integrative review team;
- Tawanda Nyoni and Smith Shanyurai– thank you for assisting with the data collection, logistics and also the moral support;
- A special mention is made to my SAFRI family – your engagement with all the levels of this research has been my mainstay in the journey. Thank you for making me stand on your shoulders.
- Dr R Albertyn and Prof. M Rowe – thank you for playing a vital role in critically reading the manuscripts in this thesis. Thank you for the time, the skills and making me think otherwise.

- Ms J Viljoen – my hard working language editor, thank you for your patience and reviewing all drafts of this work, without you I could not have written all of this.

To all others not mentioned above, you have a special space in my heart and thank you.

"It's not about the broken windows of the classroom … it's about what happens in the classroom"

VC Burch (2013)

ABSTRACT

Background: In 2010, the government of Lesotho promulgated the adoption of competency-based education for all nursing and midwifery programmes. A competency-based curriculum underpinned by a constructivist philosophy was developed for the one-year post-basic midwifery programme, and implemented for the first time in 2014. Disparities in the enactment of the curriculum, including challenges associated with the implementation of the new curriculum, were observed after two years of continuous implementation. Such disparities and challenges threatened the sustainability of the entire midwifery programme in Lesotho.

Purpose: This study sought to develop a framework to implement and sustain the curricular innovation in the midwifery programme in Lesotho.

Methods: Multiple methods research informed by the theory-of-change logic model guided the development of the framework through a multi-phased approach. The initial phase synthesised literature on strategies to sustain curricular innovations in higher education through an integrative review. The second phase of the research described the implementation of the new curriculum through engaging with primary stakeholders from all nursing education institutions in Lesotho. In the final phase, findings of the preceding phases were used to develop the framework, which was validated by primary implementers of the new curriculum.

Results: The outcome of this research provided a framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho.

Conclusion: Lesotho battles with perennially high maternal and neonatal mortality indicators, partly associated with the training of midwives. Competency-based education promises to improve the quality of midwives graduating from nursing education institutions. The promise of competency-based education may not be realised in Lesotho, as challenges during the implementation of the new curriculum are evident and threaten the sustainability of the entire programme. We propose a framework, based on the contextual realities in Lesotho that could support the implementation and sustainability of the new curriculum in midwifery, further sustaining the entire programme.

Key words: Competency-based education, curricular innovation, midwifery, Lesotho

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS AND ACRONYMS

AHRQ	Agency for Healthcare Research and Quality
AIDS	Acquired Immuno-Deficiency Syndrome
AJHPE	African Journal of Health Professions Education
CANMEDS	Canadian Medical Education Competencies
CBC	competency-based curriculum
CBE	competency-based education
CBMP	Competency-based midwifery programme
CHE	Council on Higher Education (Lesotho)
CoN	College of Nursing
DHS	Demographic Health Survey
DoHET	Department of Higher Education and Training (South Africa)
EPB	evidence-based practice
FG	focus group
HEI	higher education institution
HoD	head of department
HRSEC	Health Sciences Research and Ethics Committee
ICM	International Confederation of Midwives
IR	integrative review
LMoH	Lesotho Ministry of Health
MAC	Maluti Adventist College
MoH	Ministry of Health
MoH-REC	Ministry of Health – Research and Ethics Committee
NEI	nursing education institution
NEPI	Nursing Education Partnership Initiative

NHTC	National Health Training College
OSCE	objective structure clinical examination
PHC	primary health care
PICOT	population intervention control outcome timeframe
SAAHE	South African Association of Health Educationalists
SAFRI	Sub-Saharan African FAIMER Regional Institute
SoN	School of Nursing
SWOT	strengths, weaknesses, opportunities and threats
UFS	University of the Free State
UNFPA	United Nations Population Fund (formerly United Nations Fund for Population Activities)
US	United States
WHO	World Health Organization

CONCEPTUAL AND OPERATIONAL DEFINITION OF TERMS

Curricular innovation: A curricular innovation is a managed process of development, whose principal products are teaching and/or testing materials, methodological skills and pedagogical values that are perceived as new by potential implementers (Markee, 1997). In this thesis, the concept of curricular innovation is used to refer to the competency-based curriculum introduced in the midwifery programme in Lesotho, including its associated implications during implementation.

Framework: Jhpiego (2003) defines a framework as a broad overview, outline or skeleton of interrelated items that support a particular approach. In this thesis, a framework will be viewed as an outline of interrelated concepts that describe an overview of how to implement and sustain a curricular innovation in a midwifery programme.

Implement: To implement involves putting a plan into action. In this thesis, to implement is viewed as the execution of the described competency-based curriculum for the midwifery programme in Lesotho.

Midwifery programme: A midwifery programme is a structured formal professional programme focused on the training and production of professional midwives (International Confederation of Midwives [ICM], 2014). In this thesis, the midwifery programme refers to the one-year post-basic Diploma in Midwifery programme offered at nursing education institutions in Lesotho.

Midwife: A midwife is a person who had been regularly admitted to a midwifery education programme duly recognised in Lesotho, who successfully completed the prescribed course of studies in midwifery, and who has acquired the requisite qualification to be registered to midwifery practice (Lesotho, 1998). In this thesis, when the concept ‘midwife’ is used, it refers to an individual registered by the Lesotho Nursing Council as a midwife and possessing a minimum of a Diploma in Midwifery qualification or higher.

Nurse: A nurse is an individual who has undergone formal training in a professional nursing programme at an accredited or recognised institution (Lesotho, 1998). In this thesis, a nurse is an individual registered with the Lesotho Nursing Council as a nurse and possessing a minimum of a Diploma in Nursing qualification and higher.

Nurse-midwife: A nurse-midwife is defined as a registered nurse with an additional qualification in midwifery (Merriam-Webster Dictionary, 2018). In this thesis, the concept nurse-midwife applies to individuals registered as both a nurse and midwife.

Nursing education institution: A nursing education institution is a higher education institution focused on the training or education of nurses and other disciplines within nursing, including midwifery, and accredited by a regulatory body (South Africa, 2005). In this thesis, nursing education institutions refer to higher education institutions in Lesotho that educate or train nurses and midwives, namely Maluti Adventist College, the National Health Training College, Paray School of Nursing, Roma College of Nursing, and Scott College of Nursing.

Primary stakeholders: Primary stakeholders are people with direct and continued interest and interaction within a situation (Garcia-Castro & Francoeur, 2014). In this thesis, primary stakeholders comprise students, educators and administrators engaged with the implementation of the competency-based curriculum within the midwifery programme in the various nursing education institutions in Lesotho.

Sustain: To sustain means making something continue for a period of time (Johnson, Forgaty, Fullerton, Blueston, & Drake, 2013), and in this thesis, the concept ‘sustain’ is related to keeping up or maintaining the appropriate implementation of the competency-based curriculum in the midwifery programme in Lesotho.

PREAMBLE

The format of this thesis is in accordance with the recommendations for a PhD through interrelated publishable articles, as presented within the Faculty of Health Sciences of the University of the Free State, South Africa. This format includes the submission of a collection of interrelated publishable or published articles in conjunction with introductory and summary chapters, as opposed to the traditional monograph format.

This thesis has six chapters. The first chapter is an introductory chapter which presents the overall purpose and methods of the study. The next four chapters are the interrelated publishable and published articles. These four chapters comprise a published article, an accepted article which was published online, and two manuscripts under review. The final chapter reflects conclusions, recommendations and limitations of the study.

The contribution of the researcher is indicated for each manuscript, with the details of the journals in which the manuscript was submitted, including the status of each manuscript. The researcher followed all the processes regarding research, including planning, conducting and preparing the research for examination with the same key milestones as of a traditional thesis.

The methodology used in the development of this framework is described thoroughly in the introductory chapter. Manuscripts further describe abridged versions of their respective aspects of the entire methodology guided by journal requirements. A fair amount of repetition of issues and concepts may be noticed among the manuscripts and throughout this thesis. This repetition is due to the interrelatedness of the manuscripts and their contribution in the development of the framework.

Manuscripts are presented in the format required by the specific journals; hence, the stylistic differences with respect to font, line spacing, and even headings in this thesis. Please note that with respect to this thesis, the American Psychology Association (APA), sixth edition, referencing style was used as the main referencing style in the first and last chapter. Each chapter bears its own reference list, reflecting references consulted in constructing the content of the chapter. With regards to associated addenda, author guidelines will be specific for manuscripts under review, while accepted articles would have reviewer comments.

SCHOLARLY CONTRIBUTIONS FROM THIS WORK

PHASE	CONTRIBUTION FOR THIS WORK
PHASE 1: INTEGRATIVE REVIEW	▪ Nyoni C.N. and Botma Y. 2017. Strategies to sustain curricular innovations in higher education: An integrative review. Oral presentation at the *South African Association of Health Educationalists (SAAHE) conference in Potchefstroom*, South Africa. June, 2017. ▪ Nyoni C.N. and Botma Y. 2017. Strategies to sustain curricular innovations in higher education: An integrative review. Oral presentation at the *Annual Research Forum of the Faculty of Health Sciences of the University of the Free State*, Bloemfontein. August, 2017. ▪ Nyoni C.N. and Botma Y. 2018. Strategies to sustain curricular innovations in higher education: An integrative review. Submitted to the Journal: Curriculum Inquiry
PHASE 2: COMMUNITY NEEDS ASSESSMENT	▪ Nyoni C.N. and Botma Y. 2018. Sustaining a newly implemented competence-based midwifery programme in Lesotho: Emerging Issues. *Midwifery*, 59 (April), 115–119. [published] ▪ Nyoni C.N. and Botma Y. 2018. Sustaining a newly implemented competence-based midwifery programme in Lesotho: Emerging Issues. Oral presentation at the *South African Association of Health Educationalists (SAAHE) annual conference in Durban*, South Africa. June 2018. ▪ Nyoni C.N. and Botma Y. 2018. Implementing a competency-based midwifery programme in Lesotho: A gap analysis. Accepted and published on-line at: *Nurse Education in Practice* ▪ Nyoni C.N. and Botma Y. 2018. Implementing a competency-based midwifery programme in Lesotho: A gap analysis. Oral presentation at the *Annual Research Forum of the Faculty of*

	Health Sciences of the University of the Free State, Bloemfontein, August 2018.[1]
PHASE 3 FRAMEWORK	▪ Nyoni CN and Botma Y. 2018. A framework for implementing and sustaining a curricular innovation in a higher education midwifery programme Submitted to the *African Journal of Health Professions Education (AJHPE*) and is under review

[1] Presentation was awarded "Runner-up Educational Paper: Junior Category"

1 OVERVIEW OF THE STUDY

We never educate directly, but indirectly by means of the environment. Whether we permit chance environments to do the work, or whether we design environments for the purpose makes a great difference

John Dewey (2012)

CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This chapter provides an orientation to the overall structure and outline of this thesis. Initially, the chapter presents the motivation for undertaking the research study by describing the relevant context and problem, then describes the methods undertaken in the entire research study. The chapter concludes with a description of the layout of the entire thesis, including a concluding summary.

1.2 BACKGROUND

The Flexner report of 1910 (Flexner, Pritchet & Henry, 1910) on medical education in the United States, catalysed a revolution of education for the health professions in the 20th century (Cooke, Irby, Sullivan, & Ludmerer, 2006). This report highlighted a non-alignment in the training of medical students and their practice, with special mention of the limited knowledge in basic sciences in the medical curricula in the United States at that time (Flexner et al.1910). The findings and implications of the report had rippling effects in education for the health professions in North America and the rest of the world (Thibault, 2013). Such rippling effects include:

- increased allocation of resources for the training of health professionals culminating in –
- improvements in teaching and learning;
- improvements in student assessment,
- integration of skills training,
- increased research in health professions education; and
- curricular innovations (DePaola & Slavkin, 2004; Duffy, 2011; Thibault, 2013).

The curriculum may be perceived as a multi-layered existentiality that guides the design and delivery of academic and/or professional programmes (Smith et al., 2017). Literature further reflects the definition of a curriculum based on either content or process or product or praxis (Fraser & Bosanquet, 2006). Content-focused definitions

of the curriculum reveal specifications of what students should be taught, while definitions focused on the process reflect how a curriculum is presented to students (Barnett & Coate, 2005). Product-oriented descriptions of the curriculum are focused on the outcome of the curriculum, while the praxis dimension reveals the curriculum as empowering and emancipating (Grundy, 1982). Ultimately, the curriculum within health professions education links social needs, policies, teachers, students and society (Kern, 2015).

The curriculum can also be viewed as three layers (Prideaux, 2003). The first layer refers to the espoused curriculum, which is usually described in approved curriculum documents. The second layer is the enacted curriculum, revealing the interaction between the institution, its educators and students. The third layer refers to the student's total experience of their education process (Prideaux, 2003). Policymakers and social influences (such as health indicators, new evidence, and even national development goals) influence the description of an espoused curriculum (Kern, 2015). The need to develop practitioners that have an influence on the social determinants of health is a proximal example of how social needs influence the espoused curriculum.

'Enactment' refers to the process of translating the espoused curriculum, as described in approved curriculum documents, into practice (Prideaux, 2003; Remillard & Heck, 2014). Curriculum enactment is influenced by a variety of factors, including education approaches and strategies as described in the espoused curriculum. The ability of the educators and their own understanding of what is expected of them as well as the environment in which the curriculum is enacted (including available resources) further influence the enactment of a curriculum (Lopes & Macedo, 2009). Students are unique individuals who, when put in a group, bring their own experiences and background into their interactions further influencing approaches of curriculum enactment by educators. While curriculum enactment may never mirror the espoused curriculum (Lopes & Macedo, 2009; Wilson, Rudy, Elam, Pfeifle, & Stauss, 2012), academic programmes should attempt as much as possible to support the enactment of the curriculum as described in the espoused curriculum to limit possibilities of compromised graduates and curriculum drift.

Curriculum drift is described as the difference between the espoused curriculum and the enacted curriculum (Woods, 2015). Limited literature discusses the margin inherent

in the concept of curriculum drift and the extent of the implications of curriculum drift on graduates of professional programmes; however, the seminal work of Wilson et al. (2012) reflect on the complexity of preventing curriculum drift in higher education. Rentschler and Spegman (1996) attest that a paradigm shift is essential in preventing curriculum drift; however, paradigm shifts take a longer time and may be influenced by the experience of implementing the new curriculum supported by discourses in the philosophy inherent in the espoused curriculum. Curriculum drift epitomises retrogressive development perpetuated by a poorly managed or poorly sustained change process (Robins, White, & Fantone, 2000).

Harden (2009) and Kern (2015) further describe six elements of the espoused curriculum in health professions education. These elements are: learning outcomes, learning approaches, content, educational strategies, education environment and assessments. Such elements, which position the curriculum, are inclusive of the content, process, product and praxis, based on the decisions by stakeholders engaged in curriculum development. Curriculum developers in health professions education programmes, like midwifery, are expected to define these elements in designing and developing curricula for academic programmes. Markee (1997) argues that changes to elements of the espoused curriculum as described by Harden (2009), may result in the introduction of teaching strategies, assessment methods and even teaching pedagogies that are perceived as new by potential implementers, and such constitutes curricular innovations.

Professional education programmes, such as midwifery, are guided by a curriculum. Curricular innovations are inherent in improving the quality of such a professional education programme as institutions thrive to produce graduates who have an influence on the health outcomes of their patients (United Nations Population Fund [UNFPA], 2014). Introducing curricular innovations in professional programmes, such as midwifery, has an effect across the entire programme.

Changes associated with implementing a curricular innovation need to be accommodated during the planning, design and implementation of a curricular innovation to enhance the sustainability of the curricular innovation (Fullerton, Thompson, & Johnson, 2013) thus, avoiding curricular drift (Woods, 2015). Challenges associated with sustaining curricular innovation in health professions education –

specifically in nursing (Martel & Bird, 2010) and midwifery (Fullerton et al., 2013) – have been documented globally. Sustaining change is essential for curricular management.

1.3 CONTEXT OF THE STUDY

Lesotho is a small low-income sub-Saharan African kingdom, which is an enclave of South Africa. This kingdom has an estimated population of 2.2 million people who predominantly live in rural areas (Lesotho Ministry of Health [LMoH], 2014). The rural areas are sparsely populated, on rugged terrains, separated by lofty mountains nested in poor physical infrastructure. Access to healthcare in this setting is a challenge, as the majority of the population take 120 minutes on average to access their nearest health centre predominantly by foot (LMoH, 2014).

The health delivery system in Lesotho is primary healthcare-driven, linking communities through primary healthcare centres right up to specialised hospitals. Primary healthcare centres, which are led by nurse-midwives, are the initial port of call for most patients (LMoH, 2013). These centres are scattered all over the districts and provide basic healthcare to patients with minor ailments. Complicated cases, including childbirths, are referred to the next level of care, which are the district hospitals. These district hospitals are led by medical officers, and are distributed in such a way that each of the ten districts in the kingdom has at least one district hospital. Advanced care is provided in such hospitals, including childbirth and minor surgery. Complications at this level are further referred to the tertiary hospital in Maseru, the capital of Lesotho, and other specialist referral hospitals like the psychiatric mental hospital in Maseru.

This health delivery system battles with meeting the needs of its population. Chief among such challenges is the availability and the competence of the human resources for health. Nurse-midwives form the bulk of healthcare workers, and are integrated throughout the healthcare system. The number of nurse-midwives in practice seems not to be enough, and the standards used to calculate such numbers do not take into account the geographical and topographic realities of Lesotho. The World Health Association (WHO) prescribes two nurses for a population of 10 000 for countries in the sub-Saharan African region while Lesotho has 0.6 nurses for the same population (LMoH, 2012).

The limited numbers of nurse-midwives in Lesotho is compounded by their limited professional competence within the healthcare setting. A variety of studies and reports link the limited professional competence of nurse-midwives to the nature of their training (LMoH, 2012; Makhakhe, 2013). Due to the expansion of the primary healthcare services in Lesotho, newly qualified nurse-midwives are often deployed to health centres were they are the most qualified personnel and often not directly supervised. These nurse-midwives are the first and only healthcare workers to which ordinary Basotho[2] may have access, further emphasising the need for competent nurse-midwives (LMoH, 2013).

Midwifery training is perceived as compulsory in Lesotho, as the government, which is the biggest employer, only hires qualified nurse-midwives. Such a stance was informed by the perennially high maternal and neonatal mortality (UNFPA, 2017) and is therefore viewed as a strategy to influence maternal and neonatal mortality indicators in Lesotho. Every nurse is therefore required to have a midwifery qualification before he or she can be employed within the public health system. The public health system is the biggest employer of nurse-midwives in the Kingdom.

There are five nursing education institutions (NEIs) in Lesotho that offer the one-year post-basic Diploma in Midwifery programme, namely –

- the National Health Training College (NHTC), which is owned by the government;
- Maluti Adventist College (MAC);
- Scott College of Nursing (Scott CoN);
- Roma College of Nursing (Roma CoN); and
- Paray School of Nursing (Paray SoN) – the last four are all owned by different churches.

Over the years, the Diploma in Midwifery programme in Lesotho was presented in a content-driven, teacher-centred traditional approach (Botma, 2014). In this approach, educators dictated notes to students, presented lectures on specific subjects, and barely integrated technology-enhanced approaches to teaching (Botma, 2014). The source of content for the educators was gleaned from three midwifery textbooks and the educators' own notes, which were rarely updated. The student's role was limited to

[2] 'Basotho' refers to the local residents of Lesotho.

note taking and occasionally asking questions with limited student-to-student interactions during lectures. Clinical teaching was predominantly the duty of the nurse-midwives in the wards, who exhibited role conflict with their primary role of patient care (Nyoni & Barnard, 2016). Summative examinations consisted of written examinations and two practical procedures at the end of the year, which often included non-midwifery-related procedures (Nyoni & Botma, 2017). Ultimately, the graduates felt ill-prepared for their role as independent midwives (Makhakhe, 2013), especially within primary healthcare settings, where they are expected to make decisions that may mean life or death to their patients.

Through the Nursing and Midwifery Strategic Plan of 2010 (LMoH, 2012), the government of the Kingdom of Lesotho adopted competency-based education (CBE) for the training of nurses and midwives. Competence was viewed as invariably linked to a complex situation where the midwife was expected to solve problems through applying critical thinking and clinical reasoning in executing a judgement in collaboration with the patient, family and other healthcare providers (Fernandez et al., 2012).

The Council on Higher Education [Lesotho] (CHE) was constituted at the same time CBE was adopted. The purpose of the CHE was to monitor and improve the quality of higher education in Lesotho (CHE, 2013). The integration of CBE for midwifery and the establishment of the CHE were meant to drive an agenda related to quality midwifery programmes in higher education institutions (HEIs) in Lesotho. The products of such programmes, namely competent midwives, were expected to improve the quality of care of patients in the health delivery system and further influence the maternal and neonatal mortality indicators. Figure 1.1 presents an abridged version of the strategy by the government of the Kingdom of Lesotho, aimed at improving the quality of nursing and midwifery education to influence the maternal and neonatal indicators.

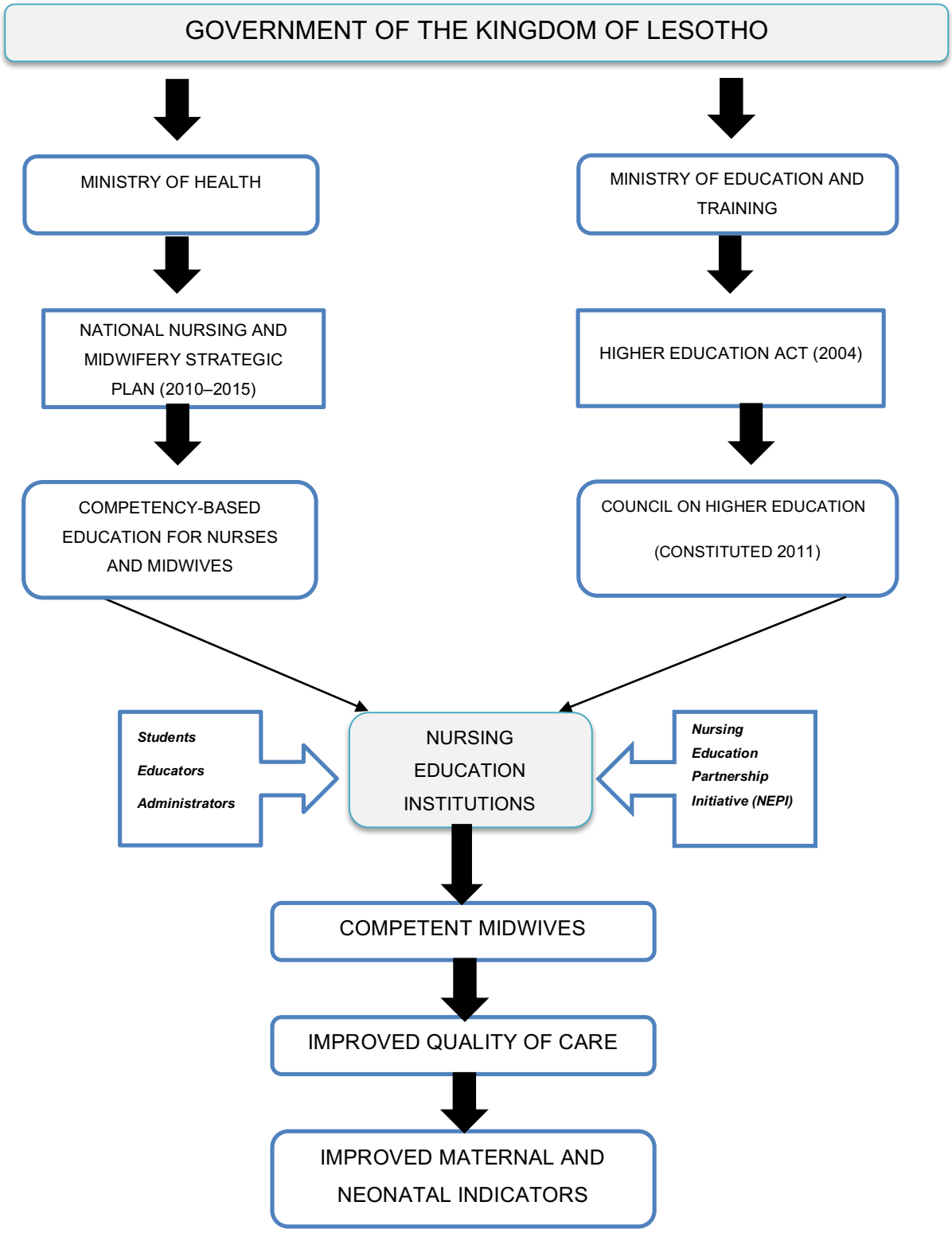


Figure 1.1: Improving midwifery in Lesotho

Source: Author generated

CBE drove the need for re-engineering of the entire midwifery programme, starting with the development of the competency-based curriculum (CBC). A rapid assessment on the needs and readiness of the NEIs to implement a CBC (see Botma, 2014) preceded and informed the development of the first ever CBC for the one-year post-basic Diploma in Midwifery programme. The curriculum development exercise was supported by the Ministry of Health in partnership with the Nursing Education Partnership Initiative (NEPI), which was a subsidiary grant from the United States (US) President's Emergency Fund for AIDS (Middleton, 2014: S25).

Table 1.1 describes the CBC developed for midwifery programme in Lesotho using a model developed by Harden (2009).

Table 1.1 The curricular innovation in the CBC

Harden's Elements	Innovation in the CBC
Learning outcomes	Learning outcomes in the CBC were informed by the International Council of Midwives' (ICM) essential competencies for basic midwifery practice (ICM, 2013b) and adapted to suit the local context through stakeholder negotiations and engagement. Adaptations of these competencies included the introduction of a research-specific learning outcome and exclusion of learning outcomes associated with contraception.
Content	The content in the CBC was extracted directly from the ICM essential competencies for basic midwifery practice (ICM, 2013b) Local health indicators were used to modify such content.
Educational strategies	Socio-constructivism (see Amineh & Asl, 2015) was adopted as the learning theory underpinning the CBC. Adopting such a learning theory implied that educators in this setting were expected to develop student-centred teaching and learning materials. Such material was expected to engage students within their social context through meaning making.
Learning opportunities	The principle of authenticity underpinned the approaches towards learning opportunities. Using both standardised patients and high-fidelity birthing simulators, simulation-based education was interlaced with learning in real-world settings. Learning in a real-world setting was to be aligned with the primary healthcare approach as the health delivery system of Lesotho. Students needed to be placed within decentralised learning platforms inclusive of the community and in primary healthcare settings.
Education environment	The principle of scaffolding underpinned the description of the education environment (Brunner, 1985), where the NEIs needed to support students in their institutions in the classroom during learning and also in the clinical placement. Such support was to be reflected in the learning material, and through facilitation in both the class and clinical setting.

Assessment	Constructive alignment (see Biggs, 1996) and integrative assessments were used to transform assessments within the CBC. Assessments had to align learning outcomes as described in the curriculum with teaching and learning activities. Assessments had to assess higher-order thinking in line with the definition of competence in this setting.

The primary implementers of the CBC from all the NEIs were engaged in intensive training on the development and implementation of a competency-based midwifery programme (CBMP) guided by a consultant in nursing education and supported by the NEPI for a period of two years. Such training exercises were focused on implementing the new curriculum, including development of new learning material, assessment approaches, leadership and change management (Botma & Nyoni, 2015; Middleton, 2014; Nyoni & Botma, 2017).

1.4 PROBLEM STATEMENT

A CBC for the midwifery programme was introduced in all the NEIs in Lesotho for the first time in 2014. The need to introduce the CBC was driven by the demand of one institution to establish a midwifery programme and the alignment of NEIs with the strategic directives of the MoH. Two years after continued implementation of the CBC, disparities in the enactment of the curriculum among and within NEIs emerged. Such disparities threatened the sustainability of the entire CBMP in Lesotho.

Disparities in the enactment of the CBC were evidenced through discussions with primary stakeholders and from inter-college meeting minutes. Midwifery educators struggled with applying relevant educational theory in designing teaching and learning material (Botma & Nyoni, 2015). In most institutions, such teaching and learning materials were not even designed or used, and students claimed to have not received any learning material from their educators. Teaching approaches embraced strategies in the previous curriculum, and the quality of assessments were poor. The clinical practice environment seemed not to be ready for students enrolled in the CBMP as clinical instructors and supervisors exhibited role confusion in the new programme. Only one NEI had their CBMP fully accredited by the CHE (CHE, 2017), while the rest struggled with meeting programme accreditation requirements.

NEIs did not have a strategy or framework to implement and sustain the CBC successfully within their midwifery programme. The consequences of not having a

strategy or framework to guide the implementation of the new curriculum would have included curriculum drift, which might have had dire consequences, especially on the graduates of the programme, who would not have been able exhibit the expected curriculum outcomes at graduation and in practice. Therefore, a strategy or framework to support the implementation and sustaining of such a curricular innovation in the midwifery programme in Lesotho was essential for NEIs implementing the CBC.

1.5 RESEARCH QUESTION

The current research attempted to answer the following question: *How can a curricular innovation in the midwifery programme in Lesotho be implemented and sustained?*

1.6 PURPOSE OF THE STUDY

The purpose of this study was to develop a framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho.

1.7 RESEARCH OBJECTIVES

The objectives of this study were to:

- explore and describe strategies used to sustain curricular innovations in higher education through an integrative review (Phase 1);
- describe factors influencing the implementation of a curricular innovation in the midwifery programme in Lesotho (Phase 2);
- describe the implementation of the competency-based midwifery programme in Lesotho, using the ICM global standards for midwifery education (Phase 2);
- develop a framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho (Phase 3); and
- validate the developed framework (Phase 3).

1.8 THE RESEARCH PARADIGM

The research paradigm articulates the researcher's world view, which is aligned to a set of common beliefs and agreements shared between scientists about how problems should be understood and addressed (Kuhn, 1962). Such world view influences how the researcher responds to the research question and what the response is. Wilson and McCormack (2006) state that failure to describe the paradigmatic perspective of any study renders findings from such a study meaningless and worthless, as chances of flawed conclusions are high. In the current study, the researcher adopted a

constructivist paradigm towards the overall research study. A constructivist paradigm reflects the notion that knowledge is socially constructed by people active in the research process through experience and reflection (Mertens, 2015).

Based on a constructivist paradigm, the researcher was aware that components of the framework for implementing and sustaining a curricular innovation in the midwifery programme in Lesotho were to be influenced by the experiences and reflections of the primary stakeholders, nested within the academic landscape and contextual realities of a developing country like Lesotho.

In enhancing the application of the paradigmatic perspective, relevant ontological, epistemological and methodological assumptions are discussed with the essence of alignment, knowing that each assumption influences the other.

- ***Ontology***: Scotland (2012) defines ontology as what constitutes the nature of knowledge and characteristics of reality. In this study, the researcher assumed a relativist ontology (White, 2007) supporting the notion that there are multiple realities and such realities can be explored and meaning constructed of them through human interactions between the researcher and the participants (Kivunja & Kuyini, 2017).
- ***Epistemology***: The focus of epistemology is on how the researcher can know and explain reality (Scotland, 2012). In this study, the researcher assumed a subjectivist epistemology (White, 2007). Reality in this case was generated through an interactive process between the researcher and the study participants involving dialogue, questioning, listening, reading and writing (Kivunja & Kuyini, 2017). The researcher made meaning of the data through his own independent and cognitive processing, informed by his interaction with the participants of the study. The generation of reality in this case was also influenced by the researcher's background, including his own personal, cultural and historical experiences related to the educational landscape in Lesotho.
- ***Methodology***: Methodological assumptions reflect procedures that specify how researchers must study and investigate what must be known (Botma, Greeff, Mulaudzi, & Wright, 2010). In this study, the researcher adopted a naturalist methodology (Glaser, 2007) allowing the researcher to gather data from natural settings in which the participants experienced the phenomena (Kivunja & Kuyini,

2017). The naturalist methodology was articulated through qualitative research executed in multiple methods.

1.9 CONCEPTUAL FRAMEWORK

The theory-of-change logic model (Kellogg Foundation, 2004), a derivative of the logic model, was used as the conceptual framework for this study. The theory-of-change logic model allows for a systematic and visual way of presenting and sharing concept relationships within a framework. Unlike other logic models, the theory-of-change logic model allows the researcher to demonstrate conditions in which proposed strategies could work in this context.

Figure 2 reflects elements of the theory-of-change logic model, which were addressed during the design of the framework to implement and sustain a curricular innovation in a midwifery programme in Lesotho.

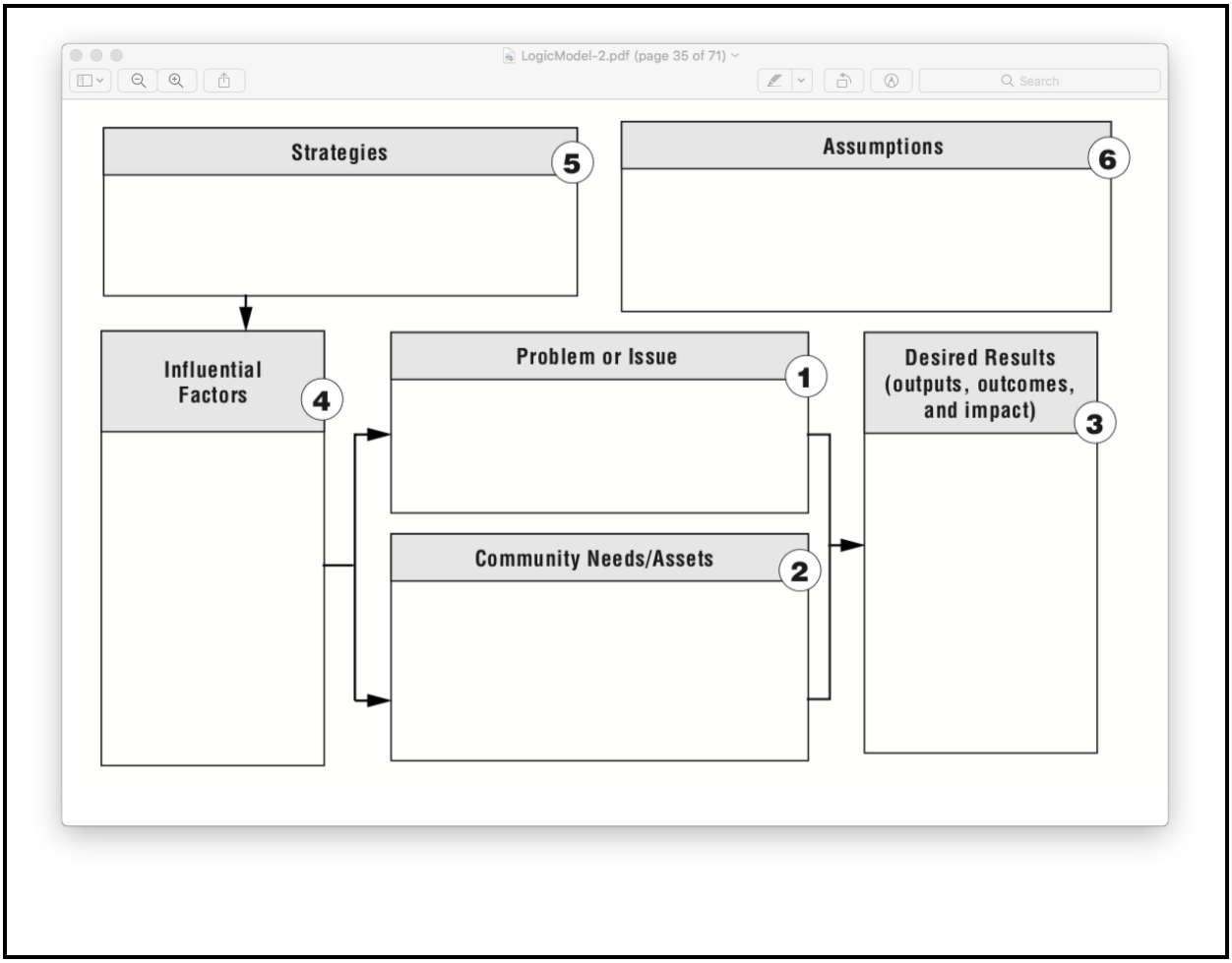


Figure 1.2 Concepts inherent in the theory-of-change logic model

Source: Kellogg Foundation (2004)

Through the research design, the researcher addressed components of the theory of change logic model to design the framework in order to implement and sustain curricular innovations in the midwifery programme in Lesotho.

1.10 RESEARCH DESIGN

A multiple methods research design was engaged in developing the framework to implement and sustain a curricular innovation in a midwifery programme in Lesotho. Such a design supported the articulation of the various components of the theory-of-change logic model thus meeting the objectives of this study. Three sequential studies were conducted to develop the framework. Table 1.2 reflects the multiple studies and their related outputs.

Table 1.2 Research design

PHASE	PURPOSE OF THE PHASE [objective in the main study]	ARTICULATION WITH THE LOGIC MODEL	RESEARCH TECHNIQUE	DATA	DATA ANALYSIS APPROACH	OUTPUTS
ONE	Describe strategies used in sustainin curricular innovations in higher education [objective a]	- Strategies	Integrative review	Literature on strategies used to sustain curricular innovations in Higher education	Inductive synthesis	Strategies used to sustain curricular innovations in higher education [Article 1]
TWO	Describe factors influencing the implementation of the curricular innovation in a midwifery programme in Lesotho [objective b]	- Influential factors	Qualitative research	Stakeholders in the implementation of the CBMP programme from all NEIs in Lesotho Documents used in the implementation of the CBMP	Inductive reasoning using Creswell (2013) steps of qualitative data analysis	Factors influencing the implementation of the curricular innovation in Lesotho [Article 2]
	Describe the implementation of the CBMP in Lesotho [objective c]	- Community needs and assets - Assumptions			Gap analysis and the ICM global standards for midwifery education Deductive reasoning and critical realism	A gap analysis of the implementation of CBMP in Lesotho [Article 3]
THREE	Develop and validate a framework for implementing and sustaining a curricular innovation in midwifery programme in Lesotho [objectives c & d]	- Community needs and assets - Assumptions - Desired results - Influential factors - Problem - Strategies	Development and validation	Data from Phase 1 and 2 Primary stakeholder validation	Consensus building	A framework for implementing and sustaining curricular innovation in a midwifery programme in Lesotho [Article 4]

Source: Author generated

The next section of the discussion will expand on each phase of the study.

1.11 PHASE 1: STRATEGIES TO SUSTAIN CURRICULAR INNOVATIONS IN HIGHER EDUCATION

The first phase of the study was utilised to describe strategies used to sustain curricular innovation in higher education.

1.11.1 PURPOSE OF PHASE 1

The purpose of this phase was to synthesise strategies used to sustain curricular innovations in higher education through an integrative review. This phase of the study articulated with the first research question and with step 5 within the theory-of-change logic model.

1.11.2 THE RESEARCH DESIGN OF STRATEGIES TO SUSTAIN CURRICULAR INNOVATION IN HIGHER EDUCATION

An integrative review (IR) was done to describe strategies to sustain curricular innovations in higher education. An IR is a comprehensive research methodology or a specialised type of literature review that allows for review, evaluation and synthesis of evidence reflective of a topic or issue, and is capable of generating new approaches and perspectives on the issue (Carliner, 2011). Evidence related to sustaining curricular innovation in higher education is spread throughout various methodologies, and an IR allows for inclusion of a broad range of evidence (Schick-Makaroff et al. 2016).

Going about an IR follows a process similar to contemporary research (Whittemore & Knafl, 2005). Figure 1.3 depicts the process followed in the development of the IR.

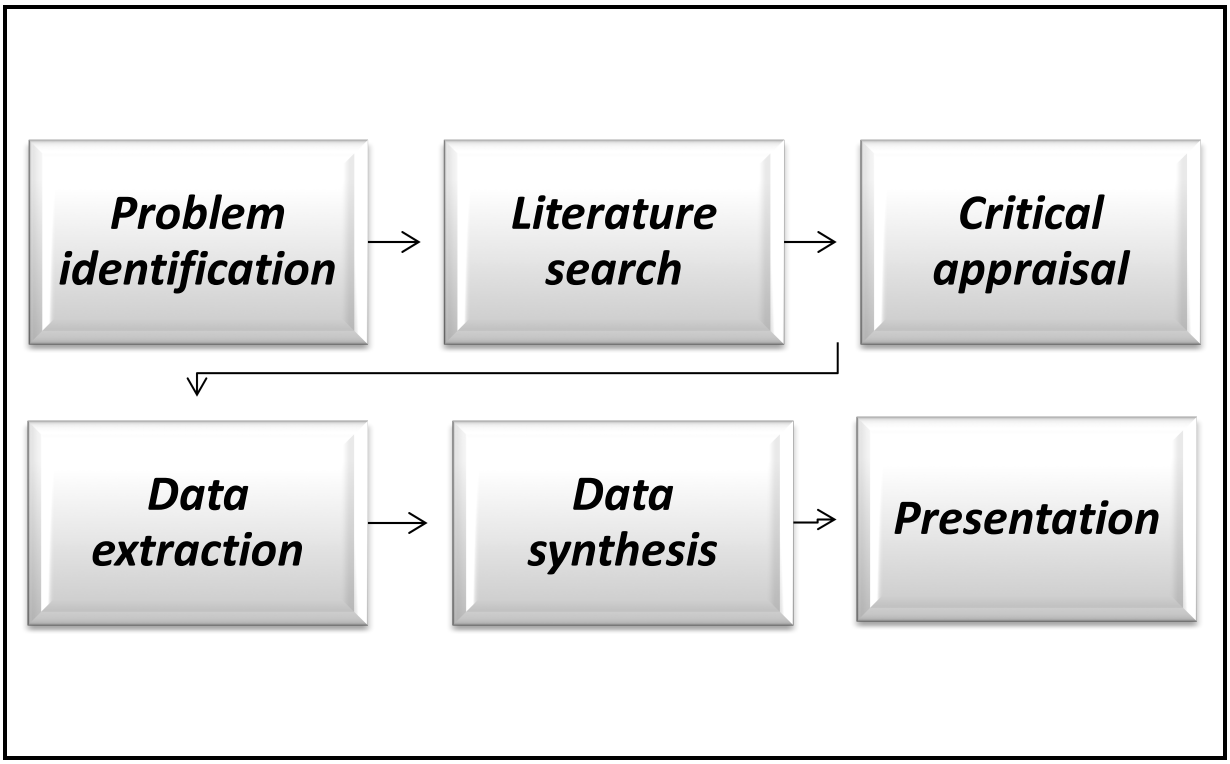


Figure 1.3 The integrative review process

Source: Author generated based on Whittemore and Knafl (2005)

1.11.2.1 Problem identification

The problem identification step was articulated through the quick and dirty search, refinement of the research question, defining the inclusion and exclusion criteria and ultimately describing the search strategy (Whittemore & Knafl, 2005). The sections below describe how these steps were articulated in this study.

a) The quick and dirty search

The quick and dirty search is done preliminarily to determine the scope of literature related to the problem presented (Carliner, 2011). Scoping of literature creates a platform for the refinement of the research question and also illuminates available literature related to the research question.

The quick and dirty search for this study was done using two databases, namely googlescholar.com and science direct by means of the following search terms:

> Stakeholders or educators (or teachers or lecturers); curriculum (change or innovation or implement or reform); higher education (sustain or maintain or support); health sciences (or nursing or allied).

The findings of this search resulted in a total of 1 240 hits on science direct and 1 910 hits on googlescholar.com from 1956–2016. The researcher noted main databases where the studies were presented, the nature and types of research designs used in generating some of the evidence, and any relevant search terms applied.

The findings of the quick and dirty search reflected a diversity of literature presented in various databases. These findings influenced the search string for this IR.

b) The refinement of the research question

Based on the findings of the quick and dirty search, the final research question guiding the IR was:

> *Which strategies were used to sustain curricular innovations or curricular reforms in higher education since 1996?*

Expressing the same question using the population intervention control outcomes and timeframe (PICOT) format:

P: higher education

I: curriculum innovation

C: not applicable

O: strategies to sustain curriculum innovation

T: from first of January 1996 to date

c) The inclusion and exclusion criteria

In this section, the four main components (Whittemore & Knafl, 2005:57) influencing the determination of the inclusion and exclusion criteria and how they were applied in this study are described.

- *Types of literature*: evidence in this study was provided in the form of published literature from diverse methodologies.
- *Sources of literature*: published literature was sought from electronic databases accessed through the University of the Free State electronic library.
- *Language*: published literature presented in English was included in this review.
- *Time span*: published literature dating from 1 January 1996 to 30 September 2016 was included in this review. These dates were influenced by the findings of the quick and dirty search. A limited number of articles related to sustaining curricular innovations were reported before 1996.

Therefore, the inclusion and exclusion criteria for this review were:

Inclusion criteria

Literature included in this review:

- reflected a curriculum innovation in higher education;
- was only available as full-text articles in English;
- was dated 1 January 1996 to the 30 September 2016; and
- reflected a strategy used to sustain a curricular innovation.

Exclusion criteria

The following criteria were used to exclude literature from review:

- literature on pre-, primary or high school education;
- literature where English versions could not be accessed or retrieved; and
- literature before 1 January 1996 or after 30 September 2016.

d) The search strategy

The search strategy informed the direction of the IR and by key concepts of the research question and application of the synonyms and techniques of the Boolean search strategy generating the following final search string:

> **Higher education** (education, tertiary); **curriculum** (prospectus, programme, program, syllabus, course, set of course, core curriculum, national curriculum); **innovation** (novelty, invention, revolution, origination, modernisation, improvement); **reform** (improvement, re-organisation, restructuring, modification, transformation, alteration, change); **strategies** (plans, policies, approaches, tactics, stratagems, schemes); **techniques** (methods, systems, practices, practises, procedures, performance, skills, modus operandi); **sustain** (withstand, tolerate, endure, weather, brook, stand, put up with); **support** (provision, sustenance, care, finding, backing, maintenance, upkeep, livelihood).

1.11.2.2 Literature search

The literature search was executed in three sequential steps, namely generation of abstract output, evaluation of generated abstract outputs, and a search for full texts and evaluation.

- **Generation of abstract output**

The researcher engaged a librarian from the University of the Free State (UFS) to clarify the search string and to search for data through electronic databases from the university library.

The refined search string was used to search for literature from various databases accessible from the UFS library. An abstract output was generated and stored in an electronic folder.

- **Evaluation of the generated abstract outputs**

The evaluation of generated abstracts was undertaken in several steps. The initial step evaluated the outputs for possible duplication, and duplicated abstracts were eliminated leaving only one copy of the abstract in the folder. The remaining abstracts (n = 716) were evaluated by the researcher for relevance to the research question. Irrelevant abstracts were excluded from the review (n = 400). Such abstracts included those that reflected sustainability in the field of environmental science. From the remaining abstracts, the researcher applied the inclusion and exclusion criteria, to determine which abstracts had to be included in the next step of the study. Studies not meeting the inclusion criteria were eliminated (n = 258).

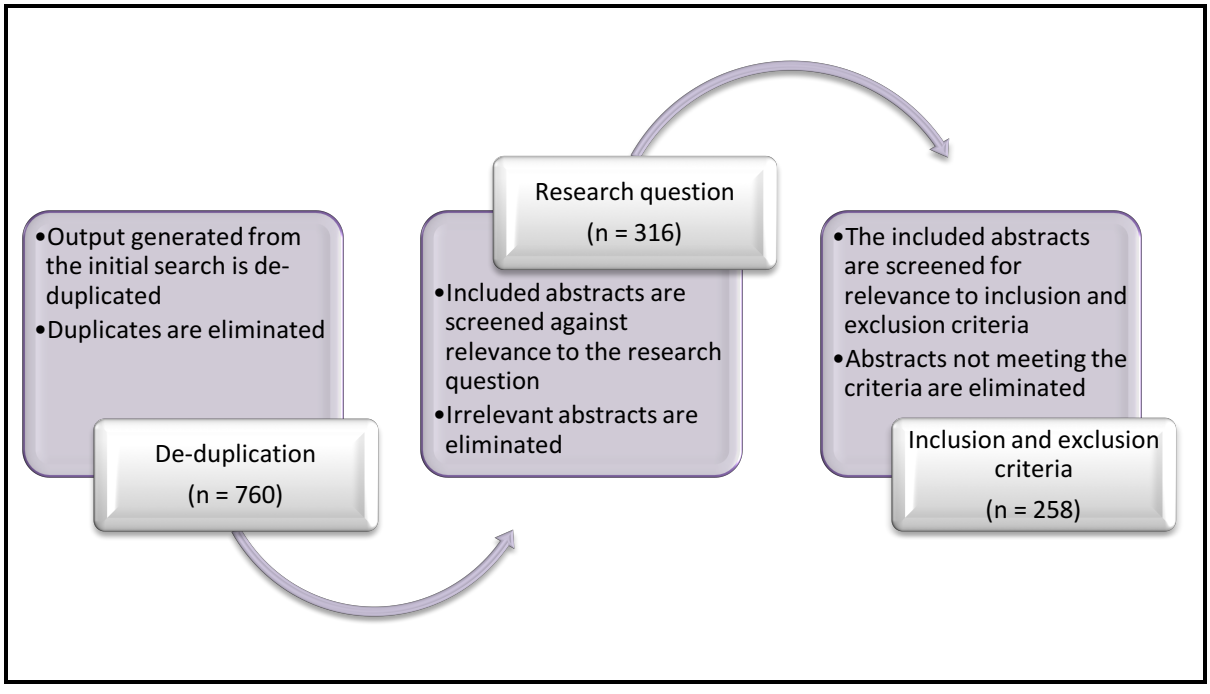


Figure 1. 4 Process of evaluating the generated abstracts

Source: Author generated

- **Search for full text and evaluation**

Citation information of the abstracts meeting the inclusion criteria was captured and forwarded to the librarian at the UFS for search for full-text articles. All full-text articles

meeting the inclusion criteria (n = 58), were accessed. Through the use of four collaborators with expertise in health professions education and curricular development (Addendum A), the generated full-text articles were evaluated against the inclusion criteria.

The collaborators were blinded to each other's decision. Elimination of articles was based on a consensus decision of the collaborators. Inconsistencies in decisions from the collaborators were disentangled through a virtual meeting.

1.11.2.3 Article appraisal

The identified full-length articles were categorised based on the methodology used to generate their evidence, namely qualitative research (n = 6), mixed methods (n = 3), and non-empirical research (n = 21). The same collaborators from the previous step evaluated the methodological integrity of the full-length articles according to set criteria (Addendum B).

1.11.2.4 Data extraction

Data extraction was guided by a data extraction table (Addendum C). The data extraction table was generated from operationalising the research question. The data extraction tool was piloted on one article by the researcher and the research promoter, and consistencies were observed in the generated data.

The research collaborators were provided with the included full-text articles and the relevant data extract tools. Data extraction was conducted over a period of two months by the research collaborators, the researcher and the research promoter at their respective stations. The researcher collated the responses from each collaborator and consensus on discrepant areas was achieved through virtual meeting.

1.11.2.5 Data analysis and synthesis

Data generated from the data extraction phase were then reduced to meaningful statements and synthesised through constant comparison to draw on conclusions. Themes were identified from the data.

1.11.2.6 Methodological rigour

Establishing rigour within an IR is essential for the believability of the results of the review. In this study, the researcher employed the following strategies to enhance rigour:

- following a systematic approach in conducting the study;
- keeping an audit trail for the included and exclude studies;

- using standardised tools for evaluation of the methodological integrity of included articles;
- piloting the data extraction tool;
- engaging collaborators with qualifications and experience in higher education and curriculum development in Africa; and
- collaborating in reaching consensus.

Section 1.12 presents the second phase of the study.

1.12 PHASE 2: COMMUNITY NEEDS ASSESSMENT

Phase 2 was an assessment of the needs of NEIs engaged in the implementation of the CBMP. This phase articulated with the determination of community needs and assets (step 3), factors influencing the framework (step 4), and the desired results (step 6) on the theory-of-change logic model and objectives b and c of the main study.

1.12.1 PURPOSE OF THE COMMUNITY NEEDS ASSESSMENT

The purpose of phase 2 of the study was to describe the implementation of the CBMP in NEIs in Lesotho, using the ICM global standards for midwifery education (ICM, 2013a) and the CBC for Midwifery in Lesotho.

1.12.2 RESEARCH QUESTIONS GUIDING THE COMMUNITY NEEDS ASSESSMENT.

The community needs assessment was guided by the following questions:

- What are the experiences of educators related to implementing a curricular innovation in the midwifery programme in Lesotho?
- What are the experiences of student-midwives regarding the CBMP in Lesotho?
- What are documents used in the implementation of the CBMP in Lesotho?
- Which factors influence the implementation of the CBMP in Lesotho?

1.12.3 THE CONCEPTUAL FRAMEWORK GUIDING PHASE 2

The gap analysis framework was applied in this phase (Agency for Healthcare Research and Quality [AHRQ], 2017). A gap analysis describes the difference between desired programme performance and actual programme performance. AHRQ (2017), however

states that, prior to conducting a gap analysis, the desired performance outcomes need to be determined and described first and then used as a yardstick for the analysis.

1.12.3.1 Determining the desired performance

The desired performance should be defined by stakeholders in the programme, influences from national and international policies, service delivery guidelines, and the healthcare system (AHRQ, 2017). The desired performance is also known as the benchmark or the gold standard and once defined becomes the basis for which performance can be measured against (AHRQ, 2017).

In this study, the desired performance for CBMP was based on the ICM Global Standards for Midwifery Education (ICM, 2013a) and the CBC. The global standards are:

- Standard 1: Organisation and administration;
- Standard 2: Midwifery faculty;
- Standard 3: Student body;
- Standard 4: Curriculum, including teaching and learning;
- Standard 5: Resources, facilities and services; and
- Standard 6: Assessment strategies.

According to the ICM, NEIs implementing competency-based programmes need to meet these standards for them to be deemed appropriate in educating midwives.

1.12.4 RESEARCH DESIGN FOR THE COMMUNITY NEEDS ASSESSMENT

A descriptive qualitative research design was used to describe the community needs. Figure 1.5 presents a description of the research design for the community needs assessment.

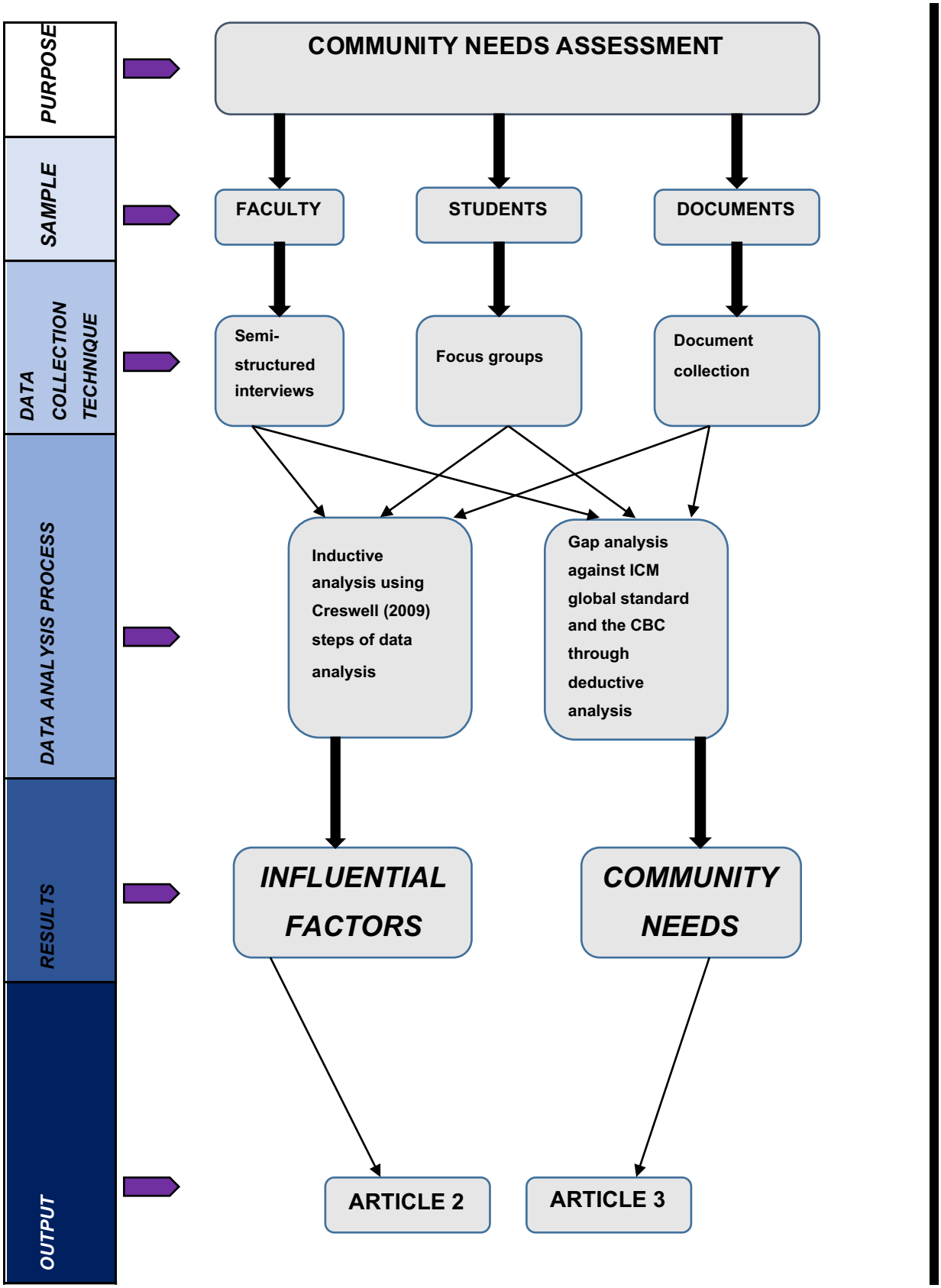


Figure 1.5: Community needs assessment (Author generated)

1.12.5 THE EXPERIENCE OF STAFF MEMBERS REGARDING IMPLEMENTING A CURRICULAR INNOVATION IN A MIDWIFERY PROGRAMME

The purpose of this section of Phase 2 was to describe the experiences of educators and administrators related to the implementation of a curricular innovation in the midwifery programme in Lesotho. The description of this section of experiences is analysed and explained through the various facets of research, namely population, unit of analysis, research technique, explorative interview and data collection technique.

POPULATION: The population was derived from staff members implementing the CBC in their midwifery programmes. Staff members in this study educators and administrators. **Educators** were classroom facilitators and clinical instructors while **administrators** were the heads of NEIs, heads of the midwifery programme, accountants, and general administrators. The first five letters of the alphabet were randomly assigned to the five NEIs included in this study to enhance confidentiality. The total population was 35.

UNIT OF ANALYSIS: According to Botma et al. (2010), the unit of analysis must be able to provide a thick description of their experiences of the phenomena being investigated. The unit of analysis is enhanced through inclusion criteria. *In this study, the inclusion criteria stated that participants had to –*

- be registered with the Lesotho Nursing Council evidenced by a current practising licence;
- hold a position within the school of nursing or hospital which was confirmed by the institution Human Resources manager;
- be involved with the teaching or administration of the CBMP for at least a year; and
- be willing to be part of the study at the date of data collection.

***Sampling and sample size*:** Purposive sampling was used to select participants included in this study. The participants homogenously had to have an experience in implementing a CBC. Data saturation was reached after 21 interviews. Table 1.3 reflects the distribution of participants included in this study across the five NEIs.

Table 1. 3 Sample for the community needs assessment

NEI	Head of school	Head of programme	Educators and clinical instructors	Administrators
A	1		4	2
B	1	1	3	2
C		1	1	2
D	1	1		
E			1	

RESEARCH TECHNIQUE**:** Semi-structured interviews were used to generate data in this phase of the study. These semi-structured interviews explored the participants' experiences of implementing a curricular innovation in the midwifery programme. Sections of the ICM standards for midwifery education (ICM, 2013a) relevant to educators and administrators were also used to formulate interview questions (Addendum D).

The data collection tool was checked by experts in qualitative research with experience in curriculum design and midwifery education in Africa.

EXPLORATIVE INTERVIEW**:** An explorative interview was conducted at one of the NEIs on two participants. This explorative interview was conducted by the researcher who was the main data collector. The purpose of the interview was to test for practicality, cost and time associated with the study. The questions were clear to the participants and data generated from this explorative interview were included in the main study.

ROLE OF THE RESEARCHER**:** The researcher was the head of the midwifery programme at one of the NEIs included in this study and had been involved in the design and implementation of the CBC in Lesotho, including leading workshops in training educators with regard to the CBC. The researcher was engaged in:

- Applying for approval to collect data at the individual NEIs;
- setting up venues for data collection; and
- collecting the data.

DATA COLLECTION PROCESS**:** A schedule for data collection was generated based on telephonic conversations with the heads of midwifery programmes at each NEI. The identified eligible participants were provided with an information brochure (Addendum E) and a consent form (Addendum F). A quiet room within each school was identified for the semi-structured interviews. After introductory pleasantries, the researcher proceeded to engage the participants in the interview questions, which were recorded using a Livescribe

Smartpen™. The Livescribe Smartpen™ allowed for digital recording of the semi-structured interviews and the simultaneous recording of notes associated with the interview. The tested semi-structured interview guide was used to generate data.

Ice-breaker questions were included in the interviews to thaw deliberations. Several probes were used during the interviews to enhance the quality of the data generated. Data were generated in both English and Sotho based on the participants' preferences, and was collected between May and June 2017.

Data from the same school were stored in an electronic folder within the Livescribe application coded with their respective alphabetic letter and the interview number. Only the researcher and the research promotor had access to the digital recordings. Data were stored safely on a password-protected computer.

The next discussion presents the process followed in describing the experiences of student midwives in a CBMP.

1.12.6 EXPERIENCES OF STUDENT MIDWIVES REGARDING COMPETENCY-BASED EDUCATION

The purpose of this section of the study was to describe the experiences of students in the midwifery programme in NEIs in Lesotho.

POPULATION: Students enrolled in the one-year CBMP from five NEIs in Lesotho were included in this study. The total number of students enrolled in the 2016–2017 academic year was 189. These students were included based on the fact that they had experience of the CBMP.

SAMPLE OR UNIT OF ANALYSIS**:** Forty-eight students in five focus groups were included in this study based on the following inclusion criteria. The participants were:

- registered as student midwives;
- registered with the schools of nursing included in the study;
- registered in the 2016–2017academic year; and
- available at the study site on the date of data collection.

Students repeating the programme were excluded in this study.

Sampling

The students were approached through their head of the programme who guided the researcher in purposively selecting students to be part of the focus groups. The researcher

managed to have one focus group with students at each institution, with students ranging from eight to twelve in a group.

RESEARCH TECHNIQUE: Data were collected through focus groups (FGs). The questions guiding the focus groups were gleaned from the ICM standards on midwifery education (ICM, 2013a), focusing on the curriculum, students, programme implementation and literature. The questions informing the FGs were evaluated by experts with a minimum qualification of a master's degree and experience related to curriculum design and implementation. The opinions of the experts were incorporated in revising the questions informing the FGs, including the findings of the explorative study.

EXPLORATIVE INTERVIEWS**:** An explorative interview involved a group of students at one NEI. The students included in the explorative interview were conveniently selected by the researcher. Data was collected after informed consent, and analysis of the data focused on the clarity of the questions and time taken for the entire interview.

ROLE OF THE RESEARCHER

In this section of the study, the researcher:

- set up appointments with the student groups through the office of the head of the midwifery programme at the respective schools; and
- moderated the focus groups.

DATA COLLECTION PROCESS**:** A data collection schedule was generated through the heads of programmes at each NEI and was used to guide the data collection process. The researcher collected data at each NEI based on the data collection schedule. At the data collection site, the heads of the programme assisted the researcher in recruiting students for the study. Each student meeting the inclusion criteria was given time to read the information leaflet (Addendum E) of the study, to decide if they would be part of the study, and then those deciding to be part of the study, allowed to sign the consent form (Addendum F). A quiet room within the school was identified for data collection. The process of the focus group was explained to students and data were generated in both Sesotho and English. Data were recorded using a Livescribe Smartpen^{TM} and stored in electronic folders accessed only by the researcher and the promoter.

The following discussion will present the third category of the community needs study, which focuses on a review of documents used in the implementation of the study.

1.12.7 DOCUMENTS USED IN THE IMPLEMENTATION OF THE CBMP IN NEIS IN LESOTHO

The third aspect within the community needs assessment focuses on the documents used to support the implementation of the competence based-midwifery curriculum in schools of nursing in Lesotho.

PURPOSE OF THE STUDY**:** The purpose of this phase of the study was to describe documents used in the implementation of the CBMP in the NEIs in Lesotho through a document analysis.

Research technique: The document analysis was guided by a six-step process on document analysis (Bowen, 2009). Figure 1.6 graphically displays the six steps guiding the document analysis.

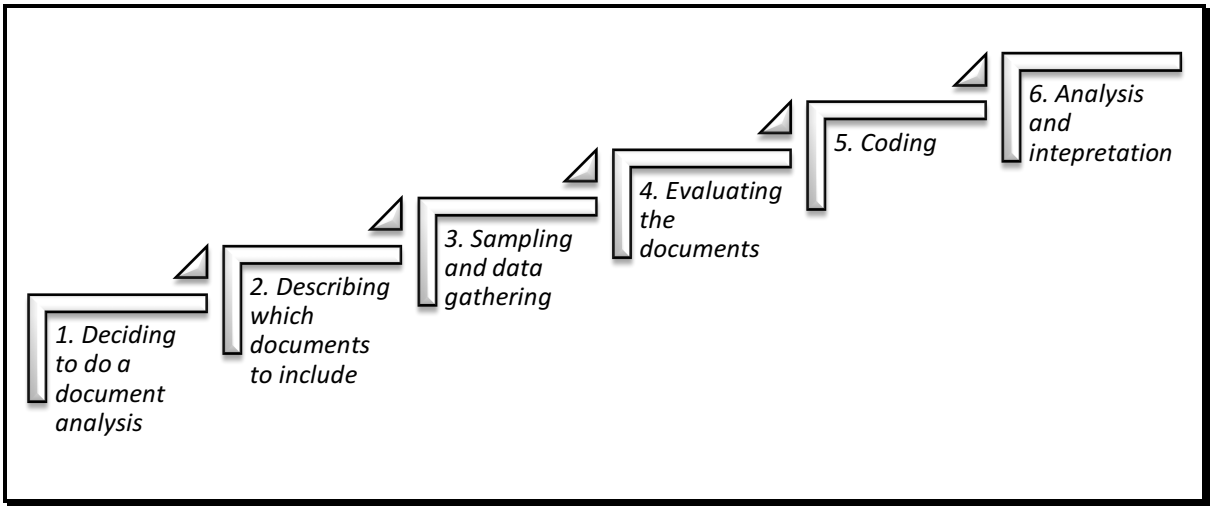


Figure 1. 6 Document analysis steps

Source: Author generated based on Bowen (2009)

The following discussion will describe each step of the document analysis and how it was applied in this study.

Step one: Deciding to do a document analysis

Deciding to do a document analysis was justified by the research question underpinning the study. This document analysis sought to describe the documents used in the implementation of the CBMP in Lesotho.

Step two: Describing the documents to be included in the document analysis

The documents included in the document analysis had to meet specified criteria, namely:

- documents used in the midwifery programme at a school of nursing;
- documents from the regulatory authorities related to midwifery education;
- official documents; and
- documents in English or Sesotho.

In determining the specific documents, the ICM standards for midwifery education (ICM, 2013a) guided the researcher in acquiring the appropriate documents.

Step three: Sampling and data gathering

All documents meeting the inclusion criteria for each standard from each NEI were included in the study. The included documents were duplicated, de-identified, and coded based on the respective letter of the alphabet for the NEI. Heads of midwifery programmes were used to acquire documents related to their respective midwifery programmes.

Step four: Evaluating documents

The evaluation of documents was done through checking whether the included documents met the inclusion criteria. In the study, all the documents that were captured were meeting the inclusion criteria.

Step five: Coding

The captured documents were coded based on the ICM global standards for midwifery education (ICM, 2013a). An enumeration chart was used to denote the presence or absence of documents in each institution (Addendum H).

Step Six: Analysis and interpretation

The documents included in the study were further analysed for relevance to both the ICM global standards for midwifery education (ICM, 2013a) and the CBC. Interpretation of the data also included the enumeration chart.

1.12.8 DATA ANALYSIS FOR THE COMMUNITY NEEDS ASSESSMENT

Data analysis was approached through two strands to reveal the community needs and the influential factors. The discussion below describes how the data analysis proceeded.

1.12.8.1 Data processing

Data collected through the semi-structured interviews and focus groups was transcribed verbatim by the researcher. The transcribed data were stored in folders of a hermeneutic

unit of ATLAS.ti™. All necessary translations of transcripts were done from Sesotho to English and confirmed by a professional translator.

1.12.8.2 Determining the influential factors

The influential factors were determined through two cycles of data analysis according to Saldaña (2013). The first cycle involved multiple steps, where the initial step involved the researcher reading and re-reading the data to get a general picture of what the participants were saying. This general impression was recorded on a separate data sheet.

The next step comprised coding the data. Initial, open and in vivo coding (Saldaña, 2013) were used to code the generated data from the transcripts. Initial and open coding were used to reveal the experiences as reported by the participants, while in vivo coding supported the analysis in allowing for some poignant expressions to be captured throughout the data process.

The second cycle of data analysis was done through utilisation of pattern coding (Saldaña, 2013) to code the data emerging from the first cycle including comparison with the findings of the document analysis. The researcher clustered the codes based on emerging patterns to reveal four themes, which are presented as the results of the study (see Chapter 3).

1.12.8.3 Determining the community needs

A different approach towards data analysis was taken in determining the community needs from the data generated in this study. Structural coding was used to group the data from the interview transcripts against the ICM global standards for midwifery education (ICM, 2013a). In conjunction with the enumeration chart and document analysis results, data was analysed using the strengths, weaknesses, opportunities and threats (SWOT) approach. The analysis aimed to determine from each structure the strengths, weaknesses, opportunities and threats of the NEIs against the expectations of the ICM global standards of midwifery education (ICM, 2013a) and the curriculum.

The emerging SWOT results were then themed to reveal specific needs of the community.

1.12.9 RIGOUR OF COMMUNITY NEEDS ASSESSMENT

The trustworthiness framework of Lincoln and Guba (1986) underpinned the development and execution of the community needs assessment. Source and space triangulation enhanced the credibility of the findings, and the audit trail of the research process enhanced

the dependability of the study. Findings from such a study may not be transferable to other settings.

1.13 PHASE 3: FRAMEWORK FOR IMPLEMENTING AND SUSTAINING A CURRICULAR INNOVATION IN A MIDWIFERY PROGRAMME IN LESOTHO

The third phase of the overarching study integrated the findings of the first two phases and used them to develop a framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho. This phase articulated with objectives d and e of the main study.

1.13.1 PURPOSE OF THE FRAMEWORK DEVELOPMENT STUDY

This phase sought to develop a framework for implementing and sustaining a curricular innovation in midwifery in a programme in Lesotho.

1.13.2 OBJECTIVES OF PHASE 3

During phase 3, the researcher aimed to:

- develop a framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho using the logic model; and
- validate the developed framework with primary stakeholders in Lesotho.

1.13.3 DEVELOPING THE FRAMEWORK

The study findings of phases 1 and 2 were realigned with the components of the theory-of-change logic model. The discussion below presents elements that were developed through this empirical approach.

1.13.3.1Problem/Issue

The researcher determined the problem to be aligned with the problem statement of the entire study, which was implementing and sustaining a curricular innovation in the midwifery programme in Lesotho.

1.13.3.2 Community needs/assets

The community needs were described against the ICM global standards for midwifery education (ICM, 2013a) gleaned from the findings of phase 2 of the overarching study.

1.13.3.3 Influential factors

Factors determined through phase 2 of the overarching study were evaluated and realigned to fit the purpose of influential factors for the framework.

1.13.3.4 Strategies

Strategies gleaned from phase 1 of the study, were aligned with the community needs. These strategies had to be tailor-made to the needs of the community, and in some cases, might have to be repeated. The researcher was aware that such strategies needed an interplay of a variety of stakeholders in their implementation.

1.13.3.5 Desired results

The theory-of-change logic model attests that desired results can be split into three, namely outputs, outcomes and impact (or influence). In the current study, the **outputs** were described as the immediate results of applying the framework, while **outcomes** referred to the changes in knowledge, behaviour, skills and even institution status as a result of implementing the framework. The **impact** (or **influence**) was understood as long-term results of implementing the framework, which could be aligned with the initial intentions of the curricular innovation in Lesotho (Botma, 2014).

The researcher described the outputs and outcomes based on the ICM global standards, aligned with the community needs and the prescribed strategies. The impact was gleaned from the overall purpose of the curricular innovation.

1.13.3.6 Assumptions

Three main assumptions needed to be in place for the effectiveness of this framework. These assumptions were determined from the researcher's experience in the setting and literature, and were confirmed by the promoter.

1.13.4 VALIDATION OF THE DEVELOPED FRAMEWORK

Validation of the developed framework required the input of the primary stakeholders who were expected to apply to framework to confirm the findings and the developed strategy. This exercise was done through a one-day workshop aimed at presenting the framework and for primary stakeholders to validate it. These result of the validation workshop is described in Chapter 5.

1.13.5 THE PARTICIPANTS FOR VALIDATING THE FRAMEWORK

The researcher purposively invited participants from the five NEIs to be part of the validation workshop. These participants were the primary implementers of the CBC in the midwifery programme. The primary implementers were:

- heads of the midwifery programme (n = 3);
- educators in the midwifery programme (n =7);
- clinical instructors (n = 3); and
- administrators (n = 1).

1.13.6 THE VALIDATION PROCESS

A central venue within Maseru was chosen, which was accessible to all potential participants. Invitations to be part of the validation exercise were sent to the participants (Addendum I). On 6 June 2018, participants were gathered for a one-day workshop, led by the researcher and guided by a programme (Addendum J).

The participants were introduced to the purpose of the workshop, and the process by which the workshop would be approached. Participants were randomly grouped into four groups of four people each. A structured stepwise process was engaged, where the participants were presented with a part of the entire framework and allowed to deliberate in groups for an average 20 minutes per section of the framework. After the deliberations, through a round-robin, participants were asked to confirm the findings and descriptions in the developed framework. Groups with different perspectives to the framework descriptions were asked to present their opinions and discussion aimed at consensus building.

The one-day session concluded with participants who were thrilled and ready to improve their system through the framework.

1.14 ETHICAL CONSIDERATIONS OF THE OVERARCHING STUDY

The ethical considerations of this study were guided by the framework for ethical educational research (Burgess & Cilliers, 2016). Several principles underpinned this framework, namely educational value, scientific validity, ethical oversight, fair selection of participants, favourable risk, voluntary informed participation, respect of recruited participants, provision of appropriate educational interventions or other benefits of social value after research, and collaborative partnerships

1.14.1 EDUCATIONAL VALUE

This ethical principle reflects that educational research should have important educational, research or social applications (Burgess & Cilliers, 2016). The framework for implementing and sustaining a curricular innovation bears the potential of transforming the implementation of a competency-based midwifery programme in Lesotho. Should there be an improvement in the implementation of such a programme, the expected graduates have a possibility of influencing the health delivery system in Lesotho, including reducing the perennially high maternal and neonatal mortality (UNFPA, 2017).

1.14.2 SCIENTIFIC VALIDITY

The concept of scientific validity expects that the researcher should select appropriate rigorous designs that efficiently and effectively address the study objectives and research question, and that the research study is feasibly based on the socioeconomic, political and cultural context. Scientific validity further reflects that the researcher has an appropriate level of competence to conduct the study (Burgess & Cilliers, 2016).

Qualitative research articulated through multiple methods research underpinned this study. These methods were deemed appropriate for the research study, through their alignment with the entire constructivist paradigm. The necessary approaches to enhance rigour of study were applied. This study was based on a naturalistic methodology (Glaser, 2007), which engaged the participants in their own natural setting at the same time observing the political, social and cultural norms inherent with the educational landscape in Lesotho.

The researcher had the appropriate level of competence to undertake this study evidenced by a completed research-based master's degree with support from a renowned expert in nursing education with experience in the context. Where limitations in competence related to the study were realised, the researcher sought input from the study promoter, critical readers, experts in specific fields and literature.

1.14.3 ETHICAL OVERSIGHT

A research study is expected to ensure an independent review of scientific and ethical merit (Burgess & Cilliers, 2016). Ethical clearance was granted by the Health Sciences Research Ethics Committee (HSREC) of the University of the Free State (HREC 22/2017) (Addendum K) and the Ministry of Health Research and Ethics Committee (MoH-REC), Lesotho (ID 25/2017) (Addendum L). However, the title of the study was changed at the conclusion of the study, due to the nature of the emerging framework. The title change was conditionally granted by the University of the Free State HSREC (Addendum K1).

1.14.4 FAIR SELECTION OF PARTICIPANTS

The research objectives should determine the inclusion criteria for participants in the study and selection of the participants should be equitable (Burgess & Cilliers, 2016). The research question in this study guided the determination of the inclusion criteria of participants and documents throughout the phases of the study. The researcher ensured that all participants had an equal chance of being part of the study and no penalties were imposed on those who refused to be part of the study. The researcher ensured that the study did not intrude into the primary pursuit of the students to gain knowledge or of educators whose primary role is to support knowledge acquisition.

1.14.5 FAVOURABLE RISK

Researchers are expected to assess any potential risk and benefits for the potential stakeholders and consider the magnitude of the broad scope of risks (Burgess & Cilliers, 2016). The nature of this study held minimal risks for the participants of the study above the normal everyday risk associated with being alive. Inasmuch as the researcher may not have anticipated any effects or harm to the participants in the study, opportunities for debriefing were available for all participants who required such, although none of the participants requested any. Related to conflict of interest, the researcher was the head of the midwifery programme at one of the NEIs in Lesotho at the time of the study. The researcher therefore had the potential of influencing the study participants; however, due to the paradigmatic perspective inherent in this study, the influence of the researcher was aligned with the constructivist perspective.

1.14.6 VOLUNTARY INFORMED PARTICIPATION

The principles of voluntary informed participation, emphasise that participation in research should be voluntary and mechanisms to eliminate power differentials from the recruitment process need to be in place to ensure a fair selection of participants. In this study, the participants were informed of their rights related to the study, including the purpose of the study and voluntary participation through the information leaflet (Addendum E). Written consent was sought from all participants included in this study.

1.14.7 RESPECT OF RECRUITED PARTICIPANTS

Procedures to protect individual privacy and confidentiality of data were ensured. Protecting individual privacy was ensured through enhancing an awareness on issues of confidentiality with the research participants, limiting the use of identifying names during the data collection process by avoiding the use of individual or collective names. The researcher coded all the

data utilising random letters of the alphabet to identify each school, focus group or individual interview. The data collected is kept in password-protected folders on the computer of the researcher, and a backup is kept in a lockable cabinet.

1.14.8 PROVISION OF APPROPRIATE EDUCATIONAL INTERVENTIONS OR OTHER BENEFITS OF SOCIAL VALUE AFTER RESEARCH

This aspect of the framework specifies that the study should allow for participants to benefit from their contribution to the study, including post-study interventions or a justification of why such benefits are not available (Burgess & Cilliers, 2016). In this study, the participants were made aware of the fact that there would be no direct benefits from being part of the study. However, aspects of the developed framework would involve improvements in their enactment of the curriculum in the future and the improved educational experiences for students enrolled in the competency-based midwifery programme.

1.14.9 COLLABORATIVE PARTNERSHIPS

This aspect of the framework expected researchers to develop collaborative partnerships within the educational environment, through co-responsibilities and respect in the diversity of values, cultures, traditions and social practices (Burgess & Cilliers, 2016). This study was limited approached in terms of developing collaborative partnerships; however, the fact that the researcher engaged the primary stakeholders in co-creating the framework, created a platform for the stakeholders to air their views regarding the implementation of the curricular innovation, further reflecting approaches that could be used for collaboration.

1.15 LAY OUT OF THE THESIS

This thesis is presented in six chapters as follows:

Chapter 1: Overview of the study

The purpose of this chapter was to provide a general overview of the study. The chapter provided the justification and rationale for the study. It further detailed the problem statement, objectives of the entire study and approaches to attain the objectives. This chapter further details the methodology of the study.

Chapter 2: Strategies to sustain curricular innovations in higher education: An integrative review

This chapter provides a description of the manuscript submitted to the journal Curriculum Inquiry in October, 2018. This manuscript is a result of the first phase of the study and aligned with the initial objective of the study aimed at describing strategies used to sustain curricular innovations in higher education through an integrative review.

Chapter 3: Sustaining a newly implemented competence-based midwifery programme in Lesotho: Emerging issues

The chapter is in the form of an article published in the journal *Midwifery* in April, 2018. This article describes some of the factors that influence the implementation of the competency-based midwifery programme in Lesotho. This article relates to objective 3 of the overall study, which sought to describe factors that influence the implementation of the CBC within the midwifery programme in Lesotho

Chapter 4: Implementing a competency-based midwifery programme in Lesotho: A gap analysis

Chapter 4 presents a manuscript whose focus is on the description of the gap analysis regarding the implementation of the competency-based midwifery programme in Lesotho. This article relates to objective 2 of the overall study, which sought to describe the gap in the implementation of the competency-based midwifery programme in all institutions, using a gap analysis. The manuscript is submitted to the journal *Nurse Education in Practice,* in August 2018 and is under second round of review at the time of submission.

Chapter 5: A framework to implement and sustain a curricular innovation in a midwifery programme in Lesotho

This chapter presents the manuscript of a framework to implement and sustain a curricular innovation in a midwifery programme in Lesotho, as submitted to the *African Journal of Health Professions Education* in September, 2018. The chapter relates to the fourth and fifth objectives of the research study, which were aimed at developing and validating a framework.

Chapter 6: Conclusion, recommendations and limitations

The last chapter, will present concluding discussions, recommendations and limitations based on the entire study.

1.16 CONCLUSION

This chapter presented the overview of the entire study, which was aimed at developing a framework to implement and sustain a curricular innovation within a midwifery programme in Lesotho. A description of the strategy used in the development of this framework was provided. The next chapter presents an integrative review on the strategies used to sustain curricular innovations in higher education.

1.17 REFERENCE LIST

AHRQ (2017). Gap analysis: Facilitators guide. Retrieved https://www.ahrq.gov/professionals/quality-patient-safety/patient-safety-resources/resources/candor/module3-facguide.html#Gap (Date accessed: 10 November, 2018)

Amineh, R. J., & Asl, H. (2015). Review of constructivism and social constructivism. *Journal of Social Sciences, Literature and Language, 1*(1), 9–16.

Barnett, R., & Coate, K. (2005). *Engaging the curriculum in higher education*. London: Open University Press.

Biggs, J. (1996). Enhancing teaching through constructive alignment. *Higher Education, 32*(3), 347–364.

Botma, Y. (2014). Implications of accreditation criteria when transforming a traditional nursing curriculum to a competency-based curriculum. *International Journal of Africa Nursing Sciences, 1*(1), 23–28.

Botma, Y., Greeff, M., Mulaudzi, F., & Wright, S. (2010). *Research in health sciences.* Cape Town: Heinemann.

Botma, Y., & Nyoni, C. N. (2015). What went wrong? A critical reflection of educator-midwives' inability to transfer education knowledge. *Journal of Nursing Education in Practice, 15*(1), 1–6.

Bowen, G. A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal, 9*(2), 27–40.

Brunner, J. (1985). Vygotsky: A historical and conceptual perspective. In V. Weitsch (Ed.), *Culture, communication & cognition: Vygotskyan perspective* 86-94 Cambridge: Cambridge University Press.

Burgess, T., & Cilliers, F. (2016). *A framework for ethical educational research: principles and application.* Retrieved from www.healthedu.uct.ac.za/framework-ethical-educational-research-principles- and-application (Date accessed: 16 June, 2017).

Carliner, S. (2011). *Workshop in conducting integrative literature reviews*. Presented at the IEEE International Professional Communication Conference, Cincinnati, OH.

Carraccio, C., Wolfsthal, S. D., Englander, R., Ferentz, K., & Martin, C. (2002). Shifting paradigms: From Flexner to competencies. *Academic Medicine, 77*(5), 361–367.

Cooke, M., Irby, D., Sulllivan, W., & Ludmere, L. (2006). American medical education 100 years after the Flexner report. *The New England Journal of Medicine, 355*, 1339–1344.

Council on Higher Education. (2013). *Higher education policy for the Kingdom of Lesotho.* Retrieved from http://www.che.ac.ls/documents/CHE%20Policy%20 (2013).pdf (Date accessed: 17 June, 2017)

Council on Higher Education. (2017). *List of programmes accredited by Council on Higher Education (CHE) – December 2017.* Retrieved from http://www.che.ac.ls/institutions/ListofAccreditedProgrammes.pdf (Date accessed 17 June, 2017)

DePaola, D. P., & Slavkin, H. C. (2004). Reforming dental health professions education: A white paper. *Journal of Dental Education, 68*(11), 1139–1150.

Dewey, J. (2012). "Democracy and education": an introduction to the philosophy of education. New York: MacMillan.

Duffy, T. P. (2011). The Flexner report – 100 years later. *Yale Journal of Biology and Medicine, 84*, 269–276.

Fernandez, N., Dory, V., Ste-Marie, L., Chaput, M., Charlin, B., & Boucher, A. (2012). Varying conceptions of competence: An analysis of how health sciences educators define competence. *Medical Education, 46*, 357–365.

Flexner, A., Pritchet, H., & Henry, S. (1910). *Medical education in the United States and Canada bulletin number four (The Flexner Report)*. New York, NY: The Carnegie Foundation for Advancement of Teaching.

Fraser, S. P., & Bosanquet, A. (2006). The curriculum? That's just a unit online, isn't it? *Studies in Higher Education*, *31*(3), 269–284.

Fullerton, J. T., Thompson, J., & Johnson, P. (2013). Competence based education: The essential basis of pre-service education for the professional midwifery workforce. *Midwifery, 29*, 1129–1136.

Government of Lesotho. (1997). *Nurses Act*. Maseru: Government Printer

Grundy, S. (1982). Three modes of action research. *Curriculum Perspective, 2*(3), 23–34.

Harden, R. (2009). Curriculum planning and development. In J. A. Dent & R. M. Harden (Eds.), *A practical guide for medical teachers* (3rd ed., pp. 45-61). London: Churchill Livingstone.

International Confederation of Midwives. (2013a). *Essential competencies for basic midwifery practice 2010.* Retrieved from http://internationalmidwives.org/what-we-

do/education-coredocuments/essential-competencies-basic-midwifery-practice/ (Date Accessed: 16 June, 2017)

International Confederation of Midwives. (2013b). *Global standards for midwifery education (2010) amended 2013.* Retrieved from https://internationalmidwives.org/assets/uploads/documents/CoreDocuments/ICM%20Standards%20Guidelines_ammended2013.pdf (Date Accessed: 16 June, 2017)

Johnson, P., Forgaty, L., Fullerton, J., Blueston, J., & Drake, M. (2013). An integrative review and evidence based conceptual model for the essential components of pre-service education. *Human Resources for Health, 11*(42), 1–10.

Kivunja, C., & Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education, 6(5),* 26–41.

Kellogg-Foundation. (2004). *W.K. Kellogg Foundation Logic Model Development guide.* Retrieved from https://www.bttop.org/sites/default/files/public/W.K.%20Kellogg%20LogicModel.pdf (Date Accessed: 1 November, 2016)

Kern, D. (2015). Overview: A six step approach to curriculum development. In P. Thomas, D. Kern, M. Hughes, & B. Chen (Eds.), *Curriculum development for medical education: A 6 step approach* (pp. 1–26). Baltimore, MD: Johns Hopkins University Press.

Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago, IL: University of Chicago Press.

Lincoln, Y., & Guba, E. (1986). But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Directions for Programme Evaluation, 1986*(30), 73–84.

Lopes, A. C., & Macedo, E. (2009). Nota Introdutoria-cultura e politica: Implicacoe para o curriculo. *Curriculo sem Fronterius*, [

Introductory note-culture and politics: I am involved in the curriculum. Curriculum without Borders,] *9*(2), 5–10.

Makhakhe, A. M. (2013). Nurses' experience of the transition from student to professional practitioner in a public hospital in Lesotho. *International Journal of Nursing Science Research, 1*(1), 1–12.

Markee, N. (1997). *Managing curricular innovations.* Cambridge: Cambridge University Press.

Martel, T. F., & Bird, J. F. (2010). Continuous curriculum review in a Bachelor of Nursing program: Preventing curriculum drift and improving quality. *Journal of Nursing Education, 49*(10), 529–594.

Mertens, D. M. (2015). *Research and evaluation in education and psychology* (4th ed.). Thousand Oaks, CA: Sage.

Middleton, L. (2014). The Nursing Education Partnership Initiative (NEPI): Innovations in nursing and midwifery education. *Academic Medicine, 89*(8), S24–S28.

Ministry of Health [Lesotho]. (2012). *Nursing and Midwifery Strategic Plan 2010–2015.* Maseru: Government printers.

Ministry of Health [Lesotho]. (2013). Lesotho Health Sector Strategic Plan, 2012/13-2016/17. Maseru: Government printers.

Ministry of Health [Lesotho]. (2014). *Demographic Health Survey.* Retrieved from https://www.dhsprogram.com/pubs/pdf/FR309/FR309.pdf (Accessed: 14 October, 2018)

Nyoni, C., & Barnard, A. (2016). Professional nurses perception of their clinical teaching role at a rural hospital in Lesotho. *African Journal of Health Professions Education, 8*(2), 166–168.

Nyoni, C., & Botma, Y. (2017). Aligning summative clinical examinations with competence-based curriculum: Midwifery educators' experiences in Lesotho. *International Journal of Africa Nursing Sciences, 7*, 11–17.

Prideaux, D. (2003). Curriculum design. *British Medical Journal, 326*(7383), 268–270.

Remillard, J. T., & Heck, D. (2014). Conceptualising the curriculum enactment process in Mathematics education. *ZDM: The International Journal of Mathematics Education, 46*(5), 705–718.

Rentschler, D. D., & Spegman, A. M. (1996). Curriculum revolution: Realities of change. *Journal of Nursing Education*, *35*(9), 389–393.

Robins, L. S., White, C. B., & Fantone, J. C. (2000). The difficulty of sustaining curriculum reforms: A study of "drift" at one school. *Academic Medicine, 75*(8), 801–805.

Saldaña, J. (2013). *The coding manual for qualitative researchers.* Los Angeles, CA: Sage.

Schick-Makaroff, K., McDonald M., Plumer, M., Burgess, J., & Neander, W. (2016) What synthesis methodology should I use? A review and analysis of approaches to research synthesis. *AIMS Public Health 3(1),* 172-175.

Schiller, C. J. (2016). Critical realism in nursing: An emerging approach. *Nursing Philosophy, 17*, 88–102.

Scotland, J. (2012). Exploring the philosophical underpinnings of research: Relating ontology and epistemology to the methodology and methods of the scientific, interpretive and critical research paradigms. *English Language Teaching, 5*(9), 9–16.

Smith, M., Worker, S., Meehan, C., Schmitt-Mc, L., Ambrose, A., Brian, K., & Schoenfelder, E. (2017). Defining and developing curricular in the context of cooperative extension. *Journal of Extension, 55*(2), 2FEA4.

Soares, C. B., Hoga, L. A., Peduzzi, M., Sangaleti, C., Yonekura, T., & Silva, D. R. (2014). Integrative review: Concepts and methods in nursing. *Rev Esc Enferm USP 48*(2), 329–339.

Thibault, G. E. (2013). Reforming health professions education will require culture change and closer ties between classroom and practice. *Health Affairs, 32*(11), 1928–1932.

Thompson, D. R., & Huntley, M. A. (2014). Researching the enacted mathematics curriculum: Learning from various perspectives on enactment. *The International Journal of Mathematics Education, 46*(5), 701–704.

UNFPA. (2014). *State of world midwifery.* Retrieved from https://www.unfpa.org/sites/default/files/pub-pdf/EN_SoWMy2014_complete.pdf (Date Accessed: 2 February, 2018)

UNFPA (2017). Transforming lives UNFPA East and Southern Africa Annual Report. Retrieved from https://reliefweb.int/sites/reliefweb.int/files/resources/Transforming%20Lives%20UNFPA%20ESA%20Annual%20Report%202017%20-%20digital.pdf (Date Accessed: 2 February, 2018)

Vos, A. S., Strydom, H., Fouché, C. B., & Delport, C. S. (2011). *Research at grass roots: For the social sciences and human services professions.* 4th ed Pretoria: Van Schaik.

Wernet, S. P., & Singleton, J. L. (2010). Institutionalisation of the gerontological curricular change in schools of social work. *Gerontology & Geriatric Education, 31*, 19–36.

Whittemore, R. (2005). Combining evidence in nursing research: Methods and implications. *Nursing Research, 54*(1), 56–62.

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing, 52*(5), 546–533.

Wilson, E. A., Rudy, D., Elam, C., Pfeifle, A., & Stauss, R. (2012). Preventing curriculum drift: Sustaining change and building up on innovation. *Annals of Behavioural Science and Medical Education, 18*(2), 23–26.

Wilson, V., & McCormack, B. (2006). Critical realism as emancipatory action: The case for realistic evaluation in practice development. *Nursing Philosophy, 7*, 45–57.

Woods, A. (2015). Exploring unplanned curricular drift. *Journal of Nursing Education, 54*(11), 641–644.

2 Strategies to sustain curricular innovations in Higher education: An integrative review

"If we teach today's students as we taught yesterday's,

we rob them of tomorrow"

John Dewey (nd)

CHAPTER 2:

STRATEGIES TO SUSTAIN CURRICULAR INNOVATION IN HIGHER EDUCATION: AN INTEGRATIVE REVIEW

2.1 INTRODUCTION

A variety of studies have attempted to describe approaches used in sustaining curriculum change and or curricular innovations within Higher education. A majority of the studies described approaches in sustaining such changes as based on personal heuristics or experience, with limited empirical evidence or a combined approach.

An integrative review is an inclusive type of literature review that allows for the synthesis of evidence generated through various methodologies. The integrative review will dissociate from the traditional systematic or meta-analysis approaches that privilege experimental

research as the gold standard to the generation of evidence. An integrative review allows for the inclusion of evidence into a review that is generated through various other means which are not necessarily experimental research.

This chapter presents an integrative review aimed at synthesising strategies used to sustain curricular innovations in Higher education.

2.2 MANUSCRIPT DETAILS

Title	**Strategies to sustain curricular innovations in Higher Education: An Integrative review**
Authors	**Nyoni, Champion N.** Botma, Yvonne
Journal	Curriculum Inquiry
Journal details	Peer reviewed (double-blinded) Listed as an accredited journal on the Department of Higher Education and Training (DoHET) [South Africa]
Status	Submitted: October, 2018

2.2.1 JOURNAL INFORMATION

Curriculum Inquiry (CI) is a leading international journal in the field of curriculum studies. It is dedicated to studies of educational experience in schools, communities, families, and other local or transnational settings, using a range of theoretical and disciplinary approaches. CI brings together the work of both established and emerging scholars from a variety of academic fields and disciplines who theorize and examine curriculum and pedagogy, broadly defined, and whose work promotes conceptual debate and pushes beyond current understandings of educational research, theory, and practice. (Curriculum Inquiry, 2018)

2.2.2 SUBMISSION RECORD

Manuscript was submitted to the journal on the 19 October, 2018.

2.2.3 CONTRIBUTION RECORD

Both authors conceptualised the paper. The candidate was responsible for the data collection, and analysis, with contributions from the research promoter. The candidate drafted the manuscript, with academic oversight from the research promoter.

2.2.4 ASSOCIATED ADDENDA

Addendum M: Author guidelines for Curriculum Inquiry

2.3 MANUSCRIPT ONE

ABSTRACT

Higher education institutions adopt curricular innovations for a variety of reasons. The purpose of this integrative review was to synthesise strategies used to sustain curricular innovation in higher education between January 1996 and September 2016. Sixteen electronic databases were searched and reference lists checked, citations tracked and journals hand-searched to identify literature reflecting strategies used to sustain curricular innovations in higher education. Faculty development and involvement, planning and funding, quality assurance, student involvement, and leadership underpinned the strategies used to sustain curricular innovations. These strategies were tailor-made to specific role players within higher education at their various levels of curricular implementation. We argue that various role players within higher education need to be supported to enable their ability to sustain curricular innovations. Higher education institutions need to sustain curricular innovations if they are to continue to produce relevant graduates.

Keywords: Curricular innovation, role players, sustain, strategies, HEIs

Strategies to Sustain Curricular Innovations in Higher Education: An Integrative Review

Introduction

Advances in research, new insights into old problems, and improved understanding of how students learn set the stage for curricular innovations within higher education. Curricular innovations enhance the ability of higher education institutions (HEIs) to develop, among other issues, graduates who are able to meet the changing needs of the society (Van Schalkwyk et al., 2014). Sustaining curricular innovations, which relates to continued implementation of the curricular innovation as intended, is often complex and challenging to higher education institutions as evidenced by some innovations drifting back to pre-innovative state or in some cases, taking a different trajectory than expected or even remain on paper and fail to take off.

The architecture of curricula in higher education is influenced by a variety of stakeholders and desired curricular elements. These stakeholders and desired elements are the students, educators, advances in research, special interest groups, and meeting the complicated global development goals (Clifford & Montgomery, 2017; Genn, 2001). Feedback from students regarding how, and what they are taught in higher education, has been a catapult for curricula change (Elliot-Cooper, 2017; Le Grange, 2016). Educators have been known to influence the design and development of the curriculum informed by disciplinary legacies, research, and how they were taught during their time as students. Technology has catalysed access to a plethora of information related to any discipline, including influencing ways in which students interact with teachers, resources and other students as they learn. Research that improve the understanding of how students learn (Vella, 2016) create the stage for new or different facilitation skills and an improved or different learning milieu for students. Special interest groups and partner or donor funding interests influence the crafting of curricula, as they infuse curricula with content they deem critical or needed for that particular context (Kolmos, Hardgraft, & Holgaard, 2016). National priorities, influenced by the need to meet global development goals and challenges

within the local context, inspire the nature, quality and type of graduates produced by HEIs. These complex interrelated elements result in the need for curricular innovation within higher education.

Markee's (1997) definition of a curricular innovation underscores the fundamental difference of a curricular innovation from a curricular change, when he highlights the perceptions of potential implementers as pivotal in defining a curricular innovation. His views support Rogers' (1995) classic description of an innovation as 'an idea, practice, or object that is perceived as new by an individual or another unit of adoption … if the idea seems new to the individual, it is an innovation". Markee (1997) defines a curricular innovation as a developmental process that results in teaching and assessment materials, methods and strategies, which may be perceived as new by potential implementers. Even though the content, strategies and methods may be validated elsewhere, their perceptions as 'new' by implementers such as students, educators or administrators, is sufficient, under this rendition of the concept, to be considered as a curriculum innovation.

Sherry (2001) states that strategies used to sustain innovations have been largely described for industrial organisations, while those used to sustain curricular innovations are skewed towards specific disciplines, and are mainly theoretical and not specific to role players within HEIs. Limited published literature describes the practical application of strategies to sustain curricular innovation, especially within the higher education context. Higher education, which often is challenged to improve the quality of their education may be engaged in designing and developing curricular innovations, in a bid to develop relevant curricula and ultimately graduates. Sustaining such curricular innovation is often complex, with most stakeholders applying personal heuristics, experience and limited literature in sustaining such change. This article presents an integrative review, which synthesised literature related to strategies used to sustain curricular innovations within higher education.

Method

The main question guiding this review was: What are the strategies used to sustain curricular innovation in higher education? Due to the diverse methodologies of evidence in sustaining curricular innovations, an integrative review was applied in answering the review question (Whittemore & Knafl, 2005). This particular framework allowed for a comprehensive understanding of the phenomenon through the integration of empirical and theoretical evidence. The integrative review proceeded through a literature search, an evaluation of abstracts, data appraisal process, data extraction process and data synthesis.

Literature search

Literature related to the research question was sought by searching 16 databases accessed through the EBSCO interface using a university library. Databases searched were Academic Search Complete, PsycINFO, ERIC, MEDLINE with Full Text, Health Source: Nursing/Academic Edition, SPORTDiscus with Full Text, CINAHL with Full Text, SocINDEX with Full Text, Africa-Wide Information, Communication & Mass Media Complete, Humanities Source and PsycEXTRA.

The search sought to identify abstracts of literature that reflected strategies used to sustain curricular innovations in higher education using synonyms of the following search terms: 'higher education', 'curriculum', 'innovation', 'reform', 'strategies', 'techniques' and 'sustain and support'. These synonyms were identified from the main question guiding this review. Published literature, inclusive of empirical and theoretical research, dissertations, theses, expert opinions, workshops and conference proceedings since 1 January 1996 to September 2016 were included in this review. The output from the literature search generated 716 abstracts.

Evaluation of generated abstracts

The evaluation of the generated abstracts (n=716) proceeded in three sequential steps. During the initial step, the relevance of each abstract to the research question guiding the review was evaluated, and 400 abstracts were eliminated because they were not higher education institutions, these included high schools and pre-university education institutions. During the second step, the included abstracts

(n=316) were evaluated against the inclusion criteria for the review. The inclusion criteria of this review were that the abstract needed to reflect:

- curriculum innovation within higher education;
- a strategy used to support or sustain the curriculum innovation; and
- data from 1 January 1996 till the last date of September 2016.

This time, 258 abstracts did not meet all of the inclusion criteria and were eliminated. Some of the eliminated articles either did not reflect a curriculum innovation or a strategy to support or sustain the curriculum innovation in as much as they were in the appropriate dates of publication.

Full-text articles of the abstracts meeting the inclusion criteria (n=58) were sought from a university library. These full-text articles were evaluated by four independent reviewers who were blind to each other's review. These independent reviewers were experts in higher education and curriculum development in their various fields and used the same inclusion criteria. Articles were included into the review based on consensus by reviewers and the results were validated through a virtual meeting. Thirty full text articles were included in this review.

DATA APPRAISAL

The selected full-text articles were appraised for methodological rigour. Of the 30 articles included in this review, 21 were classified as 'non-research' evidence and these comprised conceptual papers, workshop proceedings, book chapters, expert opinions and case studies (Dang & Dearholt, 2017). The full-text articles classified as 'non-research' evidence were evaluated using the John Hopkins University tools for 'non-research' evidence, however case studies were appraised through guidelines for appraisal of single case-study (Atkins & Sampson, 2002). The nine articles, classified as research, were distributed between qualitative designs and mixed methods designs, and the critical appraisal skills programme (CASP) tools for qualitative research and the mixed methods appraisal tool (MMAT) for mixed methods research (Pluye et al., 2009) were used to evaluate the quality of the

articles. The outcome of the data appraisal process informed the description of the nature and quality of evidence within this field.

DATA EXTRACTION

Whittemore and Knafl (2005) describe data extraction as a step guided by central questions relevant to the overall research question. The central questions of this review were based on the operationalisation of the review questions and were used to guide the data extraction process. The central questions were:

- What is curriculum innovation?
- Which strategy was used to sustain curriculum innovation?
- How was the strategy used?
- When was the strategy used?
- Who used the strategy?
- Why was the strategy used?
- What was the outcome of such a strategy?

These central questions were used to guide the data extraction process and the questions were extrapolated to a data extraction sheet. The data extraction sheet was piloted by the first author and checked by the second author to avert ambiguity of the questions, thus ensuring that the data extractors extracted similar information. The same four independent reviewers extracted data from the 30 articles included in this review.

DATA SYNTHESIS

The extracted data were synthesised through a stepwise process as described by Whittemore and Knafl (2005). The extracted data were grouped based on the central questions informing the data extraction process. The extracted data were coded, and categories were generated based on the similarity and differences among the codes. Pattern coding was then used to link the categories of the data that culminated in the results of this review, as explained by Saldana (2012).

Results

The strategies used to sustain curricular innovation are described according to the three main levels by which curricular innovations are implemented in higher education explicitly, the classroom/micro-level, the programme/meso-level and the institution/macro-level. The strategies within these levels were tailor-made to the specified role players namely; students, educators and administrators. Table 1 reflects a summary of the results of this review.

LEVEL	ROLE PLAYER	STRATEGY TO SUSTAIN CURRICULAR INNOVATION	SOURCES
MICRO-LEVEL/ CLASSROOM	Educator related strategies	Quality assurance through monitoring and evaluation and incentives for good performance	Cooke, Sweeney, & Noble, 2016; Teo, 2011; Robin, White, & Fantone, 2000
		Educator interactions with like-minded colleague	Cooke, Sweeney, & Noble, 2016; Elliot, et al., 2016; Pegg, 2013; Parker & Quinsee, 2012; Teo, 2011
		Educator engagement in the curricular innovation	Rogan & Anderson, 2011; Ryder, Sargent, & Perry, 2009;
		Tailor-made continuous development of educators	Melekis & Woodhouse, 2015, Pegg 2013; Parker & Quinsee, 2012; Ryder, Sargent, & Perry, 2009; Lindman & Tahamont, 2006; Potter & Meisels, 2005
		Tangible educator support by means of grants, well developed materials and evidence-based guidelines	Parker & Quinsee, 2012; Lillevang, Bugge, Beck, Joost-Rethans, & Ringsted, 2009; Sierpina, Schneeweiss, Frenkel, Bulik, & Maypole, 2007; Roy, Borin, & Kustra, 2007; Potter & Meisels, 2005
	Student specific strategies	Academic support to students, to include reasons for change , expectations and their responsibilities	Ryder, Sargent, & Perry, 2009; Potter & Meisels, 2005
		Communication with current and prospective students	Almlov & Moberg, 2008; Potter & Meisels, 2005
		Co-responsibility through direct involvement with the implementation process	Galea, Fried, Walkers, & Rudenstine, 2015; Wernet & Singleton, 2010; Almlov & Moberg, 2008
MESO – LEVEL/ PROGRAMME	Administrator specific strategies	Champions through leadership and commitment	Galea, Fried, Walkers, & Rudenstine, 2015; Melekis & Woodhouse, 2015; Parker & Quinsee, 2012; Ryder, Sargent, & Perry, 2009
		Strategic approaches	Cooke, Sweeney, & Noble, 2016; Galea, Fried, Walkers, & Rudenstine, 2015; Hooyman & Peter, 2006; Ryder, Sargent, & Perry, 2009; Roy, Borin, & Kustra, 2007; Skelton, West, & Zeff, 2002; Mowat & Mowat, 2001
		Inclusion in the development of the curricular innovation	Galea et al., 2015, Potter and Meisels, 2005, Blais, Mikolaj, Jedlicka, Strayer, & Stanek, 2006

		Collaborative planning for implementation	Alves et al., 2013, Frenkel et al., 2007, Galea et al., 2015, Kolmos, Hardgraft and Holgaard, 2016, Lindman and Tahamont, 2006, Potter and Meisels, 2005, Rogan and Anderson, 2011, Roy, Borin and Kustra, 2007, deSouza, Zeferino and Ros, 2008.
		On-going consultation with educators and students	Cooke, Sweeney and Noble, 2016;Pegg, 2013; Rogan and Anderson, 2011; Ryder, Sargent and Perry, 2009;Hooyman and Peter, 2006
		On-going programme evaluation against standards and the curriculum	Potter and Meisels, 2005; Robin, White and Fantone, 2000
		Changing the organisational culture by disseminating positive outcomes and offering support	Parker & Quinsee, 2012; Wernet & Singleton, 2010; Merton, Froyd, Clark, & Richardson, 2009; Roy, Borin, & Kustra, 2007
	Educator specific strategies	Development of educators through communities of practice or working groups	Cooke, Sweeney, & Noble, 2016; Elliot, et al., 2016; Melekis & Woodhouse, 2015; Parker & Quinsee, 2012; Rogan & Anderson, 2011; Wernet & Singleton, 2010; Mowat & Mowat, 2001; Potter and Meisels, 2005
		Mentoring	Parker and Quinsee, 2012; Ryder, Sargent and Perry, 2009; Galea et al., 2015
		Quality assurance by institution and governing processes	Keesing-Styles, Nash and Ayres, 2013; Galea et al., 2015;Cooke, Sweeney and Noble, 2016
		Collaboration in development of course material and review of curricular enactment	Potter and Meisels, 2005; Ryder, Sargent and Perry, 2009
		Recognition with incentives	Parker & Quinsee, 2012
MACRO – LEVEL/INSTITUTIONAL LEVEL	Administrators specific strategies	Supportive leadership	Galea, Fried, Walkers, & Rudenstine, 2015; Jippes, et al., 2013; Ryder, Sargent, & Perry, 2009; Harris, Henry, Bland, Starnaman, & Vovted, 2003
		Transforming policies, laws and policies	Yu, 2015; Jippes, et al., 2013; Wernet & Singleton, 2010; Harris, Henry, Bland, Starnaman, & Vovted, 2003; Skelton, West, & Zeff, 2002

STRATEGIES TO SUSTAIN CURRICULAR INNOVATION AT CLASSROOM/MICRO-LEVEL

The two main role players involved in classroom or micro-level, are educators and the students.

Educator-related strategies

This review revealed five main strategies used to sustain curricular innovation in higher education, specific for educators at classroom or micro-level. These strategies were: quality assurance through monitoring and evaluation, and incentives for good performance aligned to the curriculum innovation; educator interactions with like-minded colleagues; educator engagement with the curricular innovation; tailor-made continuous educator development; and tangible educator support by means of grants, well-developed materials, and evidence-based practice (EBP) guidelines.

i) Quality assurance through monitoring and evaluation and incentives for good performance

Cooke, Sweeney, and Noble (2016) interpret implementation as the beginning of sustaining any curricular innovation and note that it is essential for curricular innovation to be implemented. There are reported instances where curricular innovations remained on paper or as a 'brilliant' idea that was never translated to the classroom (Chisholm & Leyendecker, 2008). Robins, White, and Fantone (2000) attest that an implemented curricular innovation needs to be monitored periodically through strategic means by engagement with educators at various times. Periodic monitoring enhances the accuracy of the estimation of the success of the curricular innovation. In addition, the implemented curricular innovation is expected to be reviewed externally (Teo, 2011). External review can be through other educators from other programmes or from within the same programme. Educators demonstrating good performance on the enactment of the curricular innovation should be provided with appropriate incentives.

ii) Educator interactions with like-minded colleagues

Interactions among educators implementing similar curricular innovation influence their ability to sustain curricular innovation at classroom level. These interactions may be through extra-curricular reading groups (Cooke et al., 2016; Potter & Meisels, 2005), which provide a platform for engagement (Teo, 2011). Potter and Meisels (2005) explain that the need for collaboration and extra-curricular reading groups may be supported by consultation with educators with experience or expertise in terms of the curricular innovation. Collaboration based on educator interaction could extend to role players who have vested interest in faculty development, growth and seeing the curricular innovation through (Teo, 2011).

iii) Educators engagement within the curricular innovation

Educators' engagement with the curriculum innovation is a corner-stone in sustaining any innovation. Ryder, Sargent, and Perry (2008) describe concerted efforts in engaging staff in active participation in the evolution of a curriculum that is malleable to a range of inputs. Such faculty involvement in curricular innovation as essential in influencing their ability to adopt, implement and sustain it. Ryder et al. (2008) further declare that the platform for sustaining curricular innovation is set once educators realise the importance and significance of the curricular innovation to the academic programme, their day-to-day work, and the HEI as a whole. Educators understanding of the need for change enhances acceptance by educators and their ability to sustain curricular innovation within the classroom (Rogan & Anderson, 2011).

iv) Tailor-made continuous development of educators

Critical in sustaining curricular innovation is the development and continuous improvement of educators through tailor-made development activities to support the implementation of the innovation (Lindman & Tahamont, 2006; Melekis & Woodhouse, 2015; Parker & Quinsee, 2012; Pegg, 2013; Potter & Meisels, 2005; Ryder et al., 2008). Parker and Quinsee (2012) describe the need to take advantage of the influential role of senior educators with experience in conducting such development, while Pegg (2013) describes how faculty development should be a continuous process with both long-

and short-term goals, which can be related to curricular innovation. Lindman and Tahamont (2006) corroborate with the findings of Potter and Meisels (2005) that the development of educators should be tailor-made to the specific curricular innovation.

v) Tangible educator support by means of grants, well-developed materials and EBP guidelines

Sierpina, Schneeweiss, Frenkel, Bulik, and Maypole (2007) describe the availability of grants or funding specifically for the curricular innovation as tangible support. Several authors reflect other tangible resources for support, namely infusing the process of implementation of curricular innovation with EBP (Roy, Borin, & Kustra, 2007), direct and clear curricular development and implementation guidelines (Lillevang, Bugge, Beck, Joost-Rethans, & Ringsted, 2009), and well-developed materials, which can be used by educators as they implement curricular innovation (Potter & Meisels, 2005). Parker and Quinsee (2012) describe the application of technology-enhanced academic practice modules where educators can practice their teaching activities, before implementing the curricular innovations in class. Such academic practice models are presented through technologically influenced platforms.

Student-specific strategies

Three strategies were used to sustain curricular innovation among students at classroom level within higher education, namely academic support to students on the reasons for the change, expectations and their responsibilities; communication with current and prospective students; and co-responsibility through direct involvement in the implementation process.

i) Academic support to students on the reasons for change, expectations and their responsibilities

Academic support for students during the curriculum innovations should include reasons for the change, including managing student's expectations and what is expected from them. Ryder et al. (2008) describe the creation and utilisation of free time for student-specific activities, such as self-study, mentorship, research and even doing concurrent degrees. Students should be introduced to new learning approaches needed and be provided with some academic support which may be intense at the beginning of the programme, but may then be tapered off when students comprehend what is expected of them (Potter & Meisels, 2005).

ii) Communication with current and prospective students

Current and prospective students should be informed about and oriented to curricular innovation (Almlov & Moberg, 2008; Potter & Meisels, 2005). This information should be passed through open communication channels that would allow for student inputs.

iii) Co-responsibility through direct involvement in the implementation process

Co-responsibility related to curricular innovation reflects the ability of HEIs to allow students to partake and be responsible for certain aspects of the curricular innovation. Students need to be represented in change environments by allowing them to be part of change (Galea et al 2015; Wernet & Singleton, 2010).

STRATEGIES TO SUSTAIN CURRICULA INNOVATION AT MESO- OR PROGRAMME LEVEL

The two critical role players influencing the sustainability of curricular innovations at meso- or programme level are the programme administrators and educators.

Strategies for administrators at meso- or programme level

Seven strategies were identified for administrators to sustain curricular innovations at programme level. These strategies are: champions through leadership and commitment; strategic approaches; inclusion in the development of the curricular innovation; collaborative planning for implementation; ongoing consultation with educators and students; ongoing programme evaluation against standards and the curriculum; and changing the organisational culture by disseminating positive outcomes and offering support.

i) Champions through leadership and commitment

To enhance their sustainability, curricular innovations need to be led by specific individuals at programme level. Leadership was provided by one senior educator or a champion (Galea et al., 2015; Ryder et al., 2008) and in other studies, by the vice-dean for education. In other settings, leadership was provided by a team mandated to drive the curricular change process. Various authors gave different names to this team, since they have similar functions, namely a dedicated educator review team (Ryder et al, 2008) a sustainability committee (Melekis & Woodhouse, 2015), and school liaison team (Parker & Quinsee, 2012).

ii) Strategic approaches

Strategic approaches used by administrators were a bottom-up approach, attending to all educators questions (Galea, 2015), explaining what is expected of them (Hooyman & St Peter, 2006) and ensuring consensus (Ryder et al., 2008).

A comprehensive course review was used to inform curriculum management, specifically the development and maintenance of the curriculum (Skelton, West, & Zeff, 2002). Mowat and Mowat (2001) describe the application of action research as a strategic approach used to provide solutions for the implementation of the curricular innovation. Cooke et al, (2016) describe the use of focus group discussion and feedback from such groups as a strategic approach towards enhancing the sustainability of curricular innovations. These focus group discussions focused on identified problem areas.

Additional strategic approaches comprised the creation of discussion platforms for educators involved in the curricular innovation through creating specific time or retreats related to the curricular innovation. The specific time may also be used for administrative issues that are related to curricular innovation (Ryder et al., 2008). The vision of the department could be changed strategically to align with curricular innovation further enhancing the sustainability of curricular innovation (Roy et al., 2007).

iii) Inclusion in the development of curricular innovation

Various articles in this review reflected the need for programme administrators to forge internal partnerships with various stakeholders who are associated with the development and implementation of curricular innovation. These stakeholders may be the students, educators from other disciplines or even the community where students may be expected to practice. Galea et al. (2015) made sure that every department representative was included in the taskforce responsible for the development and implementation of their curricular innovation, including students. Potter and Meisels, (2005) further reflect that multiple disciplines may be involved in the development of a course or module materials that are associated with the curricular innovation. Blais, Mikolaj, Jedlicka, Strayer, and Stanek (2006) describe how partnerships among educators within nursing programmes allowed for successful integration of gerontology into an undergraduate nursing curriculum.

Iv) Collaborative planning for implementation

Planning reflects the description, acquisition and application of specific resources associated with the curricular innovation. Funding is fundamental in enhancing the sustainability of the curricular innovation (Alves et al., 2013; De Souza, Zeferino, & Ros, 2008; Frenkel et al., 2007; Lindman & Tahamont, 2006; Potter & Meisels, 2005; Roy et al., 2007). Sources of funds may be internal or external and should be flexible enough to cater for unplanned activities (Rogan & Anderson, 2011).

Implementers and potential implementers need to be included collaboratively in the planning process (Potter & Meisels 2005). Planning of the implementation of the curriculum innovation should be supported through the provision of alternatives to curricular innovation to enhance understanding (Kolmos et al., 2016). Teacher training workshops, including faculty development in educational methods, and dedicating time for reflection should be activities that are planned to support the implementation of curricular innovation (Galea et al., 2015; Ryder et al., 2008). Frequent meetings with programme directors from various levels within the institution need to be planned.

v) Ongoing consultation with educators and students

Ongoing consultation should be done by administrators through consulting students and educators at various phases of planning, implementation and evaluation (Cooke et al., 2016; Hooyman & St Peter, 2006; Pegg, 2013; Rogan & Anderson, 2011; Ryder et al., 2008). Role players could include an external expert to give specific recommendations regarding interventions appropriate to curricular innovation.

vi) Ongoing programme evaluation against standards and the curriculum

Robin et al. (2000) describe the process of measuring the implementation of curricular innovation at various phases of the programme to get a full picture of the extent of the implementation. Quality of the innovation could be ensured further by engaging experts in the field of implementation and evaluation (Potter & Meisels, 2005) and by being guided by specific national documents related to education, inclusive of the curriculum. Centralised system-wide curriculum review processes have been influential in sustaining curriculum innovation (Skelton et al., 2002; Yu, 2015).

viii) Changing organisational culture by disseminating positive outcomes and offering support

Sometimes organisational culture has to change in order to create an environment that supports curricular innovation (Merton, Froyd, Clark, & Richardson, 2009: Wernet & Singleton, 2010). Strategies that were used to change the culture of the organisation were tangible support for educators

(Roy et al., 2007) and publicising best practice related to curricular innovation through conference presentations and creation of a platform for publications (Parker & Quinsee, 2012).

Strategies specific for educators at programme level

Five strategies were described for educators at programme level, namely development of educators through communities of practice or working groups; mentoring; quality assurance by institutional and governing processes, collaboration in the development of course material and curricular enactment, and recognition with incentives.

i) Development of educators through communities of practice or working groups

A variety of approaches can be used for development of educators related to curricular innovation (Wernet & Singleton, 2010). Some of the approaches are the formation of communities of practice (Rogan & Anderson, 2011) or working groups (Cooke et al., 2016) by educators that implement similar curricular innovation. These working groups may be well-organised interdisciplinary educator alliances (Melekis & Woodhouse, 2015; Mowat & Mowat, 2001; Potter & Meisels, 2005). Such learning communities for educators create a supportive environment where colleagues share ideas, attain autonomy in their courses or modules and are informed by continuous feedback from all relevant role players, including students (Elliot, Reason, Coffman, Gangloff, & Raker, 2016; Parker & Quinsee, 2012).

ii) Mentoring

Educators may be mentored in groups or in some case as individuals (Parker & Quinsee, 2012). This mentoring may be through frequent meetings (Ryder et al., 2008) where the mentor is responsive to all questions and concerns of individuals and groups involved in curricular innovation (Galea et al., 2015).

iii) Quality assurance by institutional governing processes

Keesing-Styles, Nash, and Ayres (2014) describe how a set of teaching and learning principles was approved by an academic board. The board made sure that these teaching and learning principles were of acceptable standards and also provided necessary recommendations, hence quality assuring academic programmes. One such recommendation was that working groups be turned into informal reading groups to support institution-based continuous faculty development (Cooke et al., 2016; Galea et al., 2015; Keesing-Styles et al., 2014).

iv) Collaboration in development of course material and review of curricular enactment

Retreats for educators may be used to develop learning material collaboratively (Potter et al., 2015) and to review the enactment of curricular innovation (Ryder et al., 2008).

v) Recognition with incentives

A variety of strategies may be used to encourage educators to sustain curricular innovation. Early adopters may be recognised through disseminating good practice at conferences, or funding of learning or learning and teaching recognition prizes (Parker & Quinsee, 2012).

STRATEGIES TO SUSTAIN CURRICULAR INNOVATION AT INSTITUTIONAL OR MACRO-LEVEL

Strategies to sustain curricular innovations at institutional or macro-level were tailor-made to administrators who were the primary role players at this level.

Strategies for administrators at institutional or macro-level

Four strategies are used to sustain curricular innovations in higher education by administrators at the institutional level, namely supportive leadership; transforming policies, laws and politics; funding for the curricular innovation, and strategic partnerships.

i) Supportive leadership

Harris, Henry, Bland, Starnaman, and Voytek (2003) describe having strong leadership, while Jippes et al. (2013) reflect the need for consistent supportive leadership as a key ingredient to successful curriculum change. Strategic appointments of educators with experience and expertise in the leadership of the implementation of curricular innovation are essential.

In certain circumstances, strong champions need to be appointed into new positions to drive the implementation and monitoring of curricular innovation. Ryder et al., (2008) describe the creation of the position of a full-time curriculum administrator at the level of assistant dean whose specific roles are oversight of educator's curriculum groups, periodic evaluation, continuous communication with the dean, annual outcomes assessment, and follow-up. In the case of Galea et al. (2015), implementation of curriculum issues was overseen by the Vice-Dean: Education.

ii) Transforming policies, laws, and politics

Jippes et al. (2013) describe the need for changing national laws thus allowing for more autonomy in medical schools to support curricular innovation. Politics influence the autonomy and reform of HEIs, and such politics have an intricate relationship with mission statements of these institutions. Transformation of policies should align with the transformation of the mission of the HEI. Harris et al. (2003) state that political commitment leads to strategies that are relevant to communities.

iii) Funding for the curricular innovation

Hooyman and St Peter (2006) describe how funding enabled them to infuse gerontology into the Social Work curriculum. Various authors describe how curriculum innovation grants were used to drive departments and HEIs in meeting the requirements of curricular innovation (Harris et al., 2003; Roy et al. 2007). In Brazil, medical schools were able to sustain their curricular innovation through the program for the promotion of changes in medical school curricula (Alves et al., 2013; De Souza et al., 2008).

iii) Strategic partnerships

Partnerships with various stakeholders (Harris et al., 2003) including a broad consultation with the same stakeholders are essential in strengthening the sustainability of the curricular innovation. In some cases, the stakeholders were engaged through regular meetings in town halls (Ryder et al., 2008), publicising success in community papers and creating community ownership (Harris et al., 2003). Funding, engagement of role players, development of a change plan, mobilised constituencies and creating partnerships sustain curricular innovation (Hooyman & St Peter, 2006).

Discussion

HEIs are faced with the social responsibility of producing relevant graduates who meet the changing needs of the community (Godemann, Bebbington, Herzig, & Moon, 2014). Curricular innovations support HEIs in developing graduates who meet the needs of the community. This review synthesised strategies used to sustain curricular innovations in higher education.

STRATEGIES FOR THE DEVELOPMENT OF EDUCATORS AND APPROACHES RELATED TO INNOVATION

Development of educators provides a platform where educators may improve their competencies related to their practice (Steinert et al., 2006). This review reveals the development of educators as a fulcrum at two of the three levels of higher education in sustaining curricular innovation. It is essential that educators be developed and supported to be able to deal with curricular innovation and the ontological uncertainty that comes with it (Keesing-Styles et al., 2013). The nature of educator development activities have to be tailor-made to the needs of educators in relation to curricular innovation, otherwise efforts to sustain curricular innovation through educators may be futile.

Rogers (1962) postulates a theory that may be used to inform the process of tailor-making educator development initiatives in relation to curricular innovation. According to the diffusion of innovation theory, educators may be classified into five distinct categories based on their reaction to curricular innovation (see Figure 1 for the categories).

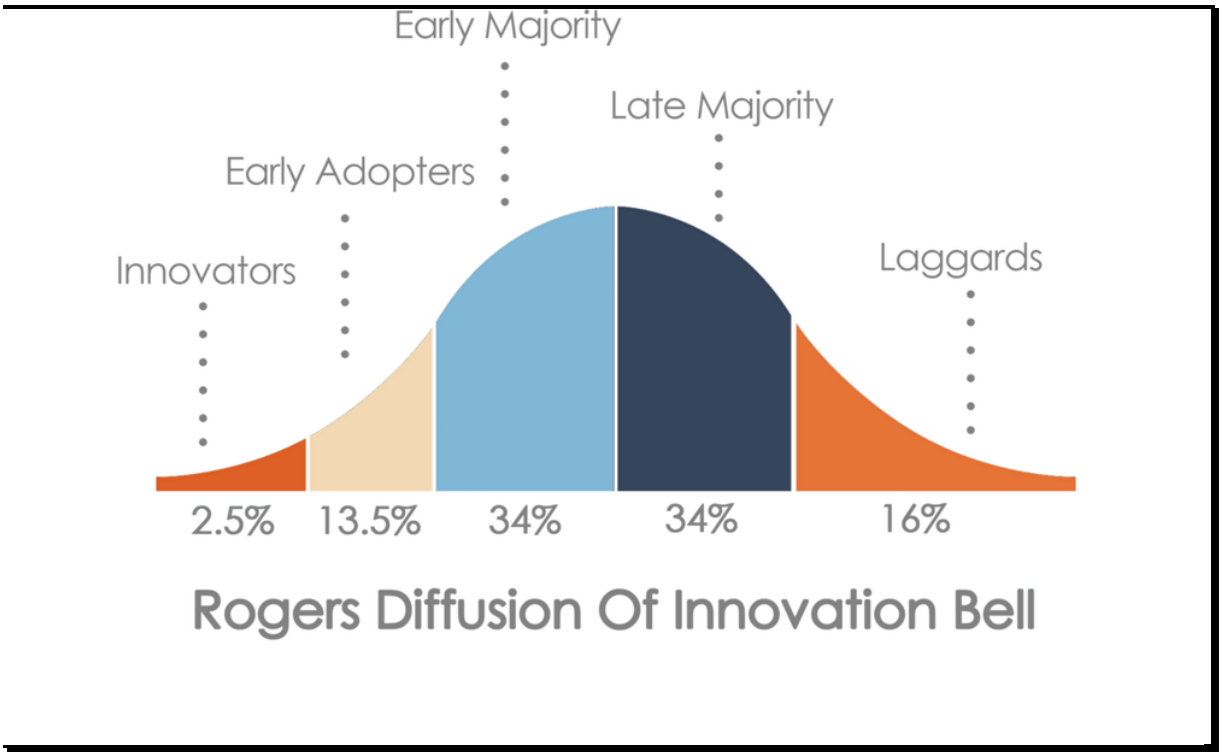


Figure 2. 1 Diffusion of Innovation (Adapted from Krohner, nd)

Educators in the same categories have a similar reaction towards the innovation therefore, educator development approaches could be tailor-made for each particular category of educators. According to Rogers (1962), innovators introduce the curricular innovation to the rest of the educators. The needs of the innovators at this stage are limited to administrative and financial support. Early adopters are engaged with the innovation as soon as they are exposed to it. The early adopters require minimal support and have the potential of being used as champions throughout the implementation of the curricular innovation. Sherry (2001) highlights that early adopters, who could be the champions or change agents, need to be trusted and respected by other educators. Rogers (1995) highlights that most individuals evaluate innovations not based on scientific research by experts, but through the subjective evaluations of near-peers who have adopted the innovations. These champions are seen as role models, and their behaviour tends to be imitated by other educators in the various categories. The case is different when referring to the innovators, as they are usually viewed with mistrust and animosity, because they deviate too far from the norms of the system during the introduction of curricular innovation.

In enhancing the sustainability of a curricular innovation, programme designers and administrators responsible for organising educator's development may find it critical to assess their educator's response to the innovation and use the results of such an assessment to tailor-make educator development activities. It is apparent that the 'one-size-fits-all' approach may not be fruitful. MacVaugh and Schiavone (2010) acknowledge the limitations of the diffusion of innovation theory in specific cases where the same theory does not specify criteria of including individuals into various categories.

STUDENT SUPPORT DURING CURRICULAR INNOVATION

A curriculum represents an expression of ideas, values and is communicated with those associated with a learning institutions, including students (Prideaux, 2003b). Curricular innovations result in uncertainties within the academic institutions, especially among students (VanderJargt, 2013). Such uncertainties require the HEI to support students throughout the curricular innovation. The nature of support for students, inclusive of when and how it is provided, is influenced by the nature of students and that of the curricular innovation.

This review revealed that, in order to sustain curricular innovation, students need to be informed about and oriented to such curricular innovation and change. Davis (2013) reveals the benefits of orientation programmes, where students are informed of the requirements and specification of the curricular innovation and afforded opportunities to ask questions. Orientation may be done through, the simulation of expected changes associated with the curricular innovation, and troubleshooting through answering questions that may arise (Shupp, 2014). This orientation will allow students to be in a better position to understand what and why they are being exposed to such curricular innovation.

Depending on the overall purpose of curricular innovation, students need to be supported cognitively throughout the change process. This review revealed the benefits of structured support provided through learning material, the availability of educators, and even time for students to learn and practice on their own.

In some cases, there may be a need for the development of non-credit-bearing modules that may be viewed as ancillary to the implementation and application of curricular innovation within and among students. These modules could include English for academic purposes (Klimova, 2015) and computer literacy for students.

LEADERSHIP DURING CURRICULAR INNOVATION

Transformation in approaches to leadership within the HEI is critical for the sustainability of curricular innovation. One-dimensional leadership, with lengthy decision-making and approval processes, impedes sustainability of a curriculum innovation. On one hand top-down approaches may limit the ability of maximal curriculum implementation and may stifle innovation, especially if they do not accommodate the voice of the implementer, while on the other hand top down approaches which are organic and flexible may accelerate curricular innovation implementation.

In order for curricular innovations to be sustained, it is essential that leadership approaches be transformed to gravitate towards transformative leadership (Kok & McDonald, 2017). Transformative leadership allows institutional reflection at various levels of the curricular innovation, setting the stage for a bottom-up approach process regarding decision-making.

Design, implementation and the resultant sustainability of curricular innovation should be driven or spearheaded by a specific office or official or team or group. This review revealed specific positions created to support curricular innovation while in some cases, specific offices or officials were tasked with the overall monitoring of the innovation. Although the reviewed literature does not explain the qualities of officials in these leadership roles, Quiness and Parker (2012) suggest that such leaders need to have expertise in education, which is aligned with the curricular innovation. In as much as expertise in education would be crucial, other diverse expertise could provide a fresh and different perspective in fusing curricular innovation. Because this group appreciates a bottom-up approach, they provide an overall oversight of the project, including and coordinating faculty development initiatives with expert educators embracing quality assurance.

QUALITY ASSURANCE OF THE ENACTMENT PROCESS

In his description of curriculum drift, Wilson (2012) describes a deviation of the enacted curriculum from the described or desired curriculum. The curriculum is enacted in the classroom through the interaction of students and their educators.

The monitoring of curricular innovation enactment should be infused with standards as described in the curricular document and aligned to the curricular goals. Skelton et al. (2012) describe measurement and periodic monitoring of curricular enactment through quality assurance cycles. The educator is provided with feedback on their performance related to the curricular innovation. Awards and recognition for outstanding performance are given, remedial steps are provided for educators who are struggling with enactment, and dismissal for poor or non-performers may be provided as an option.

Quality assurance presents an approach for accountability of educators, students and administrators of curricular innovation within the HEIs. When the curricular innovation is not implemented, monitored and sustained reflects a waste of resources and retrogressive development and also may provide opportunities for inquiry into solutions.

Conclusion

A variety of reasons underpin decisions by HEIs globally to engage in curricular innovations (Jippes et al, 2013). HEIs face challenges in sustaining curricular innovations. This integrative review described strategies used to sustain curricular innovations. These strategies are tailor-made to specific role-players who are directly involved with the implementation or enactment of curricular innovation. This review, however, did not reveal the specifications on how to engage with each strategy within higher education. However, strategies presented in this review may be used to diagnose, troubleshoot and support HEIs that are engaged in curricular reform and innovation.

It is recommended that further research investigate the practical application of the combination of these strategies within a higher education context undergoing curricular change. Specific role players

need to be made aware of their role in the development, implementation and sustainability of curricular innovations.

HEIs should sustain curricular innovations if they are to continue producing graduates that are relevant to the changing society. The words of John Dewey come to mind:

'teaching today's students, with yesterdays' methods robs them of their tomorrow'.

Reference list

Almlov, M., & Moberg, E. (2008). Students in possession of the issues of tomorrow. An innovate student led course project. *Journal of Education for Sustainable Development*, *2*(2), 175–179.

Alves, C. L., Belisario, S. A., Abreu, D. M. X., Lemos, J. M. S., D' Avilla, L. S., & Goulart, L. (2013). Curricular transformation in medical school: an exploration of the promotion of change in Brazil. *Medical Education*, *43*, 617–626.

Atkins, C., & Sampson, J. (2002). Critical Appraisal Guidelines for Single-case study research. *ECIS*, *2000 procedings*.

Barradell, S., Barrie, S., & Peseta, T. (2017). Ways of thinking and practising: Highlighting the complexities of higher education curriculum. *Innovations in Education and Teaching International*, 1–10. doi:10.1080/14703297.2017.1372299

Biesta, G. (2007). Why "what works" won't work: Evidence-based practice and the democratic deficit in educational research. *Educational Theory*, *57*(1), 1–22. doi:10.1111/j.1741-5446.2006.00241.x

Blais, K., Mikolaj, E., Jedlicka, D., Strayer, J., & Stanek, S. (2006). Innovative strategies for incorporating gerontology into BSN curricula. *Journal of Professional Nursing*, *22*(2), 98–102. doi:10.1016/j.profnurs.2006.01.006

Bland, C. J., Starnaman, S., Wersal, L., Moorhead-Rosenberg, L., Zonia, S., & Henry, R. (2000). Curriculum change in Medical Schools: How to succeed. *Academic Medicine*, *75*(6).

Chisholm, L., & Leyendecker, R. (2008). Curriculum reform in post-1990s sub-Saharan Africa. *International Journal of Educational Development*, *28*(2), 195–205. doi:10.1016/j.ijedudev.2007.04.003

Clifford, V., & Montgomery, C. (2017). Designing an internationationalised curriculum for higher education: Embracing the local and the global citizen. *Higher Education Research & Development*, *36*(6), 1138–1151. doi:10.1080/07294360.2017.1296413

Cooke, N. A., Sweeney, M. E., & Noble, S. U. (2015). Social justice as topic and tool: An attempt to transform an LIS curriculum and culture. *The Library Quarterly*, *86*(1), 107–124. doi:10.1086/684147

Dang, D. & Dearholt, SL (2017). The John Hopkins Nursing Evidence-based Practice: Model and Guidelines. 3rd edition, Sigma Theta Tau International.

De Souza, P. A., Zeferino, A. M. B., & Ros, M. D. A. (2008). Changes in medicine course curricula in Brazil encouraged by the Program for the Promotion of Medical School Curricula (PROMED). *BMC Medical Education*, *8*, 54. doi:10.1186/1472-6920-8-54

Elliott-Cooper, A. (2017). 'Free, decolonised education': A lesson from the South African student struggle. *Area*, *49*(3), 332–334. doi:10.1111/area.12375

Elliot, E. R., Reason, R. D., Coffman, C. R., Gangloff, E. J., & Raker, J. R. (2016). Improved student learning through a faculty learning community: How faculty collaboration transformed a large-enrollment course from lecture to student centred. *Life Sciences Education*, *15*.

Frenkel, M., Frye, A., Heliker, D., Finkle, T., Yzaguirre, D., Bulik, R., & Sierpina, V. (2007). Lessons learned from complementary and integrative medicine curriculum change in a medical school. *Medical Education*, *41*(2), 205–213. doi:10.1111/j.1365-2929.2006.02654.x

Galea, S., Fried, L. P., Walker, J. R., Rudenstine, S., Glover, J. W., & Begg, M. D. (2015). Developing the new Columbia core curriculum: A case study in managing radical curriculum change. *American Journal of Public Health*, *105*(S1), S17–S21. doi:10.2105/AJPH.2014.302470

Genn, J. M. (2001). AMEE Medical Education Guide no. 23 (Part 1): Curriculum, environment, climate, quality and change in medical education: A unifying perspective. *Medical Teacher*, *23*(4), 337–344. doi:10.1080/01421590120063330

Godemann, J., Bebbington, J., Herzig, C., & Moon, J. (2014). Higher education and sustainable development: Exploring possibilities for organisational change. *Accounting, Auditing & Accountability Journal*, *27*(2), 218–233. doi:10.1108/AAAJ-12-2013-1553

Harris, D. L., Henry, R. C., Bland, C. J., Starnaman, S. M., & Voytek, K. L. (2003). Lessons learned from implementing multidisciplinary health professions educational models in community settings. *Journal of Interprofessional Care*, *17*(1), 7–20. doi:10.1080/1356182021000044111

Hooyman, N., & St Peter, S. (2006). Creating aging enriched social work education: A process of curricular and organisation change. *Journal of Gerontological Social Work*, *48*(1–2), 9–29. doi:10.1300/J083v48n01_02.

Jippes, M., Driessen, E. W., Majoor, G. D., Gijselaers, W. H., Muijtjens, A. M. M., & Van der Vleuten, C. P. M. (2013). Impact of national context and culture on curriculum change: A case study. *Medical Teacher*, *35*(8), 661–670. doi:10.3109/0142159X.2013.785629

Keesing-Styles, L., Nash, S., & Ayres, R. (2014). Managing curriculum change and 'ontological uncertainty' in tertiary education. *Higher Education Research & Development*, *33*(3), 496–509. doi:10.1080/07294360.2013.841655

Klimova, B. F. (2015). Teaching and Learning enhanced by information and communication technologies. *Social and Behavioural Sciences*, *186*.

Kok, S. K., & MacDonald, C. (2017). Underpinning excellence in higher education – an investigation into the leadership, governance and management behaviours of high-

performing academic departments: *Studies in Higher Education*, *42*(2). doi/abs/10.1080/03075079.2015.1036849

Kolmos, A., Hadgraft, R. G., & Holgaard, J. E. (2016). Response strategies for curriculum change in engineering. *International Journal of Technology and Design Education*, *26*(3), 391–411. doi.10.1007/s10798-015-9319-y

Le Grange, L. (2016). Decolonising the university curriculum. *South African Journal of Higher Education*, *30*(2), 1–12. doi:10.20853/30-2-709

Lillevang, G., Bugge, L., Beck, H., Joost-Rethans, J., & Ringsted, C. (2009). Evaluation of a national process of reforming curricula in postgraduate medical education. *Medical Teacher*, *31*(6), e260–e266. doi:10.1080/01421590802637966

Lindman, J. M., & Tahamont, M. (2005). Transforming selves, transforming courses: Faculty and staff development and the construction of interdisciplinary diversity courses. *Innovative Higher Education*, *30*(4), 289–304. doi:10.1007/s10755-005-8349-x

MacVaugh, J., & Schiavone, F. (2010). Limits to the diffusion of innovation: A literature review and integrative model. *European Journal of Innovation Management*, *13*(2), 197–221. doi:10.1108/14601061011040258

Markee, N. (1997). *Managing curricular innovation*. London: Cambridge University Press.

Melekis, K., & Woodhouse, V. (2015). Transforming social work curricula: Institutional supports for promoting sustainability. *Social Work Education*, *34*(5), 573–585. doi:10.1080/02615479.2015.1066325

Merton, P., Froyd, J. E., Clark, M. C., & Richardson, J. (2009). A case study of relationships between organizational culture and curricular change in engineering education. *Innovative Higher Education*, *34*(4), 219–233. doi:10.1007/s10755-009-9114-3

Mowat, H., & Mowat, D. (2001). The value of marginality in a medical school: General practice and curriculum change. *Medical Education*, *35*(2), 175–177. doi:10.1111/j.1365-2923.2001.00829.x

Parker, P. M., & Quinsee, S. (2012). Facilitating institutional curriculum change in higher education. *International Journal of Learning*, *18*(5), 49–60.

Pegg, A. (2014). *"We think that's the future": curriculum reform initiatives in higher education*. York. Retrieved from *http://oro.open.ac.uk/39207/*

Pluye, P, Marie-Pierre, G., Francis, G.& Janique, J., (2009). A scoring system of appraising mixed methods research and concomitantly appraising qualitative, quantitative and mixed methods primary studies in mixed studies reviews. *International Journal of Nursing Studies,* 46 529-546

Potter, R., & Meisels, G. (2005). Enhancing teacher preparation and improving faculty teaching skills: Lessons learned from implementing "Science that Matters" a standards based interdisciplinary science course sequence. *Journal of Science Education and Technology*, *14*(2), 191–204. doi:10.1007/s10956-005-4421-7

Robins, L. S., White, C. B., & Fantone, J. C. (2000). The difficulty of sustaining curricular reforms: A study of "drift" at one school. *Academic Medicine*, *75*(8), 801–805.

Rogan, J. M., & Anderson, T. R. (2011). Bridging the educational research-teaching practice gap: Curriculum development Part2: becoming an agent of change. *Biochemistry and Molecular Biology Education*, *39*(3).

Rogers, E. M. (1962). *Diffusion of innovations*. New York: Free Press of Glencoe.

Rogers, E. M. (1995). Diffusion of innovations: Modifications of a model for telecommunications. In *Die Diffusion von Innovationen in der Telekommunikation* (25–38). Berlin: Springer. doi:10.1007/978-3-642-79868-9_2

Roy, D., Borin, P., & Kustra, E. (2007). Assisting curriculum change through departmental initiatives. *New Directions for Teaching and Learning*, *2007*(112), 21–32. doi:10.1002/tl.295

Ryder, M. I., Sargent, P., & Perry, D. (2008). Evolution and Revolution: The Curriculum Reform Process at UCSF. *Journal of Dental Education*, *72*(12), 1516–1530. Retrieved from http://www.jdentaled.org/content/72/12/1516

Saldana, J., (2012). The coding manual for qualitative researchers. 2nd Edition, London: SAGE

Scogin, S. C. (2016). Identifying the factors leading to success: How an innovative science curriculum cultivates student motivation. *Journal of Science Education and Technology*, *25*(3), 375–393. doi:10.1007/s10956-015-9600-6

Sherry, L. (2001). Sustainability of Innovations. *Journal of interactive learning research*. 13(3) 210

Shupp, P. (2014). Rethinking new student orientation. Retrieved from wsac.wa.gov/sites/default/files/2014/ptw%2836%29.pdf

Sierpina, V. S., Schneeweiss, R., Frenkel, M. A., Bulik, R., & Maypole, J. (2007). Barriers, strategies, and lessons learned from complementary and alternative medicine curricular initiatives. *Academic Medicine*, *82*(10), 946–950. doi:10.1097/ACM.0b013e31814a5092

Skelton, J., West, K. P., & Zeff, T. (2002). Phase 1 of a comprehensive course review process: Program innovation. *Journal of Dental Education*, *66*(3), 405–413.

Steinert, Y., Mann, K., Centeno, A., Dolmans, D., Spencer, J., Gelula, M., & Prideaux, D. (2006). A systematic review of faculty development initiatives designed to improve teaching

effectiveness in medical education: BEME Guide no. 8. *Medical Teacher*, *28*(6), 497–526. doi:10.1080/01421590600902976

Teo, T. W. (2011). *The complexity of reform effort in science curriculum and instruction: A case study of the Illinois Maths and Science academy*. University of Illinois, Illinois.

Van Schalkwyk, S, Bezuidenout, J, Conradie, H, Fish, T, Kok, N, van Heerden, B, & De Villers, M. (2014). "Going rural": driving change through a rural medical education innovation. *Rural and Remote Health,* 14(2).

VanderJargt, D. (2013). *Student thoughts and perceptions on curriculum reform* (PhD Thesis). Western Michigan University.

Vella, J. (2016). The power of dialogue in adult learning. *Reflective Practice: Formation and Supervision in Ministry*, *1*(36), 5-10.

Wernet, S. P., & Singleton, J. L. (2010). Institutionalization of gerontological curricular change in schools of social work. *Gerontology & Geriatrics Education*, *31*(1), 19–36. doi:10.1080/02701960903578386

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing*, *52*(5), 546–553.

Wilson, E. A., Rudy, D., Elam, C., Pfeifle, A., & Straus, R. (2012). Preventing curriculum drift: Sustaining change and building upon innovation. *Annals of Behavioral Science and Medical Education*, *18*(2), 23–26. doi:10.1007/BF03355202

Yu, A. (2015). A study of university teachers' enactment of curriculum reform in China. *International Education Studies*, *8*(11), 113– 11

3 Sustaining a newly implemented competence-based midwifery programme in Lesotho: Emerging issues

"Who dares to teach must never cease to learn"

John Dana (nd)

CHAPTER 3

SUSTAINING A NEWLY-IMPLEMENTED COMPETENCE-BASED MIDWIFERY PROGRAMME IN LESOTHO: EMERGING ISSUES

3.1 INTRODUCTION

Implementing a new curriculum often presents challenges throughout the entire spectrum of an academic programme. These challenges and experiences need to be explored and described if there are contextually relevant solutions are to be designed. This chapter presents an article that describes factors influencing the implementation of the competency-based midwifery programme in Lesotho. Please note that this article was reproduced with permission from the journal.

3.2 MANUSCRIPT DETAILS

Title	**Sustaining a newly implemented competence-based midwifery programme: Emerging issues**
Authors	**Nyoni, Champion N.** Botma, Yvonne
Journal	Midwifery
Journal Details	Special Issue on Education Double blinded peer review journal Listed as an accredited journal by the DoHET [South Africa]

	Impact factor 1.948 (2016 Journal Citation Reports)
Status	Published

3.2.1 JOURNAL INFORMATION

Midwifery publishes peer reviewed international research to inform the safety, quality, outcomes and experiences of pregnancy, birth and maternity care for childbearing women, their babies and families. The journals' publications support midwives and maternity care providers to explore and develop their knowledge, skills and attitudes informed by best available evidence. Midwifery articles cover cultural, clinical, psycho-social, sociological, epidemiological, education, managerial, workforce, organizational and technological areas of practice in preconception, maternal and infant care, maternity services and other health systems (Midwifery, 2018: online)

3.2.2 SUBMISSION RECORD

The manuscript was submitted on 23 November, 2017. Corrected version was sent on 18 January, 2018 and accepted on the 20th January, 2018.

3.2.3 CONTRIBUTION RECORD

The candidate conceptualised the study, collected the data, analysed the data and drafted the manuscript. The promoter of the study, also conceptualised the study and was engaged in the analysis of the collected data and critical reading of the manuscript.

3.2.4 ASSOCIATED ADDENDA

Addendum N: Response to reviewer's comments: Midwifery

3.3 PUBLISHED ARTICLE ONE

Midwifery 59 (2018) 115–117

Contents lists available at ScienceDirect

Midwifery

journal homepage: www.elsevier.com/locate/midw

Sustaining a newly implemented competence-based midwifery programme in Lesotho: Emerging issues

Champion N. Nyoni*,[1], Yvonne Botma[1]

School of Nursing, University of the Free State, Bloemfontein, South Africa

ARTICLE INFO

Keywords:
Sustainability
Curricular innovation
Midwifery education
Regulation

ABSTRACT

The need to develop midwives who improve maternal and neonatal outcomes underpins decisions to adopt competence-based education models in low- and middle-income countries. Competence-based education means a shift in the training of midwives to include student self-directed performance-oriented training. Sustaining the implementation of a curricular innovation, such as a competence-based curriculum, requires new skills and resources by countries adopting such innovation. The skills and resources needed to sustain such a curricular innovation are influenced by issues that arise during implementation of the curricular innovation. Through structured interviews with stakeholders in midwifery education and document analysis in a small sub-Saharan African country, we reveal emerging issues that threaten the sustainability of a newly implemented competence-based midwifery curriculum. In this article, we argue that monitoring and supporting the implementation of a curricular innovation, is essential in enhancing midwifery education institutions ability to sustain curricular innovation. Regulation through professional bodies and councils enhance institutional, programmatic and classroom accountability.

Background

Competence-based education promises to improve the quality of midwifery practice through aligning midwifery competences with midwifery training (Fullerton et al., 2013; Le et al., 2014). The need for competent midwives cannot be overemphasised in sub-Saharan Africa, where maternal and neonatal outcomes remain poor (United Nations Population Fund, 2014) coupled with failing health delivery systems (World Health Organization, 2014).

Lesotho, a small sub-Saharan African country, adopted a competence-based approach to the training of nurses and midwives in 2012 (Ministry of Health, 2012). A competence-based curriculum (CBC), informed by the International Confederation of Midwives (ICM) Global Standards for Midwifery Education (International Confederation of Midwives, 2013), was developed and implemented for the first time in 2014. The midwifery educators viewed competence as inevitably linked to a complex situation where the midwife demonstrates psychomotor skills, solves problems, makes clinical judgement, acts professionally and interacts with other healthcare professionals and family within a context (Fernandez et al., 2012).

The implementation of the CBC implied a transformation in teaching to focus on student-driven and performance-oriented approaches. To support the necessary changes in teaching and learning, educators needed to develop engaging learning materials that promote student-centred learning in the form of workbooks and study guides. A development partner provided the midwifery education institutions with state-of-the-art simulation facilities equipped with high-fidelity human birthing simulators. High-fidelity simulation, when included in teaching and learning activities, supports the development of competence and confidence (Blum et al., 2010) as well as promoting transfer of classroom learning to the workplace (Botma, 2014). Integrated assessment of competence replaced the paper-based written examinations of the previous curriculum (Nyoni and Botma, 2017).

Two years after the implementation of the CBC for midwifery in Lesotho, evidence gathered through minutes of meetings and informal discussions with educators, students and administrators revealed challenges that threaten the sustainability of the CBC. This article reports on issues that challenge the sustainability of a newly implemented CBC in Lesotho.

Methods

A qualitative descriptive study (Polit and Beck, 2010) coupled with document analysis (Bowen, 2009) was conducted to describe factors

* Corresponding author.
E-mail address: cnyonioffice@gmail.com (C.N. Nyoni).
[1] Postal address: University of the Free State, P.O. Box 339, Bloemfontein 9300, South Africa. Country: South Africa.

https://doi.org/10.1016/j.midw.2018.01.015
Received 23 November 2017; Received in revised form 18 January 2018; Accepted 20 January 2018

influencing the sustainability of the CBC in all five midwifery education institutions in Lesotho, randomly identified using the first five letters of the alphabet. Data were collected through semi-structured interviews with administrators (n = 12), educators (n = 5), and clinical instructors (n = 4) focusing on their experience in supporting and implementing the newly implemented CBC. Five focus group discussions comprising an average of eight midwifery students per midwifery education institution were also conducted. A single open ended question namely 'Please explain how you experienced the CBC midwifery programme' was posed to each focus group. Documents that influenced the implementation of the CBC midwifery programme, for example policies and rules, were collected based on a framework developed from the ICM Global Standards for Midwifery Education (2013). Data analysis proceeded in a step-wise approach through inductive reasoning interlinking frameworks by Bowen (2009), Saldana (2009) and Creswell (2013). Ethical clearance for the study was obtained, including individualised consent (ID25-2017).

Findings

Four themes emerged, namely –

- accountability within and for the programme;
- management of the programme;
- educators' capacity to implement the CBC; and
- students' response to the CBC.

Accountability within and for the programme

Curriculum enactors and administrators reflected minimal to no consequence for the non-enactment of the CBC. The educators described that they were not supervised in their teaching, therefore doing 'what [they] thought was correct' (D1) even when not aligned with the CBC. The documents revealed limited evidence of classroom, simulation and clinical teaching being in-line with the CBC. Educational quality assurance processes, such as peer and supervisory review were not conducted in most institutions. One of the heads of the midwifery programme explained that since the introduction of the CBC, there have been limited consequences for educators from authorities for not going to class:

> In this institution, people just don't go to class anymore ... and they get away with it. (D2)

This scenario is claimed to be a result of a misguided perspective regarding self-directed learning by the educators and their authorities. The limited accountability within the programme seemed to arise from the limited influence of the professional council in monitoring and accrediting the midwifery programme.

> they [council] have never come to check how we are doing with this new curriculum ... it is business as usual. (B1)

Policies underpinning the administration, implementation and monitoring of the CBC were not developed, evidenced by limited midwifery-specific policy documents across all institutions.

Management of the programme

The head of the midwifery programme at each institution influences the sustainability and enactment of the CBC. Within two and a half years of the implementation of the CBC, all except one of the heads of midwifery programmes had been replaced. The reason justifying the change was explained as meeting the stipulations of institutional policies.

> The position of the HOP [Head of Programme] is rotated every two years...according to institutional policy (B2)

The newly appointed heads of the midwifery programmes described that they had limited experience regarding programme administration, especially within the context of a new curriculum. These new Heads of midwifery programmes verbalised limited orientation on the requirements of their appointment. They claimed that this situation contributed to their failing to monitor the enactment of the CBC. The documentary analysis revealed limited evidence of activities specific to their domain, namely programme management meetings, programme budgets, including faculty and student management activities. One of the heads of programme reported:

> I don't really know what I am supposed to do in the classroom as I supervise my subordinates. (C3)

Budgetary issues also influenced the implementation of the CBC. Acquisition of the required funding followed a lengthy bureaucratic process, but most of the institutions however had sufficient funding to support CBC implementation. In some institutions, the funding was not optimally utilised due to the programme administrators' limited knowledge of the requirements of a CBC. An accountant from one of the institutions mentioned:

> We do have funds ... it's just that we haven't seen a [budgetary] change in terms of the requirements of the CBC. (C1)

Educators' capacity to implement the curriculum

Teaching plans, workbooks, study guides and scenarios for simulation activities which were supposed to reflect student-centred teaching and learning strategies were lacking. Educators related the use of traditional teaching methods, associated with the previous curriculum, namely lectures, PowerPoint and dictation of notes.

> I still lecture my students, and use the slides I have been using ... (B4)

Futile attempts were made to stimulate self-directed learning among students. Some of the educators stated that they asked students to search for information related to specified learning outcomes and present such information in groups. According to students, they searched for such information with limited support and guidance:

> [W]e are told this is CBC, you have to look for information on your own ... ... I think they [educators] do not understand this curriculum. (D; students)

Institutional turbulence associated with the resignation of key educators who were trained in delivering the CBC, hiring of new educators, and limited opportunities for continued professional development (CPD), compounded the capacity of educators to implement the CBC. One educator reflected:

> The other educators with experience in the curriculum have left the school ... we need to be trained in delivering this CBC perhaps. (B3)

Students' reaction to the new curriculum

Students were demoralised with midwifery training which they perceived to be compulsory. This demoralisation affected their motivation to learn midwifery. They claim to have enrolled in the midwifery programme only to secure employment as the government only hires nurses trained in midwifery. The students expressed that they did not have prospects of engaging in midwifery practice after the training. The poor enactment of the CBC in the training institutions further compounded students' negative reaction towards midwifery training.

> For me it was not about the CBC. I do not like midwifery and that's it. (C; students)

In one institution, where leadership and educators were stable over

time, students seemed to be better poised regarding the CBC and they were able to offer constructive recommendations for the improvement of the programme.

> Workbooks should be tailor-made to all our learning styles. (A; students)

Discussion

A lack of support and monitoring of a newly implemented CBC threatens its sustainability. Monitoring and accountability of a new curriculum should be evident in the classroom, throughout the programme and at institutional level. Professional regulatory councils set standards for midwifery education, are also responsible for supporting, monitoring and regulating midwifery education institutions. The limited involvement of professional regulatory councils in the regulation and support of a newly implemented curricular innovation and a lack of expertise of the educators, set the stage for curriculum drift, where the curriculum reverts to its pre-innovative ancestor (Wilson et al., 2012).

Professional regulatory councils of countries within the same region should formulate regional consortia and collaboration that provide a platform for effective support and monitoring of curricula enactment. Such consortia should support the exchange of expertise that may be used to design and support CPD activities for newly appointed educators and the accreditation of midwifery education programmes. Accreditation should be influenced by contemporary midwifery education standards and expectations as described in the new curriculum. Such processes improve monitoring, accountability and educational quality in the classroom and clinical practice environments for programmes implementing new curricula.

Conclusion

The implementation of curricular innovation, such as the CBC, needs to be supported and monitored to enhance its sustainability. Further research should explore establishing and strengthening regulatory consortia in low- and middle-income countries in relation to midwifery education. Newly implemented curricula need to be monitored to enhance their sustainability.

Acknowledgements

The authors acknowledge Prof. Michael Rowe and Dr Ruth Albertyn for critical reading the manuscript, and Ms Jackie Viljoen for language editing of this manuscript.

Conflict of interest

The authors declare no conflict of interest with regards to the study.

Ethical approval

The study was approved by the Institutional Review and Ethics Board of the Ministry of Health in Lesotho. Ethics approval number (ID25-2017). Consent to participate in the study was sought from all participants.

Funding sources

This work was supported by the Sigma Theta Tau International (STTI) Alpha Eta Collaborative Research Grant.

Clinical trial registry and registration number

Not applicable.

References

Blum, C.A., Borglund, S., Parcells, D., 2010. High-fidelity nursing simulation: impact on student self-confidence and clinical competence. International Journal of Nursing Education Scholarship 7. http://dx.doi.org/10.2202/1548-923X.2035.

Botma, Y., 2014. Nursing student's perceptions on how immersive simulation promotes theory–practice integration. International Journal of Africa Nursing Sciences 1, 1–5. http://dx.doi.org/10.1016/j.ijans.2014.04.001.

Bowen, G.A., 2009. Document analysis as a qualitative research method. Qualitative Research Journal 9, 27–40. http://dx.doi.org/10.3316/QRJ0902027.

Creswell, J.W., 2013. Research Design: qualitative, Quantitative, and Mixed Methods Approaches. Sage, London.

Fernandez, N., Dory, V., Ste-Marie, L.G., Chaput, M., Charlin, B., Boucher, A., 2012. Varying conceptions of competence: an analysis of how health sciences educators define competence. Medical Educator 46, 357–365. http://dx.doi.org/10.1111/j.1365-2923.2011.04183.x.

Fullerton, J.T., Thompson, J.B., Johnson, P., 2013. Competency-based education: the essential basis of pre-service education for the professional midwifery workforce. Midwifery 29, 1129–1136. http://dx.doi.org/10.1016/j.midw.2013.07.006.

International Confederation of Midwives, 2013. ICM – global standards for education. Available from: ⟨http://internationalmidwives.org/what-we-do/education-coredocuments/global-standards-education/⟩ (last accessed 14 November 2014).

Le, C., Wolfe, R.E., Steinberg, A., 2014. The past and the promise: Today's competency education movement. Students at the Center: Competency Education Research Series. Jobs for the Future. Available from: ⟨https://eric.ed.gov/?Id = ED561253⟩ (last accessed 14 November 2014).

Ministry of Health, 2012. Nursing and Midwifery Strategic Plan 2010–2015. Maseru.

Nyoni, C.N., Botma, Y., 2017. Aligning summative clinical examination with competence-based curriculum: midwifery educators' experiences in Lesotho. International Journal of Africa Nursing Sciences 7, 11–17. http://dx.doi.org/10.1016/j.ijans.2017.05.003.

Polit, D.F., Beck, C.T., 2010. Essentials of Nursing Research: appraising Evidence for Nursing Practice. Lippincott Williams & Wilkins, New York.

Saldana, J., 2009. The Coding Manual for Qualitative Researchers. Sage, London.

United Nations Population Fund, 2014. State of the world's midwifery 2014. Available from: unfpa.org/sowmy (last accessed 14 November 2017).

Wilson, E.A., Rudy, D., Elam, C., Pfeifle, A., Straus, R., 2012. Preventing curriculum drift: sustaining change and building upon innovation. Annals of Behavioural Science and Medical Education 18, 23–26.

World Health Organization, 2014. The Health of the People: What Works. The African Regional Health Report. Available from: who.int/iris/bitstream (last accessed 22 November 2017).

4 Implementing a competency-based midwifery programme in Lesotho: A gap analysis

“Changes are inevitable and not always controllable.

What can be controlled is how you manage,

react to, and work through the change process.”

Kelly A. Morgan (nd)

CHAPTER 4

IMPLEMETING A COMPETENCY-BASED MIDWIFERY PROGRAMME IN LESOTHO: A GAP ANALYSIS

4.1 INTRODUCTION

This chapter presents a manuscript that describes the implementation of the competency-based midwifery programme in Lesotho, through a gap analysis. The purpose of this study was to describe the implementation of the competency-based midwifery programme in Lesotho, using the ICM global standards for midwifery education and the describe curriculum namely the CBC.

4.2 MANUSCRIPT DETAILS

Title	**Implementing a competency-based midwifery programme in Lesotho: A gap analysis**
Authors	**Nyoni, Champion N**. Botma, Yvonne
Journal	Nurse Education in Practice
Journal details	Section on Midwifery Education Double blinded peer review This Journal is listed as accredited by the DoHET [South Africa] Impact factor: 1.313
Status	Accepted and published online

4.2.1 JOURNAL INFORMATION

Nurse Education in Practice enables lecturers and practitioners to both share and disseminate evidence that demonstrates the actual practice of education as it is experienced

in the realities of their respective work environments, that is both in the University/faculty and clinical settings. It is supportive of new authors and is at the forefront in publishing individual and collaborative papers that demonstrate the link between education and practice. Nursing is a discipline that is grounded in its practice origins - nurse educators utilise research- based evidence to promote good practice in education in all its fields. A strength of this journal is that it seeks to promote the development of a body of evidence to underpin the foundation of nurse education practice, as well as promoting and publishing education focused papers from other health care professions which have the same underpinning philosophy (Nurse Education in Practice, 2018).

4.2.2 SUBMISSION RECORD

The manuscript was initially submitted on the 2nd of August, 2018, and reviewed and resubmitted for the second round of review on the 4th of October, 2018 and was accepted on 6th of November, 2018 and published on-line on the 7th of November, 2018.

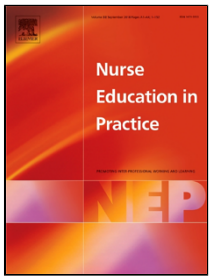
4.2.3 CONTRIBUTION RECORD

The candidate conceptualised the study, collected the data, analysed the data and drafted the manuscript. The promoter of the study, also conceptualised the study and was engaged in the analysis of the collected data and critical reading of the manuscript.

4.2.4 ASSOCIATED ADDENDA*:*

Addendum O: Response to reviewer comments

4.3 MANUSCRIPT TWO



Accepted Manuscript

Implementing A Competency-Based Midwifery Programme In Lesotho: A Gap Analysis

Champion N. Nyoni, Yvonne Botma

PII:	S1471-5953(18)30550-X
DOI:	10.1016/j.nepr.2018.11.005
Reference:	YNEPR 2478
To appear in:	Nurse Education in Practice
Received Date:	24 July 2018
Accepted Date:	06 November 2018

Please cite this article as: Champion N. Nyoni, Yvonne Botma, Implementing A Competency-Based Midwifery Programme In Lesotho: A Gap Analysis, Nurse Education in Practice (2018), doi: 10.1016 /j.nepr.2018.11.005

Title page

Title:	IMPLEMENTING A COMPETENCY-BASED MIDWIFERY PROGRAMME IN LESOTHO: A GAP ANALYSIS
Author names:	Champion N. Nyoni [1]; Yvonne Botma[2]
Institutional affiliation:	[1,2] School of Nursing, University of the Free State Bloemfontein South Africa
Postal Address:	P.O. Box 339 Bloemfontein 9300 South Africa
Email addresses:	[1] cnyonioffice@gmail.com [2] botmay@ufs.ac.za
Corresponding:	Champion N. Nyoni

Acknowledgements

The authors acknowledge Dr. R. Albertyn for critically reading the manuscript and Ms. J Viljoen for assistance with technical editing. Mr. Smith Shanyurai is thanked for his role as the research assistant, supporting the data collection exercise.

Funding sources: This work was supported by the Sigma Theta Tau International (STTI) Alpha Eta Collaborative grant.

Abstract

Global reforms in health professions education, including midwifery, support the transformation of education programmes to adopt competency-based models. Lesotho, a small sub-Saharan African country, with perennially high maternal and neonatal mortality, adopted a competency-based education model in the design and subsequent implementation of a one-year post-basic midwifery programme. Through a gap analysis involving administrators, educators and students in all the nursing education institutions in Lesotho, we explored their experiences related to the implementation of a competency-based midwifery programme after three years of continuous implementation. The findings revealed a vast gap between the described curriculum, and what was enacted in the nursing education institutions. The essential components of the midwifery programme had not been transformed to accommodate competency-based education. We argue that structural and operational elements of a programme should be adjusted before and during the implementation of such a curriculum innovation to enhance a positive teaching and learning experience, further sustaining the programme. Therefore, contextually relevant frameworks aimed at supporting the implementation and sustainability of the entire programme should be developed.

Highlights

- Nursing education institutions need support in implementing new curriculum
- Structural and operational adjustments should be made to all new programmes
- Contextually based frameworks should inform implementing new midwifery programmes

Key words

Competency-based education; midwifery programmes; implementation

Implementing a competency-based midwifery programme in Lesotho: a gap analysis

1. Introduction

Maternal and neonatal mortality is often significant in low and middle-income countries, where the majority of the global population lives. In these countries, competent midwives have the potential to reduce maternal and neonatal mortality (UNFPA, 2014) as they are usually the first and only skilled birth attendants that pregnant women may have access to. This picture highlights the need for high-quality pre-service midwifery education programmes in such countries as they battle the burden associated with high maternal and neonatal mortality indicators.

The World Health Organisation (WHO) and the International Confederation of Midwives (ICM) have called for reforms in the education of midwives since the late 90's and early 2000s (ICM, 2013). Central to these reforms is the adoption of competency-based models for the education of professional midwives. Competency-based education nests the design and development of educational programmes under described and desired professional competencies. A variety of competency frameworks exist in health professions education such as the CanMEDS (Frank et al., 2017). However, the ICM proposes seven professional competency domains of a midwife, which programme designers of pre-service midwifery education could adopt and adapt during programme design, development and implementation (ICM, 2013).

The adoption of competency-based education models has influenced health professions education globally. Several authors report positive outcomes related to

implementing competency-based education in their education programmes. Such outcomes include improved student procedural skills (Barsuk et al., 2012), improved patient care and critical thinking, (Ash et al., 2018) and even increased student confidence (Kerdijk et al., 2013). However, these positive outcomes have been reported predominantly in high-income countries and in medical education. In light of such positive outcomes, Hawkins et al., (2015) explain that competency-based education is not a panacea, but offers a plausible alternative and improvement in education when compared to behavioristic models that characterize most traditional health professions education programmes.

Implementing a competency-based education programme is an intricately complex process particularly in low- and middle-income countries (Nyoni and Botma, 2018). This intricate process often affects the ability of educational institutions to sustain the implementation of such programmes resulting in curriculum drift (Woods, 2015) or failure. Hawkins et al., (2015) summarise concerns and challenges inherent in the implementation of competency-based programmes as being practical, administrative and logistical.

Programme evaluators underscore the importance of unearthing implementation issues and challenges, proposing solutions and implementing such solutions for sustained change (Anakin et al., 2018). In this article, we argue that structural and operational adjustments should be made by education institutions before and during the implementation of a competency-based programme. Such programme adjustments should be monitored continuously.

2. The context of the study

The maternal and neonatal mortality in the Kingdom of Lesotho is above the regional average (UNFPA, 2017). Multiple factors have been attributed to this situation, and chief among them is the quality of education of midwives within the kingdom (Ministry of Health [Lesotho], 2012). In an attempt to improve the quality of pre-service midwifery education, the government of the Kingdom of Lesotho adopted competency-based education for all nursing and midwifery programmes through its Nursing and Midwifery strategic plan of 2010 (Ministry of Health [Lesotho], 2012). In this setting, competence was viewed as inevitably linked to a complex situation where the midwife demonstrates psychomotor skills, solves problems, makes a clinical judgement, acts professionally and interacts with other healthcare professionals and family within a context (Fernandez et al., 2013). The implication of such a policy change was the need to transform all nursing and midwifery programmes nationally to adopt competency-based education.

Through the Global Nurse Capacity Building Programme (GNCBP), all six Nursing Education Institutions (NEIs) in Lesotho were recipients of the Nursing Education Partnership Initiative (NEPI) grant. This grant supported the development of the first-ever competency-based curriculum (CBC) for the one year post basic Diploma in Midwifery programme in 2012 (Botma, 2014) which was implemented for the first time in 2014. The CBC replaced a content-driven hospital-based curriculum that was used in all midwifery programmes in NEIs in Lesotho. In the content-driven midwifery programme, learning was teacher directed with lectures dominating approaches to teaching. Academic information was gleaned from three midwifery textbooks and teacher's notes while clinical skills were taught only in midwifery

related departments of district and central hospitals with limited engagement in the community. Professional midwives in practice were naturally expected to teach and assess students in the wards (Nyoni and Barnard, 2016). Summative assessments were done primarily through three-hour written examinations and observation of only two clinical procedures at the end of the academic year. The professional regulatory body approved the content driven curriculum and set a minimum number of clinical procedures required by graduates of the programme for professional licensing.

The new CBC was underpinned by constructivism as a learning theory spliced with other educational principles namely constructive alignment (see Biggs, 1996), scaffolding (MacBlain, 2018) and learning within authentic environments. The professional competency domains as described by the ICM (ICM, 2013), where adopted and adapted based on the local context and were used to structure the CBC. National indicators, midwifery education stakeholders and international documents (ICM, 2010) guided the development of the new curriculum. Student centred approaches to learning replaced the teacher-oriented approaches and teachers were expected to support students throughout their learning. In supporting authenticity, high fidelity birthing simulators were acquired for each NEI through the NEPI grant, and students engaged with the simulators before and during clinical placement. Summative assessments were transformed to include integrated assessments (Nyoni and Botma, 2017).

A comparison between the previous curriculum and the CBC using Harden, (2001) elements of a curriculum in health professions education is depicted in table 1.

The Competency-Based Midwifery (CBM) programme was implemented after a series of faculty development and capacity building exercises. These exercises focused on curriculum development, programme design, assessment, teaching and learning and supporting students and have been reported elsewhere (see Botma and Nyoni, 2015). These authors noted during sessions on the development of teaching and learning materials, that educators found it difficult to apply new knowledge in developing teaching and learning material (Botma and Nyoni, 2015). A couple of years after the implementation of the CBC, the authors became aware of the disparities in the enactment of the CBC within the midwifery programme among NEIs in Lesotho. Evidence supporting such disparities were gleaned from meeting minutes, interaction with primary stakeholders in the implementation of the CBM programme and accreditation results from the Council on Higher Education (Lesotho).

This article reports an examination of the implementation of the CBC within midwifery programme in NEIs in Lesotho through a gap analysis.

3. Methodology

3.1 Study design

A gap analysis permits for the appraisal of actual enactment of the CBC in a midwifery programme against a gold standard. The gold standard in this case was the described CBC, including its underpinning mission, philosophy, objective, outcomes and even learning opportunities. The authors also utilized the ICM global standards for midwifery education (ICM, 2013) to guide the inquiry. Qualitative

descriptive research was engaged in the appraisal of the implementation of the CBM programme in NEIs in Lesotho.

3.2 Population

All the NEIs (N=5) that implemented the CBM programme in Lesotho since 2014 were included in this study. The first five letters of the alphabet were randomly used to identify each NEI. Primary stakeholders engaged in the implementation of the CBM programme with a minimum of one-year experience in each institution were included. These primary stakeholders were clustered into three groups namely; the administrators (A), the facilitators (F) and the students (S).

The administrators comprised the heads of schools, heads of the midwifery programme, institutional administrators, accountants and human resource officers. The facilitators included educators, clinical supervisors, and clinical instructors. All included students were at the exit level of the CBM programme in their respective NEIs and so could provide a 'thick' description of their experience in the programme.

Programme documents used to guide the implementation of the CBM programmes were also included in the study (Bowen, 2009).

3.3 Data collection

Data were collected through semi-structured interviews with administrators (n=11), facilitators (n=12) and through five focus groups with students (n=48). These stakeholders were asked to describe their experiences in the implementation of the CBM programme in their institutions. Data were collected in English, and in some

cases through the local language, by the researchers and a research assistant in May 2017. All available documents were accessed, de-identified, and re-identified using the respective alphabet letter and copied.

3.4 Ethics

This study was approved by the Health Science Research Ethics Committee of the University of the Free State (HSREC 22/2017) and the Institutional Research and Ethics Committee of the Ministry of Health in Lesotho (ID 25-2017). Consent to be part of the study was sought from each individual included in this study. The framework for ethical educational research underpinned the design and implementation of this study (Burgess & Cilliers, 2017).

3.5 Data analysis

Data analysis was conducted through a stepwise approach underpinned by contemporary frameworks for qualitative data analysis (Saldana, 2009; Creswell, 2013), deductive reasoning and critical realism. The interviews were transcribed verbatim and necessary translations to English were done. The transcripts were uploaded into a password protected folder in ATLAS. Ti ™ software for qualitative data analysis. Structural coding packaged chunks of data based on the ICM global standards for midwifery education (ICM, 2013). Initial coding and SWOT analysis of the data was done to reveal the results of the study.

The framework by Bowen (2009) was used in the analysis of the captured documents. Documents were enumerated per individual institution and packaged according to the ICM global standards for midwifery education. Analysis of the

documentary evidence was based on the relevance and alignment of the documentary evidence with the educational philosophy of the CBC and ICM global standards for midwifery education.

3.6 Rigor

The quality of the study was enhanced through multi-site and multi-source triangulation (Leung, 2015). Data were collected by the first author who is experienced and trained in conducting interviews. Field notes grounded the researcher's perspectives and the electronic software and use of an experienced co-coder enhanced the consistency of the data analysis process.

4. Results

The results of this study are presented as under each standard of the ICM global standard for midwifery education (ICM, 2013). Direct quotes from stakeholder interviews and documentary evidence are used as evidence per standard.

4.1 Organisation and Administration

The NEIs reported that they faced challenges within their internal governance structures that made it difficult for them to implement and account for programme specific decisions. Four of the five institutions are departments of hospitals, with hospital boards having administrative and financial control of the institutions. Participants felt they were not being heard when negotiating for the various requirements associated with the programme from such boards, affecting their ability to fully adopt the CBC. An administrator stated;

we struggle to make independent decisions in our institutions, we have to get approval from the hospital. Those people have no idea, what we want and what this curriculum needs (BA5)

Only one of the CBM programmes, from an NEI which was semi-autonomous, was fully accredited by the Council on Higher Education (Lesotho). The NEI with an accredited CBM programme revealed the impact of independence in decision making as influential in achieving most of the programme requirements. The head of school verbalized that;

We only report our activities to the board, but our institution has a dedicated management team that is responsible for running the school...it [the management team] even makes decisions regarding finances (AA1)

All NEIs established a position of the Head of the Midwifery programme (HoP). However, the effectiveness of such a position was limited, as succession plans were not clearly detailed and the incumbents felt unprepared for such positions. Their experience in the previous curriculum was not as helpful and the fact that the term of office was only for two years complicated the situation. Their appointments were based on rotation and not competence in leadership. A HoP about to complete her term stated;

I was told Madam you are now the HoP [Head of Programme]. The previous one was not ready to orient me, as I think she also couldn't understand what was going on. But anyway my term is also done (CA1)

Funding, which usually comes through from the government for student bursaries and institutional subsistence was delayed affecting the planning of most activities associated with the programme. An accountant highlighted;

the government subvention has never come on time… from the time I have been here. It is always late and that affects planning. We can't do what we plan for because of them (BA5)

Academic oversight of all of the NEIs was expected to be provided by a local University with a faculty of health sciences. An affiliation document was in place, but had since expired. Such academic oversight seemed not to be useful as the University was neither implementing a similar programme nor had competence in overseeing a CBM programme. One frustrated teacher stated:

...I for one, I am sick of the University, it doesn't help us in any way, they are supposed to supervise their affiliates, but they just sit and wait for results (AF2)

4.2 Midwifery faculty

The midwifery faculty in the NEIs had variations in qualification with regards to both midwifery and education. These qualifications ranged from, on one hand, a Diploma in Midwifery through to integrated degrees with midwifery components to Master degrees specializing in Midwifery, while on the other hand, from not having any qualification in education to faculty with Masters degrees in Health Professions Education. Faculty had diverse ranges of experience which was distributed between clinical practice and midwifery education. Most faculty had at least two years of midwifery experience and more than a year in education. However, their qualifications had limited impact on their new roles as facilitators in a CBM

programme, as implementing the CBC required a different set of facilitation skills. No clear tailor-made faculty development approaches were in place in the NEIs and faculty were not engaged in their own learning.

we don't necessarily have a [faculty development] plan, but teachers take turns to enrol for formal academic programmes, so they have to wait for the one who is enrolled to finish and come back… then the next can go (BA1)

I was not part of the CBC training which was done through the NEPI, and I am now supposed to be implementing [the new programme] (EF1)

The limitations in the abilities of educators in implementing a CBC were experienced by students, who felt often unsupported in their own learning. Students revealed that faculty seemed to operate on a misguided understanding of self-directed learning.

The annoying part about this curriculum…when they give us work. These teachers, will give us a task as groups and then they disappear and expect us to present to each other when they are not even there, why we do this, we will argue and there is never a final answer (ES)

... it's like all these should be taken to one big workshop, where they are taught what they should do…we feel cheated by these teachers, they even confess that they have no idea about this curriculum… (DS)

Faculty appointed for clinical teaching where challenged further. Some institutions fully depended on the professional nurse-midwife in the clinical setting for

clinical teaching, while one NEI had fully fledged appointed clinical instructors even running preceptorship programmes in line with the CBM programme. One of the interviewed clinical instructors who is expected to demonstrate skills for a student population of over a hundred explained;

I am appointed to work in this simulation lab, to demonstrated procedures to students…I expect the clinical personnel to be the ones supervise the students in the wards (BF1)

4.3 Student body

Legislative requirements in Lesotho, expect that all nursing professional are expected to have a midwifery qualification before practice. This requirement demotivated some students while studying midwifery, with some of them claiming that they had different career trajectories in nursing. Students expressed that;

For me, it's not about the CBC, I am not motivated to study this thing. I perceive it as compulsory, us being used by the government for its own mission…Even if it was well presented, I don't like midwifery (AS)

NEIs inherited students from their general nursing programmes into the CBM programme which are usually in large numbers making constructivist approaches to teaching, such a group work and discussions very difficult. The three-year Diploma in General Nursing was still using the traditional content driven curriculum.

We have a really large number of students, we cannot do much of this individual teaching and even follow each student… I mean I can't even be sure if they all learn, their number (BF1)

Students in the CBM programme were expected to direct their own learning in a supported environment. Students were not oriented to self-directed learning approaches and claimed to be unsupported by their NEI's. Some students verbalized;

Yes, we never had an orientation to this, we were just told this is it…we had to do this and start learning (DS)

We have serious internet issues here… these teachers switch off the internet on their way home and we get stuck [in finding information]. We spend the whole day in class and hope to do assignments in the evening (CS)

4.4 Curriculum

All institution had approved copies of the CBC document. Only one institution had managed to develop, print and continuously update their workbooks for their students throughout the entire time of implementation as stipulated in the curriculum document. In other cases, educators referred to materials used in the previous curriculum while others resorted to teaching via power point.

I dust my old notes, ... the one from the previous programme and read for the students... (BF2)

I am pressed of time, most of the time, so I simply prepare a power point and teach from the power point (EF1)

Teaching in the clinical setting was monitored through logbooks and registers. These were inherited from the previous programme and updated to meet the CBM

programme requirements. However, examination of clinical placement plans, revealed that students were placed in environments not aligned with their clinical objectives, for example, a student studying ante-natal care would be attached to post-natal wards for their work integrated learning.

4.5 Resources, facilities, and services

All institutions had adequate infrastructure for the implementation of the CBM programme. To enhance authenticity in learning midwifery, the NEPI grant acquired simulation laboratories for all the NEIs equipped with state-of-the art birthing simulators. The faculty were trained in the utilization of such simulators. This study, however, revealed limited utilization of such simulation facilities. Programme timetables did not reflect simulation time, and in cases, were it did, it was used in low fidelity, and excluded the birthing simulators.

Training facilities for students, namely the clinics and hospitals did not have adequate resources to support learning while other resources still needed to be aligned to the CBM programme. The professional nurse-midwives working in such units had limited engagement with best practices in midwifery affecting the transfer of knowledge and learning complex for students.

These clinics and hospitals are a mess, there is nothing there for the students. I tell you, we have to make packs for these procedures at school and the students have to travel with them. At hospital Y, there did not have episiotomy scissors. We as the school has to donate to the entire hospital (AF1)

Those nurses are not engaged with latest information when we arrive there, their information is outdated and they are not receptive of us making suggestions, we end up following their old ways because we want their signatures (AS)

4.6 Assessment

All institutions had transformed summative assessment practices to integrate long cases and Objective Structured Clinical Examinations (OSCEs). However, documentation influencing assessment practices and procedures including policies were not adjusted to align with competency-based education. Rules and regulations of the four institutions had been developed but after three years of implementation, where not approved. One teacher expressed that;

I am getting this frustration about documentation and rules and regulations. The CHE when it was here, we were embarrassed to present rules and regulations of 2009, this is almost ten years later. We developed some, submitted for approval and no one cares (AF1)

5. Discussion

Academic programmes are massively complex systems reflecting an interrelation of elements, that synergistically influence and are influenced by each other to inform the pattern and detail of the description of their outcomes. When one element of this complex system changes, for example the curriculum, the entire system is affected and is expected to adjust and accommodate the changes (Lotz-Sisitka et al., 2015). The entire academic programme risks failure if such elements making up its complex system are not adjusted. This failure has direct implications for the intended and desired outputs and outcomes of the academic programme.

NEIs housing midwifery programmes that are undergoing transformation to competency-based models need to re-negotiate with their internal and external partners or stakeholders for the development and implementation of policies and laws that support the transformation of their overall administrative structures and approaches. The fact that the majority of the NEIs in this setting had limited autonomy regarding academic, administrative and financial decision-making hamstrings their ability for planning and accountability related to the implementation of the CBM programme (Botma, 2014). Taber et al., (2010) relate the need for drastic institution-wide policy changes which would enhance accountability and shared decision making for better and sustained outcomes.

In as much as the leadership structures established in these NEIs for the CBM programme were filled with qualifying and experienced individuals, their experience in the content-driven approach was not useful in supporting their positions in the new programme. The incumbents felt ill-prepared for the role and often unsure of what was expected of them. At the same time, their short-lived terms made the commitment to developing the programme and their leadership repertoire trivial. Transformational leadership is defined as a style of leadership where a leader works with subordinates to identify needed change, creating a vision to guide the change through inspiration, and executing the change in tandem with committed members of a group (Schmitt et al., 2016). This form of leadership style is essential to change environments, such as the CBM programme in Lesotho, to ensure bottom-up approaches to change and meeting of the expected programme vision. In achieving transformational leadership in this setting, the leadership position needs to be redefined through structured succession plans, leadership policies and training in the

execution of both managerial and leadership responsibilities. The leaders in the programme must operate within and create an environment amenable to accountability and excellence.

Transforming an academic programme, in this case through the introduction of a CBC to a system predominately content driven, is fraught with myriads of reactions from all stakeholders, especially from teachers expected to enact the curriculum. Such curricular changes require a new set of facilitation skills which may or may not be reachable within their realm. Keesing-Styles et al., (2014) describe the 'ontological uncertainty' among educators in Australia, who had to facilitate a new programme after a curricular reform. The ingrained methods of facilitating learning, arise among the teachers from the deep-seated worldviews of what reality, education, and knowledge are. Transforming curricula will involve an overhaul of the ontological and epistemological perspectives of the teachers who are expected to implement the curriculum. Steinert et al.,(2006) reveals that faculty development is the foundation of transforming the minds of the faculty, but should also be nested within constructivist approaches, that are able to link the previous experience, culture, and values of the faculty with the new ways or approaches to education. The fact that their implementation process was not being monitored and appraised compounded the situation, and promoted wrong and incorrect practices. Rogers (1962) classic theory on the diffusion of innovations, may be applied in such cases. Teachers need guidance and role-modelling of ideal curricular enactment within their reach. The modelling of ideal practice may influence their own understanding of the curricular enactment thereby supporting their own professional growth.

Students are often the centre of curricular innovations. Thomas et al., (2015) defines the curriculum as the total lived experience of students within an academic programme. The NEIs in this study did not meet the majority of the learning needs and curricular expectations of their students. Students were further demotivated by the compulsory programme. Such demotivation influenced their perception and experiences of the overall programme. Everaert et al.,(2017) reported that demotivated students apply minimal effort in their training and are usually associated with low scores and they typically fail the programme.

In some instances, however, the motivation of the students to study and be engaged into a particular programme may be influenced by the enactment of the curriculum and amount of support such students receive during training (Schiefele and Schaffner, 2015). The findings of this study, reveal poor enactment of the curriculum and limited support. This situation could have contributed, to the demotivation among students to study and pursue midwifery. The Ministry of Health, which promulgates laws and policies associated with education models, compulsory midwifery and own clinical practice environments, is challenged to support the implementation of the CBM programme for its overall intended impact on patient populations which may include allowing students a choice to be enrolled in a midwifery programme.

Infrastructural support and its alignment with the curriculum requirements are critical in sustaining the CBM programme. This study revealed that one of the NEI had successfully integrated simulation-based education within its entire CBM programme and such integration was reflected in the students' study guides and

their schedules in the simulation laboratories. Cant and Cooper, (2017) state that simulation-based education improves students' confidence and competence when and if applied appropriately. The promise of simulation-based education was not being realized in the other NEIs and this is attributed to multiple factors including, faculty competence and motivation, human resource numbers and planning. Such investments may soon become obsolete and are at risk of dilapidation. A clinical teaching strategy that includes the development of a vision for clinical teaching, faculty development, simulation-based education and the involvement of clinical preceptors is vital in informing and influencing the trajectory of clinical teaching in the kingdom.

Determining competence in a competency-based education model is a result of constant intimate direct observation of performance enclosed by immediate feedback on the students (Hawkins et al., 2015). Assessment of students within the CBC should embody the criteria for good assessment (Norcini et al., 2011) and programmatic assessment approaches (Schuwirth and van der Vleuten, 2018). In as much as policy transformation on the assessments seemed to be apparent in some of the NEIs, the assessment practices seemed to be poor. The impact of poor assessment practices threatens the credibility of the graduates of these programmes, and their ability to meet the overall midwifery competencies as described by the curriculum.

Transformative education involves the breaking of current systems of education and replacing them with new ones that are hopefully better. The literature on transformative education highlights that key tenets of a programme need to be in

place before a successful transformation can occur, otherwise the education system can take a different trajectory than intended. One would argue about the ethics surrounding the implementation of botched transformative education programmes on students, especially when such programmes are not tried and tested or piloted elsewhere. On the other hand, Rowe and Oltmann, (2016) argues that education programmes should be perceived from an constructivist lens, which supports that such programmes are entirely experiments in their own nature. These experiments are context dependent and their intended outcomes cannot be guaranteed. It is evident from this data that the implementation of the CBM programme was not as expected. Challenges that arise from unsatisfactory implementation may influence the overall ability of graduates to influence their practice and impact on the national maternal and neonatal mortality indicators.

6. Conclusions

The purpose of this article was to describe a gap analysis done on stakeholders engaged in the implementation of a CBM programme in Lesotho, three years after its nationwide implementation. The findings of this study reflect a business as usual approach in CBM programmes, with minimal adaptation of the systems that supported the previous content-driven programme to meet the requirements of the new programme. The legacies of the previous programme infiltrated into the CBM programme negatively and were influenced by various contextually defined factors. The teachers, supervisors, and students experienced poor support and monitoring during the implementation process. This poorly managed curricular change process may have dire consequences on the students, institutions and the patient populations.

Advocates for curricular change in low and middle-income countries should be aware of essential structural and operational requirements needed for a nationwide curriculum change processes. Such structural and operational adjustments may include;

- Re-negotiation with internal and external partners regarding the requirements and expectation of the new programme;
- Development of new policies and laws that support the transformation of administrative structures to include accountability and shared decision making;
- Integration of transformational leadership that is driven by excellence;
- Faculty development which is nested in constructivism, allowing for faculty to link previous experience, culture, and value with expectations of the new programme;
- Role modeling ideal curricular enactment;
- Engaging multiple stakeholders to motivate students; and
- The development of a clinical teaching strategy that is aligned with the requirements of the new programme.

Further research in this setting should investigate contextually relevant strategies and frameworks that can be developed and used to support the implementation of such nation-wide curricular innovations.

The CBM programme is in place in Lesotho, and NEIs need to reflect on their implementation and engage in structural and operational transformations, before

superficial evaluations may dismiss it as a failure. The words of Kelly A. Morgan (2009) come to mind:

"Changes are inevitable and not always controllable. What can be controlled is how you manage, react to and work through the change process."

Reference

Anakin, M., Spronken-Smith, R., Healey, M., Vajoczki, S., 2018. The contextual nature of university-wide curriculum change. Int. J. Acad. Dev. 23, 206–218.

Ash, S., Palermo, C., Gallegos, D., 2018. The contested space: The impact of competency-based education and accreditation on dietetic practice in Australia. Nutr. Diet.

Barsuk, J.H., Cohen, E.R., Vozenilek, J.A., O'Connor, L.M., McGaghie, W.C., Wayne, D.B., 2012. Simulation-Based Education with Mastery Learning Improves Paracentesis Skills. J. Grad. Med. Educ. 4, 23–27.

Biggs, J., 1996. Enhancing teaching through constructive alignment. Higher Educ. 32,3, 347-364.

Botma, Y., 2014. How a monster became a princess: curriculum development: part 1 : contemporary issues in nursing. South Afr. J. High. Educ. 28, 1876–1893.

Botma, Y, 2014. Implications of accreditation criteria when transforming a traditional nursing curriculum to a competency-based curriculum. Int. J. Afr. Nurs. Sci. 1, 23–28.

Botma, Y., Nyoni, C., 2015. What went wrong? A critical reflection on educator midwives' inability to transfer education knowledge. J. Nurs. Educ. Pract. 5, 1.

Bowen, G.A., 2009. Document Analysis as a Qualitative Research Method. Qual. Res. J. 9, 27–40.

Cant, R.P., Cooper, S.J., 2017. Use of simulation-based learning in undergraduate nurse education: An umbrella systematic review. Nurse Educ. Today 49, 63–71.

Creswell, J.W., 2013. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. SAGE Publications.

Everaert, P., Opdecam, E., Maussen, S., 2017. The relationship between motivation, learning approaches, academic performance and time spent. Account. Educ. 26, 78–107.

Fernandez, N., Dory, V., Ste-Marie, L.-G., Chaput, M., Charlin, B., Boucher, A., 2013 Varying conceptions of competence: an analysis of how health sciences educators define competence. Med. Educ. 46, 357–365.

Frank, J.R., Snell, L., Englander, R., Holmboe, E.S. 2017, Collaborators, on behalf of the I. Implementing competency-based medical education: Moving forward. Med. Teach. 39, 568–573.

Harden, R.M., 2001. AMEE Guide No. 21: Curriculum mapping: a tool for transparent and authentic teaching and learning. Med. Teach. 23, 123–137.

Hawkins, R.E., Welcher, C.M., Holmboe, E.S., Kirk, L.M., Norcini, J.J., Simons, K.B., Skochelak, S.E., 2015 Implementation of competency-based medical education: are we addressing the concerns and challenges? Med. Educ. 49, 1086–1102.

ICM, 2013. Global standards for Midwifery education (2010) Amended 2013. Retrieved from http://www.internationalmidwives.org/what-we-do/education-coredocuments/global-standards-education/ (accessed 11.14.17).

ICM, 2012. Model curriculum outline for professional midwifery education. URL: https//www.internationalmidwives.org (Accessed 4 .10.18)

Keesing-Styles, L., Nash, S., Ayres, R., 2014. Managing curriculum change and 'ontological uncertainty' in tertiary education. High. Educ. Res. Dev. 33, 496–509.

Kerdijk, W., Snoek, J.W., van Hell, E.A., Cohen-Schotanus, J., 2013. The effect of implementing undergraduate competency-based medical education on students' knowledge acquisition, clinical performance and perceived preparedness for practice: a comparative study. BMC Med. Educ. 13, 76.

Leung, L., 2015. Validity, reliability, and generalizability in qualitative research. J. Fam. Med. Prim. Care 4, 324–327.

Lotz-Sisitka, H., Wals, A.E., Kronlid, D., McGarry, D., 2015. Transformative, transgressive social learning: rethinking higher education pedagogy in times of systemic global dysfunction. Curr. Opin. Environ. Sustain., Sustainability science 16, 73–80.

MacBlain, S., 2018. Learning Theories for Early Years Practice. SAGE.

Ministry of Health [Lesotho], 2012. The nursing and midwifery strategic plan 2010-2012. Maseru

Norcini, J., Anderson, B., Bollela, V., Burch, V., Costa, M.J., Duvivier, R., Galbraith, R., Hays, R., Kent, A., Perrott, V., Roberts, T., 2011. Criteria for good assessment: Consensus statement and recommendations from the Ottawa 2010 Conference. Med. Teach. 33, 206–214.

Nyoni, C.N., Barnard, A.J., 2016. Professional nurses' perception of their clinical teaching role at a rural hospital in Lesotho. Afr. J. Health Prof. Educ. 8, 166–168.

Nyoni, C.N., Botma, Y., 2018. Sustaining a newly implemented competence-based midwifery programme in Lesotho: Emerging issues. Midwifery 59, 115–117.

Nyoni, C.N., Botma, Y., 2017. Aligning summative clinical examination with competence-based curriculum: Midwifery educator's experiences in Lesotho. Int. J. Afr. Nurs. Sci. 7, 11–17.

Rogers, E.M., 1962. Diffusion of innovations. Free Press of Glencoe, New York.

Rowe, M., Oltmann, C., 2016. Randomised controlled trials in educational research: Ontological and epistemological limitations. Afr. J. Health Prof. Educ. 8, 6–8.

Saldana, J., 2009. The coding manual for qualitative reseachers. SAGE Publications, London.

Schiefele, U., Schaffner, E., 2015. Teacher interests, mastery goals, and self-efficacy as predictors of instructional practices and student motivation. Contemp. Educ. Psychol. 42, 159–171.

Schmitt, A., Hartog, D.N.D., Belschak, F.D., 2016. Transformational leadership and proactive work behaviour: A moderated mediation model including work engagement and job strain. J. Occup. Organ. Psychol. 89, 588–610.

Schuwirth, L.W.T., van der Vleuten, C.P.M., 2018. How 'Testing' Has Become 'Programmatic Assessment for Learning.' Health Prof. Educ.

Steinert, Y., Mann, K., Centeno, A., Dolmans, D., Spencer, J., Gelula, M., Prideaux, D., 2006. A systematic review of faculty development initiatives designed to improve teaching effectiveness in medical education: BEME Guide No. 8. Med. Teach. 28, 497–526.

Taber, S., Frank, J.R., Harris, K.A., Glasgow, N.J., Lobst, W., Talbot, M., Collaborators, F.T.I.C., 2010. Identifying the policy implications of competency-based education. Med. Teach. 32, 687–691.

Thomas, P.A., Kern, D.E., Hughes, M.T., Chen, B.Y., 2015. Curriculum Development for Medical Education: A Six-Step Approach. JHU Press.

UNFPA, 2014. State of the World's Midwifery 2014. URL:https://www.unfpa.org (accessed 11.14.17).

Woods, A., 2015. Exploring Unplanned Curriculum Drift. J. Nurs. Educ. 54, 641–644. https://doi.org/10.3928/01484834-20151016-05

CONFLICT OF INTEREST

1. CONFLICT OF INTEREST

None

2. FUNDING SOURCES

Part of the study was funded by the Sigma Theta- Tau International (STTI) Alpha Eta collaborative grant

3. ETHICAL APPROVAL

The study was approved by the Health Sciences Research Ethics Committee University of the Free State (HSREC 22/2017) and the Institutional Research and Ethics Committee of the Ministry of Health in Lesotho (ID 25-2017).

4. ACKNOWLEDGEMENT

The authors acknowledge Dr. R. Albertyn for critically reading the manuscript and Ms. J Viljoen for assistance with technical editing. Mr. Smith Shanyurai is thanked for his role as the research assistant, supporting the data collection exercise.

Table 1: Comparing the old and the new midwifery programme

CURRICULUM ELEMENTS	PREVIOUS MIDWIFERY PROGRAMME	COMPETENCY-BASED MIDWIFERY PROGRAMME
LEARNING OUTCOMES	- No specified learning outcomes - Behaviourist approach to learning	- Competences derived from the ICM (2013), stakeholder consensus meeting - A constructivist approach to learning
EDUCATION STRATEGIES	- Teacher centred, lectured dominating mode of instruction - Teachers notes	- Student centred, active learning approaches and self-directed learning - Activities presented in workbooks - Multiple sources of information
EDUCATION ENVIRONMENT	- Classroom, midwifery departments, and community	- Classroom, simulation laboratory, midwifery departments in hospitals, primary healthcare setting, and community
ASSESSMENT	- Summative assessments through paper-based examination - Demonstration of	- Integrated assessments of competence - Observation of performance in OSCE

	competence in two procedures	- Feedback
CONTENT	- National trends and the textbook	- Informed by the ICM standards, epidemiology, and national trends, Evidence-Based practice (EBP)
LEARNING OPPORTUNITIES	- Hospital-based learning experiences	- Experiential learning in communities, PHC, & hospitals

5 A framework for implementing and sustaining a curricular innovation in a higher education midwifery programme

“In every community there is work to be done.

In every nation, there are wounds to heal.

In every heart there is the power to do it.”

—Marianne Williamson

CHAPTER 5

A FRAMEWORK FOR IMPLEMENTING AND SUSTAINING A CURRICULAR INNOVATION IN A HIGHER EDUCATION MIDWIFERY PROGRAMME

5.1 INTRODUCTION

This chapter presents the framework to implement and sustain a curricular innovation in a higher education midwifery programme. This framework is an amalgamation of the previous studies and was further validated by the implementers of the CBC.

5.2 MANUSCRIPT DETAILS

Title	**A framework for implementing and sustaining a curricular innovation in a higher education midwifery programme**
Author	**Nyoni, Champion N.** Botma, Yvonne
Journal	Africa Journal of Health Professions Education (AJHPE)
Journal details	Double blinded Listed in accredited list of journals by the DoHET [South Africa]
Status	Under review

5.2.1 JOURNAL INFORMATION

The AJHPE is a journal for health professions educators. It carries research articles, short scientific reports, letters, editorials, education practice, personal opinion and other topics related to the education of health care professionals within the African continent (AJHPE, 2018: online).

5.2.2 CONTRIBUTION RECORD

The candidate and the research promoter developed the framework. The candidate further validated the framework, through a workshop with primary implementers in Lesotho and drafted the manuscript. The promoter critically read the manuscript.

5.2.3 ASSOCIATED ADDENDA

Addendum P: Author guidelines for the African Journal of Health Professions Education.

5.3 MANUSCRIPT THREE

A FRAMEWORK FOR IMPLEMENTING AND SUSTAINING A CURRICULAR INNOVATION IN A HIGHER EDUCATION MIDWIFERY PROGRAMME

ABSTRACT

Background: HEIs in low-resource settings struggle with implementing curricular innovations, which threaten the sustainability of their academic programmes. A competency-based curriculum underpinned by a constructivist philosophy was developed for a one-year post-basic midwifery programme. Disparities in the enactment of the described curriculum within and across institutions were observed within two years of nation-wide implementation. Such disparities threatened the sustainability of the entire competency-based midwifery programme.

Purpose: This study presented a framework developed for implementing and sustaining a curricular innovation in a higher education midwifery programme

Methods: Multiple methods research guided the development of the framework through a multi-phased approach. The initial phase synthesised the literature on strategies to sustain curricular innovations in higher education. The second phase described the implementation of the new curriculum through engaging with primary stakeholders. In the final phase, findings of the preceding phases were used to develop a framework, which was validated by primary implementers of the new curriculum.

Results: The results report on the elements of the framework for implementing and sustaining a curricular innovation in a higher education midwifery programme.

Conclusion: Designing a strategy for higher education institutions for implementing and sustaining curricular innovations should be grounded on an interplay of empirical evidence and contextual realities. Higher education institutions should identify challenges related to curriculum

implementation, and recommend tailor-made approaches that are based on evidence. Primary implementers of the curriculum are fundamental in enhancing the validity and feasibility of such a strategy within their setting.

Key words: Higher education; competency-based curriculum; midwifery

A FRAMEWORK FOR IMPLEMENTING AND SUSTAINING A CURRICULAR INNOVATION IN A HIGHER EDUCATION MIDWIFERY PROGRAMME

Introduction

Higher education institutions (HEIs) responsible for training midwives need to transform their education programmes to align with the changing educational landscape.[1,2] Such transformations should focus on the development of competent midwives who have a positive influence on maternal and neonatal mortality indicators and who should be driven by a cutting-edge curriculum.

The curriculum is seen as a multi-layered phenomenon encompassing the espoused curriculum, the enacted curriculum and the experienced curriculum.[3] Changes in the needs of society influence HEIs to innovate their espoused curriculum[4,5] through the introduction of new learning outcomes, new teaching and assessment methods, and even different pedagogical values.[6] Failure to promote the implementation of such curricular innovations may result in curricular drift, which Woods [5] describes as the difference between the espoused curriculum and the enacted curriculum. The outcome of curriculum drift may be dire, as envisaged outcomes in the espoused curriculum, such as the development of competent midwives, may not be realised.

The context of the study reported in this article was a competency-based curriculum (CBC) for a one-year midwifery programme that was developed and implemented for the first time in 2014 in the Kingdom of Lesotho. The aim of the CBC was to produce midwives who have a positive influence on the perennially high maternal and neonatal mortality indicators. The CBC replaced a teacher-centred content-driven hospital-based curriculum, which had been in place for many years. The new curriculum was underpinned by constructivism as a learning theory[7] and fused with other education principles, such as scaffolding,[8] authenticity and constructive alignment.[9] It was also aligned with the national policy of primary healthcare, which is the

pregnant woman's first point of contact with healthcare services. Implementing this CBC resulted in a need for a different set of administrative, teaching and learning skills from its primary stakeholders. These skills included the development of student-centred learning material, new assessment approaches, integration of evidence-based practice, simulation-based education, and placement of students in the community.

However, within two years of a nation-wide implementation, the authors became aware of disparities in the enactment of the CBC within and among the nursing education institutions (NEIs), which threatened the sustainability of the entire competency-based midwifery programme. These disparities included the adoption of previous teaching approaches, assessment practices not aligned with the new curriculum, and students verbalising a lack of support during learning. These were evidenced in minutes from meetings, interactions with the primary stakeholders and the results of programme accreditation from a local Council on Higher Education (CHE) in Lesotho. There was thus a need to develop a strategy to address these threats. This article reports on a study, which developed a framework to implement and sustain a curricular innovation in the midwifery programme in higher education. We argue here that insights into the development of a sustainable strategy for curricular innovation could guide higher education midwifery programme renewal for more effective training.

Methods

The framework was developed through a multiple methods approach underpinned by the theory of change logic model.[10] Three separate but interrelated studies were carried out in the development of this framework. The initial study synthesised strategies used to sustain curricular innovations in higher education between 1996 and 2016 through an integrative review. The findings of this phase have been reported by Nyoni and Botma. [11]

The second study described the implementation of the competency-based midwifery programme in Lesotho through a gap analysis. Primary stakeholders engaged in the implementation of the CBC, namely students (n=48), educators (n=11) and administrators (n=16) from all the NEIs (n=5), were included in the study. Data were collected through individual interviews and focus groups. In addition to the narrative data, documents used in the programme were also captured. Analysis of the data took place by way of inductive reasoning against the International Confederation of Midwives (ICM) global standards for midwifery education.[1] The

findings from this study revealed the needs of the primary stakeholders in relation to implementing the CBC in their institutions, and these needs were presented per standard of the ICM global standards for midwifery education (see Nyoni & Botma).[12]

The final study was articulated in two sequential strands. The first strand involved the researchers using the theory of change logic model to integrate the results of the first two studies to develop a framework. The second strand was a validation exercise of the developed framework by primary implementers (n=13) of the CBC in midwifery from all the NEIs in Lesotho. These primary implementers of the curriculum were invited to a one-day validation session led by the first author. During the session, the purpose of the study was presented, including approaches on validating the framework. The primary stakeholders discussed the framework based on its specific headings in small groups. Using a round-robin, each group presented the outcomes of their discussion, which were either confirmed or rejected by the entire group. Consensus was reached based on feasibility and reasoning.

Ethical consideration

Ethical clearance for this study was granted by both the Health Sciences Research Ethics Committee of the University of the Free State (HSREC 22/2017) and the Institutional Research and Ethics Committee of the Ministry of Health in Lesotho (ID 25/2017). The framework for ethical educational research by Cilliers and Burgess [(13)] underpinned the development and execution of the current study. The NEIs granted the researchers access to their institutions, and all individuals engaged in this study provided informed consent.

The theoretical underpinning of the framework

Logic models allow for the development of programmes, in this case, a framework, that links intentions or objectives of the framework with the intended outputs, outcomes and foreseeable impact inclusive of relevant processes.[(10)] The Kellogg foundation explains that logic models allow for a visual presentation of how a particular programme or framework would work to reach its intended outcomes.

There are various types of logic models, but this study was nested on the theory of change logic model. The theory of change logic model allowed the researchers to articulate clearly the problems related to implementing the CBC in the midwifery programme in Lesotho, to describe the scope of needs and assets of the community of stakeholders implementing the CBC, and to

acknowledge the factors that may influence the implementation of the proposed framework. The theory of change logic model allowed for the investigation of best practices as plausible solutions to the identified problems, including a statement of assumptions regarding why the selected strategies could work. The intended outcome of the framework is also described.

Methodological integrity

The validation exercise with the primary implementers of the CBC from all NEIs in Lesotho enhanced the internal validity of the framework, while the integration of evidence from the literature strengthened its content validity. The nature of this developmental process was embedded in contextually based challenges, which limited the transferability of such a framework to any other setting although an audit trail on the development of the framework may support other HEIs implementing a CBC in midwifery in sustaining their curriculum change process.

Results

A framework to implement and sustain a curricular innovation in a midwifery programme in Lesotho is presented in Figure 1, and represents the results of this study. The description of the framework includes the problem or issue, the community needs and assets, strategies, influencing factors, assumptions and desired results.

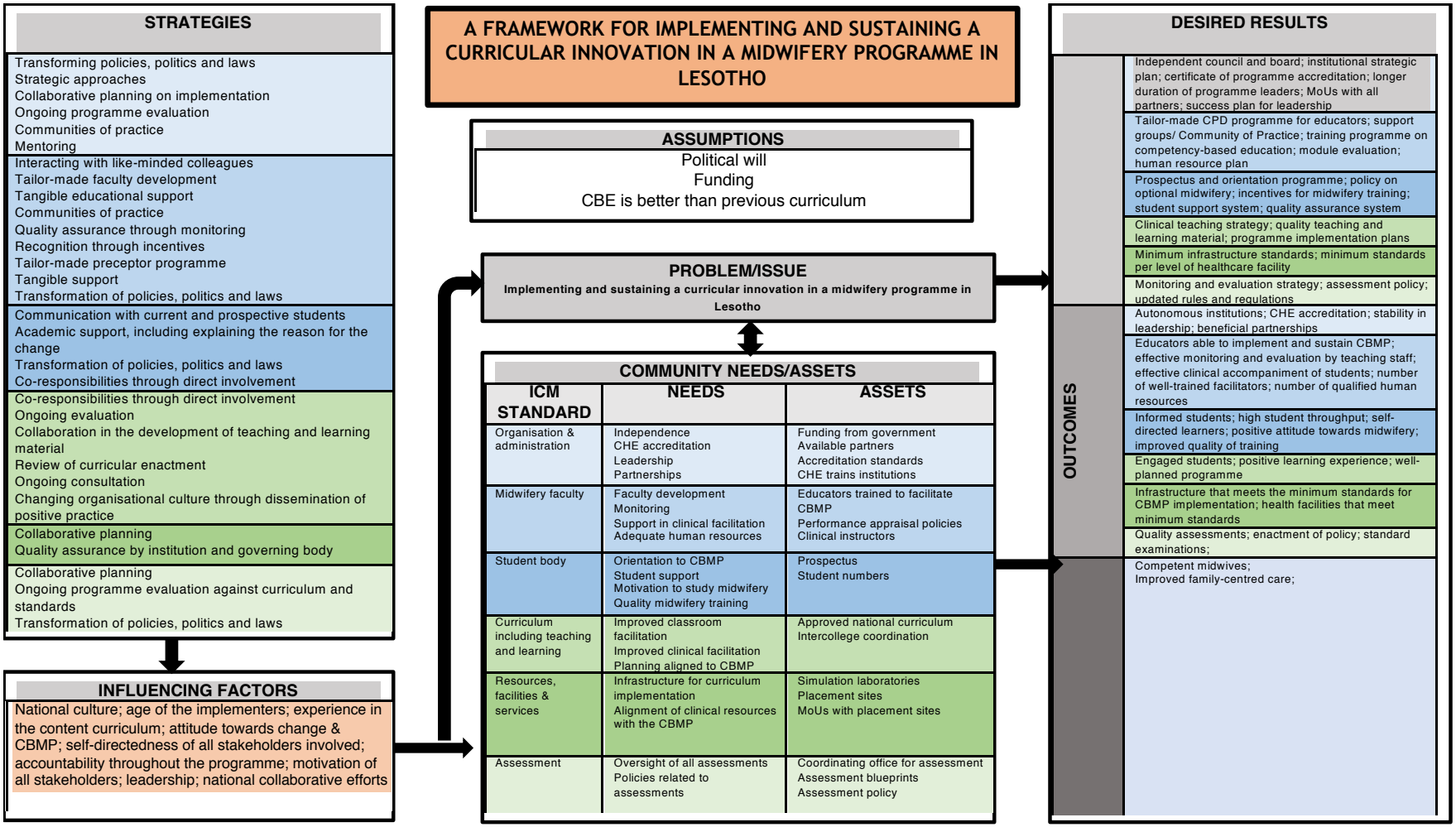


Figure 1: Framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho

The problem or issue

The validation exercise revealed that NEIs struggled with implementing the curricular innovation of the CBC, which threatened the sustainability of the entire competency-based midwifery programme (CBMP). This problem agreed with the results of programme accreditation from the local higher education regulatory body as only one institution was fully accredited.

Community needs and assets

The primary implementers validated the suggested community needs and were able to add other assets available in their NEIs. The community needs and assets were presented in accordance with the ICM global standards for midwifery education.[1] These standards were: organisation and administration, midwifery faculty, student body, the curriculum, including teaching and learning, resources and assessment.

With regard to organisation and administration, primary implementers validated the need for independence of institutions from hospital boards, full accreditation of their programmes by the CHE, leadership in their programmes, and strengthening and redesigning their partnerships with stakeholders who have a direct influence on the midwifery programme, such as government. The primary implementers acknowledged that the funding from government, availability of education partners, accreditation standards and the support from the CHE were assets within the NEIs.

On the standard of midwifery faculty, the primary implementers agreed that, at the time of this research, there was a need for development of all educators in the programme in relation to implementing a CBC. The need for mentoring of educators, support in clinical facilitation and adequate human resources was also supported by the primary implementers. They further acknowledged the presence of educators with expertise in the CBC who could support others. Performance appraisal policies were also realised as an asset while some institutions had full-time clinical instructors for midwifery students, which would support the implementation of the CBC when mentored.

Students experience the curriculum and are expected to exhibit curriculum goals at the end of the education. In this standard, the primary implementers acknowledged the need for orientation

programmes for students into the CBC, the need for student support, including strategies to motivate them into studying midwifery, and the need to enhance the quality of midwifery training. The primary implementers reflected that institutions had prospectuses and were guaranteed of students every year.

With regard to the standard of the curriculum, which included teaching and learning, primary stakeholders validated the need for improved classroom facilitation, improved clinical facilitation, and programme planning to align with the CBC. An approved CBC and platform for NEIs to meet and discuss the curriculum were reflected as assets.

The infrastructure for curriculum implementation and the need to align the clinical teaching resources to the CBC were validated by the implementers as needs with regard to the standard of resources and infrastructure. The primary implementers acknowledged the support from the Nursing Education Partnership Initiative (NEPI), which supported all NEIs with simulation laboratories and human birthing simulators. The primary stakeholders also reflected that they had clinical platforms for training students, however a few institutions had any memoranda of understanding (MoU) with such clinical platforms.

Assessment of learner competence in these NEIs lacked oversight as there were no assessment policies in place. The primary stakeholders explained that the presence of a coordinating office for summative assessments, including assessment blueprints, was an asset within these NEIs.

Strategies

The primary stakeholders validated all the strategies synthesised from the integrative review. [11] These strategies were presented against the specific standards as stipulated in the ICM global standards for midwifery education[1] based on the needs and assets of the NEIs. According to the integrative review and validation of the primary stakeholders, the implementation of these strategies was intended to reflect an interaction between the students, the educators, and the administrators within the NEIs in Lesotho.

Influencing factors

The influencing factors determine the utility of the framework. In this framework, the influencing factors were determined by the primary stakeholders in the context. These factors

comprised the culture and the age of the implementers, their experience in the previous content-driven curriculum, and their attitude towards change. The level of self-directedness of all the stakeholders engaged with the programme, including accountability for and of the programme, had to influence the implementation of the framework. The leadership style was also included as influencing factor.

Assumptions

The assumptions in this framework were based on the descriptions by both the authors and primary stakeholders. These assumptions are the political will, funding and the belief that the CBC is better than the previous curriculum.

Desired results

The desired results reflect what is anticipated after implementing this framework. The desired results were presented into three main criteria, namely outputs, outcomes, and impact. These desired results were informed by the intentions of the CBC, including the needs of the NEIs in Lesotho in relation to the competency-based midwifery programme as validated by the primary implementers.

Outputs are the direct products of the activities of this framework. The outputs were presented under each specific standard and aligned with the needs and assets of the NEIs. With regard to the standard of organisation and administration, the outputs are: independent councils and boards, institutional strategic plans, accreditation certificates, longer duration for programme leaders, MoUs with all partners, and succession plans for leadership. In terms of the standard of midwifery faculty, the outputs are: tailor-made Continuing Professional Development (CPD) programmes for educators, a training programme on competency-based education for educators, module evaluation, and a human resource plan. Outputs with regard to the student body are: a comprehensive prospectus and orientation programme for students, a policy on optional midwifery, incentives for midwifery training, a student support system and a quality assurance system.

Outputs with regard to the standard of the curriculum are: a clinical teaching strategy, quality teaching and learning material, and programme implementation plans. Infrastructure-related outputs are minimum criteria and standards for educational institutions and healthcare

facilities. For the assessment standard, outputs were: updated rules and regulations, including a monitoring and evaluation strategy for assessments.

Outcomes included specific changes in the primary stakeholder's behaviour, knowledge, skills, status and level of functioning after interventions prescribed by the framework. From this framework, the desired outcomes were autonomous institutions with both stable leadership and beneficial partnerships. Other desired outcomes were educators who are able to implement a competency-based midwifery programme. As a result, students will be better informed regarding the programme and have a positive attitude towards midwifery as a discipline. With regard to the curriculum, outcomes will be a positive learning experience and quality assessments.

The desired impact will be experienced in the long term and this can even be after 10 years. The effect of implementing this framework will be competent midwives who can provide family-centred care.

Discussion

A variety of factors influence the sustainability of curricular innovations within professional programmes in higher education. The curriculum is the fulcrum of professional programmes and any innovation on the curriculum directly influences all other aspects of the programme. Failure to adjust the various interrelated aspects of a professional programme during the implementation of a curricular innovation may contribute to disparities in curricular enactment setting the stage for curricular drift.[5]

Frameworks based on contextual realities have a significant influence in supporting HEIs in adjusting programme-related aspects for sustained curricular innovations as opposed to frameworks imported from external settings. Implementing a curriculum is largely influenced by contextual factors, which should be paramount in designing strategies used in sustaining professional programmes.[14] Such strategies should be grounded in the experiences and expertise of the primary stakeholders who are able to relive contextual realities through designing feasible solutions. In this study, educators, students and administrators of a CBC in Lesotho provided valuable insight in describing their specific needs regarding the implementation of the CBC, including validating components of the framework. Bottom-up approaches improve acceptance, further increasing the utility of such a framework.[15]

It is essential that frameworks designed to improve curricular innovation implementation within higher education be grounded in both the espoused curricular goals and the standards used in establishing a professional programme. Such approaches allow for HEIs to response to their original reason for curricular change at the same time avoiding superficial evaluations, where curricular innovations may be branded as failure. In the current setting, the CBC document and the ICM global standards for midwifery education[1] underpinned the inquiry and design of the framework for implementing and sustaining a curricular innovation in the midwifery programme.

Conclusion

A variety of factors influence HEIs to introduce curricular innovations in professional programmes, such as midwifery. The implementation of such curricular innovations need to be supported by contemporary frameworks based on contextual realities and experiences of primary stakeholders involved in implementing such curricular innovations. Such approaches bear the potential of increased acceptance by local stakeholders further sustaining the curricular innovation.

Further research in this field should evaluate the effect of implementing such contextually designed frameworks on the primary implementers and population outcomes.

References

1. ICM. The global standards for midwifery education; 2014.http://www.internationalmidwives.org/what-we-do/education-coredocuments/global-standards-education.
2. UNFPA. State of the world's midwifery 2014; 2014. http://www.unfpa.org.
3. Prideaux D. (2003). Curriculum design. BMJ,2003; 326(7383), 268-270.
4. Wilson EA, Rudy D, Elam C, Pfeifle A, Straus R. Preventing curriculum drift: Sustaining change and building upon innovation. Ann Behav Sci Med Educ 2012;18(2):23–6. https://link.springer.com/article/10.1007/BF03355202
5. Woods A. Exploring unplanned curriculum drift. J Nurs Educ 2015;54(11):641–4.
6. Markee N, Managing curricular innovation. Cambridge: Cambridge University Press; 1997.
7. Amineh R. J., & Asl H. Review of Constructivism and Social Constructivism. J Soci Sci, Lit & Lang 2015;, 1(1), 9-16.
8. Brunner J. Vygotsky: a historical and conceptual perpective . In V. Weitsch, Culture, Communication & Cognition. Vygotskyan perspective 1985. Cambridge: Cambridge University Press.
9. Biggs J. Enhancing teaching through constructive alignment . Higher Education 1996, 32(3), 347-364.
10. W.K. Kellogg Foundation. Logic Model Development Guide; 2004 https://www.wkkf.org:443/resource-directory/resource/2006/02/wk-kellogg-foundation-logic-model-development-guide
11. Nyoni C, & Botma Y. Strategies to sustain curricular innovations in higher education: an integrative review. South African Association of Health Educationalist 2017. Potchefstroom, South Africa.
12. Nyoni C, & Botma Y. Implementing a competency-based midwifery programme in Lesotho: A gap analysis. University of the Free State, Faculty of Health Sciences Research forum, 2018. Bloemfontein, South Africa.

13. Burgess, T., & Cilliers, F. A framework for ethical educational research: principles and application. 2016.http://www.healthedu.uct.ac.za.
14. Reis S. Curriculum reform: Why? What? How? and how will we know it works? Isr J Health Policy Res 2018;7(1). https://doi.org/10.1186/s13584-018-0221-4.
15. Collins SE, Clifasefi SL, Stanton J et al. Community-based participatory research (CBPR): Towards equitable involvement of community in psychology research. Am Psychol. 2018; Advance online publication. http://dx.doi.org/10.1037/amp0000167

6. Conclusion, discussion and recommendations

African scientists bear the potential of improving the conditions in Africa – provided they have necessary skills, training and resources.

World Economic Forum

(2015: online)

CHAPTER SIX

CONCLUSION, RECOMMENDATIONS AND LIMITATIONS OF THE STUDY

1.1 INTRODUCTION

An in-depth study was done with the purpose of developing a framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho. This chapter provides a brief overview of the study, including comments and some thoughts on the final findings of the study.

The chapter will commence with an overview of the study, followed by factual findings on the specific objectives of the study, then followed by conceptual findings, including conclusions drawn, recommendations from the study, the contribution to knowledge, limitations of the study, a personal reflection and a concluding remark.

1.2 OVERVIEW OF THE STUDY

This study was executed and completed based on one research question and five specific objectives. The findings based on the research objectives underpinned the development of the framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho, which answered the research question for this study.

The initial chapter of this thesis outlined the entire study, inclusive of the research question and the five research objectives, which underpinned the study. Due to the structure of this thesis, this first chapter already provided in-depth the appropriate research design and methods that was used to answer the research question.

The research question of this study was –

> *How can curricular innovation in a midwifery programme in Lesotho be implemented and sustained?*

This main research question was articulated through five main objectives, namely to:

a) explore and describe strategies used to sustain curricular innovations in higher education through an integrative review (Phase 1);

b) describe factors influencing the implementation of a curricular innovation in the midwifery programme in Lesotho (Phase 2);
c) describe the implementation of the competency-based midwifery programme in Lesotho, using the ICM global standards for midwifery education (Phase 2);
d) develop a framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho (Phase 3); and
e) validate the developed framework (Phase 3).

The next discussion will present the factual findings per research objective.

1.3 FACTUAL FINDINGS

The following section presents factual findings of the study per research objective.

1.3.1 EXPLORE AND DESCRIBE STRATEGIES USED TO SUSTAIN CURRICULAR INNOVATIONS IN HIGHER EDUCATION THROUGH AN INTEGRATIVE REVIEW

An integrative review articulated through a framework by Whittemore and Knafl (2005) was used to review evidence reflecting strategies used to sustain curricular innovations in higher education between 1996 and 2016. The strategies were synthesised and displayed based on the level of curricular innovation enactment and also tailor-made for specific stakeholders in curricular enactment.

The review revealed five main strategies used to sustain curricular innovation in higher education, specific for educators at classroom or micro-level. These strategies were:

- quality assurance through monitoring and evaluation, and incentives for good performance aligned to the curriculum innovation;
- educator interactions with like-minded colleagues;
- educator engagement with the curricular innovation;
- tailor-made continuous educator development; and
- tangible educator support by means of grants, well-developed materials; and
- evidence-based practice (EBP) guidelines (see 2.3 in Chapter 2).

Three strategies were used to sustain curricular innovation among students at classroom level within higher education, namely –

- academic support to students regarding the reasons for the change, expectations and their responsibilities;
- communication with current and prospective students; and
- co-responsibility through direct involvement in the implementation process (see 2.3 in Chapter 2)

Seven strategies were identified for administrators to sustain curricular innovations at the programme level, namely:

- champions through leadership and commitment;
- strategic approaches;
- inclusion in the development of the curricular innovation;
- collaborative planning for implementation;
- ongoing consultation with educators and students;
- ongoing programme evaluation against standards and the curriculum; and
- changing the organisational culture by disseminating positive outcomes and offering support (see 2.3 in Chapter 2)

Five strategies were described for educators at the programme level, namely:

- development of educators through communities of practice or working groups;
- mentoring;
- quality assurance by institutional and governing processes, collaboration in the development of course material and curricular enactment; and
- recognition with incentives (see 2.3 Chapter 2)

Four strategies were used to sustain curricular innovations in higher education by administrators at the institutional level, namely –

- supportive leadership;
- transforming policies, laws and politics;
- funding for the curricular innovation; and
- strategic partnerships (see 2.3 Chapter 2)

6.3.2 FACTORS INFLUENCING THE IMPLEMENTATION OF A CURRICULAR INNOVATION IN THE MIDWIFERY PROGRAMME IN LESOTHO

Primary stakeholders in the implementation of the competency-based midwifery programme including document analysis were engaged through qualitative research to describe factors influencing the implementation of the curricular innovation in the midwifery programme in Lesotho. Four themes emerged, namely:

- accountability within and for the programme;
- management of the programme;
- educators' capacity to implement the CBC; and
- students' response to the CBC (See 3.3 in Chapter 3)

6.3.3 IMPLEMENTATION OF THE COMPETENCY-BASED MIDWIFERY PROGRAMME IN LESOTHO THROUGH THE ICM GLOBAL STANDARDS FOR MIDWIFERY EDUCATION

Through a gap analysis based on the ICM standards for midwifery education, a variety of needs or gaps related to the implementation of the competency-based midwifery programme were identified within the NEIs in Lesotho. These were presented per standard of the ICM standards for midwifery education (ICM, 2013). The need for independence in all the NEIs, including accreditation of the midwifery programme by the CHE, a stable transformative leadership and improved partnerships were realised as gaps in the standard of organisation and administration (see 4.1 in chapter 4).

With respect to the standard in the midwifery faculty, the gap analysis revealed a need for faculty development; mentoring; support in clinical facilitation; and the need for adequate human resources in both the clinical area and within the classroom (see section 4.2). On the standard specific to the student body, there was a need for orientation of the students to the CBMP, improved student support, need for motivation to study midwifery and the need for quality midwifery training (see 4.3 in chapter 4).

The study revealed the need for improved classroom facilitation, improved clinical facilitation and the need for planning to be aligned with the CBMP under the standard of the curriculum, including teaching and learning (see 4.4 in chapter 4). With regard to the standard of resources, facilities and service, there was a need for improvement in the

infrastructure for curriculum implementation and the need for alignment of clinical resources with the CMBP (see 4.5 in chapter 4).

With regard to assessment, there was a gap related to assessment oversight and policies that support good assessment practice (see 4.6 in Chapter 4).

6.3.4 FRAMEWORK FOR IMPLEMENTING AND SUSTAINING A CURRICULAR INNOVATION IN A MIDWIFERY PROGRAMME IN LESOTHO

A framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho was developed (see 5.3 in Chapter 5).

6.3.5 VALIDATING THE DEVELOPED FRAMEWORK

The primary implementers of the CBMP in Lesotho validated the developed framework (see 5.3 in Chapter 5).

The next discussion presents the conceptual findings of this study.

6.4 CONCEPTUAL FINDINGS

Table 6.1 presents the conceptual findings of the study, per research objective.

Table 6.1: Conceptual findings of the study

RESEARCH OBJECTIVES	PHASE OF THE STUDY	CONCEPTUAL FINDING
a) Describe strategies used to sustain curricular innovations in higher education through an integrative review.	1	❖ Strategies used to sustain curricular innovations in higher education are tailor-made for specific stakeholders engaged in the implementation of the curricular innovation namely students, educators and administrators. ❖ Strategies used to sustain curricular innovations in higher education are tailor-made for the specific level of the implementation of the said curricular innovation. These levels are the micro-level or the classroom, the meso-level or department or programme and the macro-level, which is at the institutional level.
b) Describe factors influencing the implementation of the curricular innovation in the midwifery programme in Lesotho.	2	❖ NEIs had limited monitoring and accountability within and for the programme. ❖ Professional regulatory councils had minimal influence in the implementation of the competency-based midwifery programme. ❖ Educators, including the newly appointed ones, where not oriented and supported during the implementation of the curricular innovation, in most institutions.
c) Describe the implementation of the curricular innovation in the midwifery programme in Lesotho, using the (ICM) global standards for pre-service midwifery education.	2	❖ There was a gap between the desired standards set by the ICM global standards for pre-service midwifery education and the CBC, when compared to the implementation of the competency-based midwifery programme by NEIs in Lesotho. ❖ Limited to no operational and structural adjustments of the NEIs and programme influenced and contributed to the gap between the desired standards and the actual programme enactment.

		❖ The NEIs in Lesotho had specific operational and structural requirements that needed to be addressed to enhance their ability to implement and sustain the curricular innovation within the midwifery programme.
d) Develop a framework to implement and sustain a curricular innovation in a midwifery programme in Lesotho.	3	❖ A framework to implement and sustain a curricular innovation in a midwifery programme was developed underpinned by the theory-of-change logic model, splicing empirical and theoretical data. ❖ The developed framework linked the problem related to sustaining and implementing the curricular innovation, the needs of the community, influencing factors, assumptions, desired goals and tailor-made strategies. ❖ The framework to implement and sustain the implementation of a curricular innovation in a midwifery programme in Lesotho was developed based on evidence and contextual realities within the midwifery programme in Lesotho.
e) Validate the developed framework.	3	❖ Sustainable strategies based on the contextual realities validated by a community of primary implementers bears the potential of enhancing the implementation and sustainability of the midwifery programme in higher education.

6.5 CONCLUSIONS FROM THIS STUDY

This study was carried out in support of the development and subsequent nation-wide implementation of a curricular innovation in the midwifery programme in Lesotho. The successful introduction of the CBC was based on the application of a new or different set of skills, resources and approaches from the primary and secondary stakeholders within the midwifery programme. The premise of this study was based on the recognition and acknowledgement of a gap related to a strategy or framework to support the successful implementation the new curriculum in the midwifery programme in Lesotho. The absence of a framework for implementing and sustaining the curricular innovation threatened the sustainability of the entire competency-based midwifery programme in NEIs in Lesotho.

To bridge this gap, the study sought to develop a framework for implementing and sustaining the curricular innovation in a midwifery programme in Lesotho. A combination of methods was used to generate empirical and theoretical data, underpinned by the theory of change logic model. The findings of the various phases of the study were interpreted through a constructivist lens, acknowledging the positionality of the researcher, the position of the researched and the contextual realities of the academic and clinical landscapes in Lesotho.

This study provided a snap shot of the critical challenges that low- and middle-income countries, like Lesotho, face in implementing curricular innovations, and changes accompanied with such innovations. Such contextual challenges, when not described, limit the reliability of the measure of the impact of curriculum change on the development of healthcare workers such as midwives. The utility of a curricular innovation, like the introduction of competency-based education, may not be realised as contextual realities may stifle its adoption, implementation and further sustainability (Hawking et al., 2015).

Literature reflects that curricular drift, which can be summarised as the difference between the espoused curriculum and the enacted curriculum is eminent within every curriculum and may even be worse in a curriculum change process (Woods, 2015). Such curricular drift should be investigated, described and avoided, as it may have dire consequences for the outcomes of the curriculum on programme graduates. An example

would be the case in Lesotho, where graduates are expected to provide family centred care and have a positive influence on the maternal and neonatal indicators.

Educators are the face of the curricular innovation, as they embody the desired attributes within the espoused curriculum. It is critical that educators have sufficient knowledge of their own discipline and also of contemporary education theories and practices, especially those that are aligned with the delivery of the curriculum. Education knowledge needs to be continuously developed and updated, simultaneously with discipline specific knowledge, to enhance the overall ability to facilitate and deliver curricular innovations. Such approaches may be a challenge in low- and middle-income countries where the number of educators is minimal and education qualifications are usually poor (Bvumbwe & Mtshali, 2018).

Contextually based and informed frameworks, bear the potential of unearthing implementation challenges, further challenging specific communities to reflect on their experience and provide feasible solutions. Literature and evidence may need to be tailor-made for the local context and the local context inspired to generate its own evidence.

6.6 RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made to the various stakeholders engaged, and with direct oversight and control of the implementation of the competency-based midwifery programme in Lesotho.

Recommendation 1

NEI should collaboratively advocate and develop policies that promote the appropriate implementation of the CBC in the midwifery programme. The development of such policies should be an inclusive process, including all relevant stakeholders in nursing and midwifery education in this setting.

Recommendation 2

Educators and clinical facilitators' competence in implementing the CBC is essential for implementing and sustaining the CBC in midwifery in Lesotho. NEIs should invest in the development of their educators and clinical facilitators in implementing the CBC as a matter of priority.

Recommendation 3

NEIs should develop and store teaching and learning materials through repositories to enhance the provision of tangible support for faculty members during curricular enactment.

Recommendation 4

All NEIs in Lesotho should establish and strengthen their quality assurance systems across all aspects of the programme with the aim of meeting all accreditation and quality assurance processes.

Recommendation 5

Strategies should be engaged in describing co-responsibility of both the educators and students in the implementation of the curriculum.

Recommendation regarding research

A case study should be done for the NEI that has performed outstandingly in the implementation of the curriculum to unearth generative mechanisms that enhanced the successful implementation for possible transferability to other NEIs in the country.

6.7 CONTRIBUTIONS FROM THIS STUDY

The various phases of this study made a significant original contribution to knowledge in the discipline of midwifery education and higher education in low- and middle-income countries. This study contributes practically to knowledge through providing a framework for implementing and sustaining a curricular innovation in a midwifery programme in Lesotho. This framework is new and had not been designed in a similar setting.

The approaches engaged to design the framework in this study, may be used by other educators in low- and middle-income countries who may be faced with the challenge of implementing and sustaining curriculum change within their higher education programmes.

6.8 LIMITATIONS OF THIS STUDY

The researcher recognises two main limitations in this study, namely that the researcher had been extensively involved in the curriculum and faculty development in this context

for almost five years, and that the curricular enactment described in these studies was self-reported by educators and not observed by the researcher.

With regard to the researcher being involved in the curriculum and faculty development in the setting, a limitation may be brought from the possible introduction of biases in the design and execution of the entire study, further affecting the responses of the participants, especially the educators, in various aspects of the study. The researcher attempted to mitigate effects of such a limitation through engaging various experts and stakeholders in midwifery education at various stages to enhance the quality of the study. An evaluation committee comprising of experts in various fields of nursing and health professions education, provided academic oversight of the study. Individuals with expertise in curriculum development, and higher education were engaged in the various phases of the study, namely in the integrative review, in validation of the data collection instruments and also in the data analysis aspects of all the studies. The students in the NEI in which the researcher worked had their data collected by a trained data collector, who also acted as a research assistant.

The validation of self-reports would have been strengthened through observation of curricular enactment of the educators by the researcher. Such data would have strengthened the description of the desired community needs. However, the triangulation of data sources in phases 2 and 3 of the study strengthened the validity of the entire study, namely through the inclusion of students who had the experience of curricular enactment and the inclusion of documents used to implement the midwifery programme.

It should be noted however, that such a framework would naturally be applicable to a setting such as Lesotho, as it is based on the contextual realities of implementing a curricular innovation within a midwifery programme in Lesotho. However, the extensive audit trail enhances the transferability of the framework design and development process, for settings particularly in low- and middle-income countries which are implementing curriculum changes.

6.9 PERSONAL REFLECTION

This thesis and the studies inherent within it, present an area of research often under-researched, especially in low- and middle-income countries. Such countries are usually

the recipients of Western-generated strategies and solutions, which soon become obsolete, as they may not align with local contextual realities. It is through engagement with such research that challenges in curriculum implementation may be exposed, challenged, and contextually relevant solutions be designed as opposed to importing already designed and developed approaches or strategies, as these become a root for extended problems.

I had the privilege to be engaged and be part of development work in this setting, for extended periods. This enabled me to reflect on the potential and will power of the people in this country to change the destiny in the education of nurses and midwives.

6.10 CONCLUSION

This concluding chapter presented an overview of the study, research objectives and the key findings under each objective, the overall conclusion of the study, followed by the recommendations from the study. The contribution of this study, the limitations of the study and a personal reflection was also described.

6.11 REFERENCE LIST

Bvumbwe, T., & Mtshali, N. (2018). Nursing education challenges and solutions in sub-Saharan Africa: An integrative review. *BMC Nursing, 17*(3).

Hawking, R. E., Welcher, C., Holmboe, E., Kirk, L., Norcini, J., Simons, K., & Skochelak, S. (2015). Implementation of competency-based medical education: Are we addressing the concerns and challenges? *Medical Education, 49*(11), 1086–1102.

International Confederation of Midwives. (2013). *Global standards for midwifery education (2010) amended 2013.* Retrieved from http://www. http://internationalmidwives.org/what-we-do/education-coredocuments/global-standards-education/ (Date Accessed: 17 October, 2018)

Whittemore, R., & Knafl, K. (2005). The integrative review: Updated methodology. *Journal of Advanced Nursing, 52*(5), 546–533.

Wilson, E. A., Rudy, D., Elam, C., Pfeifle, A., & Stauss, R. (2012). Preventing curriculum drift: Sustaining change and building up on innovation. *Annals of Behavioural Science and Medical Education, 18*(2), 23–26.

Woods, A. (2015). Exploring unplanned curricular drift. *Journal of Nursing Education, 54*(11), 641–644.

World Economic Forum. (2015). *3 ways to improve healthcare in Africa*. Retrieved from https://www.weforum.org/agenda/2015/01/3-ways-to-improve-healthcare-in-africa/ (Date Accessed: 17 October, 2018)

ADDENDUM A:

HIGHEST QUALIFICATIONS OF EXPERTS IN THE REVIEW

1. **Dr J. E. Wolvaardt**

   Institution: Department of Public Health, University of Pretoria

   Highest qualification: *PhD Curriculum and Instructional Design and development*

2. **Dr C. Gordon**

   Institution: Department of Obstetrics and Gynaecology, University of Cape Town

   Highest qualification: *Master of Philosophy in Health Professions Education*

3. **Mr. T. Munangatire**

   Institution: Department of Nursing, National Health Training Centre (Namibia)

   Highest qualification: *Master of Philosophy in Health Professions Education, PhD candidate*

4. **Mrs R. Nyamakura**

   Institution: Department of Nursing Science, University of Zimbabwe

   Highest qualification: *Master Science of Clinical Epidemiology & Master of Science in Nursing, D Phil candidate*

ADDENDUM B:

CRITICAL APPRAISAL REFERENCES

- The Johns Hopkins University. 2018. Johns Hopkins Nursing Evidence-Based Practice Appendix F: Non-research evidence appraisal tool. www.hopkinsmedicine.org. Date accessed: 16 September, 2018

- The Johns Hopkins University . 2018. Johns Hopkins Nursing Evidence-Based Practice Appendix E: Research Evidnece Appraisal Tool. www.hopkinsmedicine.org Date accessed: 16 September, 2018

- Atkins C. and Sampson J. 2002. Critical appraisal guidelines for single case study research. ECIS 2002 proceedings IS.

- Critical Appraisal Skills Programme.2018. Qualitative checklist.[online] available at www.casp-uk.net Date accessed: 16 September, 2018.

- Pluye, P, Marie-Pierre, G., Francis, G.& Janique, J., (2009). A scoring system of appraising mixed methods research and concomitantly appraising qualitative, quantitative and mixed methods primary studies in mixed studies reviews. International Journal of Nursing Studies, 46 529-546

ADDENDUM C:

INVITATION AND DATA EXTRACTION TOOL

24 February 2017

Dear Collaborators,

RE: Data extraction for the Integrative review- Phase 3

Thank you for the overwhelming support that you have provided through your timely expertise in shaping this project. Your inputs are highly valued and appreciated and again I must say thank you very much.

Just to touch base with everyone, this study is part of my Doctoral work whose main aim is to develop a **Framework for implementing and sustaining a curricular innovation in a Midwifery programme in Lesotho**. The Integrative review, which is what we have been busy with, is a phase within this overall multi-phase study. An integrative review is a specialized form of literature review that follows an accountable and rigorous process of gathering, evaluating and analysing evidence generated from diverse methodologies and sources, to illuminate discourse on the subject matter or concept.

The research question related to the Integrative review: What are the strategies used to sustain curricular innovation in Higher Education? guided the data collection process including the initial part of the appraisal. We further used some tools (CASP and friends) to evaluate the quality of the evidence that was generated from the previous rounds. The critical appraisal process, which is what you have just finished, will not be used as an inclusion or exclusion criteria, but the findings of the appraisal are/will be used to illuminate the quality of evidence within this field. Your contributions in that discussion have been of utmost importance.

In this phase of the Integrative review, known as the Data Extraction phase, you will be involved in extracting relevant data from the evidence provided. You will be provided with two zipped folders; one containing evidence and the other data extraction templates. The data extraction templates already have bibliographic details for the coded evidence. You are to extract the relevant information from the corresponding article. It is expected that you then provide the response on the data extraction sheet and provide a page reference related to your response (Please be as elaborate or as clear as possible in your writing). I am aware that some of the evidence will not have responses, please do not leave the space blank, just indicate that there is no response or the issue is not addressed.

We will have to adjust the dates for the submissions from the initial letter for collaborators. Please note that you will be expected to return your extraction by the 10th of March 2017. Please find attached the evidence

and the data extraction templates. Should you have questions about any part of the process, just let me know.

Thank you for your hard work,

Champ.

Data Extraction Tool

Research Question: What are the strategies used to sustain curricular innovation in Higher education?

Evidence Number:

1. BIOGRAPHIC DETAILS OF THE EVIDENCE

TITLE OF THE EVIDENCE:

AUTHORS:

SOURCE:

YEAR:

TYPE OF EVIDENCE:

2. METHODS

Complete the following section questions based on the relevant provided evidence

2.1 What **DESIGN** was used in this evidence?

2.2 Who was the **POPULATION AND SAMPLE** for this evidence?

2.3 What is the **DATA COLLECTION** method described in this evidence?

2.4 What is the **CONTEXT** of this evidence?

3. CURRICULUM INNOVATION

From the evidence provided, what is/are curriculum innovation? Complete in the blank place below number 3.1. Please be as elaborate as possible.

3.1 What is the **CURRICULUM INNOVATION** described in the evidence?

4. DATA EXTRACTION CENTRAL QUESTIONS

For each of the questions below, describe the relevant responses as elaborate as you can. If the aspect in question is not addressed in the article please note it as 'not addressed' in the responses below.

4.1 **WHAT STRATEGY** was used to support/sustain curriculum innovation?

4.2 **HOW** was the strategy used?

4.3 **WHO** used the strategy?

4.4 **WHEN** was the strategy used?

4.5 **WHY** was the strategy used?

4.6 **WHERE** was the strategy used?

4.7 What was the **OUTCOME** of the strategy?

ADDENDUM D:

INTERVIEW QUESTIONS FOR ADMINISTRATORS AND EDUCATORS

SEMI-STRUCTURED INTERVIEW QUESTIONS: ADMINISTRATORS (HEAD OF SCHOOL, HEAD OF PROGRAMME, ADMINISTRATOR)

1. What do you understand is the competence-based midwifery programme
2. How does the institution support the midwifery programme
3. What are your experiences regarding the implementation of the CBC programme in your institution?
4. What has been the difference between the previous way of training midwives and the new way of training midwives i.e. the competence based programme
5. According to you, do you think you have adequate human resources to support the implementation of the competence based midwifery programme? Justify
6. What resources are you using to support classroom and clinical teaching? And why?
7. How do you recruit students into the midwifery programme, what support is provided to the students throughout their training in midwifery
8. To what extent do students influence teaching and administration of the programme?
9. How often is the curriculum/programme reviewed? What is the implications of the review on the running of the programme?
10. Is your programme accredited by regulatory authorities (LNC/CHE), what has been the implications of such accreditation to the programme?
11. What has enabled your institution to sustain the CBC programme?
12. What are the challenges that you face regarding the implementation of the CBC programme?
13. What would you recommend is essential for improving the implementation of the CBC programme?

SEMI-STRUCTURED INTERVIEW QUESTIONS: EDUCATORS

1. Describe your experience as a professional.
2. What is your understanding of a competence-based midwifery programme?
3. How did you acquire this knowledge?
4. What was your role in the development, and now implementation of the CBC curriculum in you institution?
5. How have you been implementing the competence based curriculum in your teaching
6. What has enabled you to implement the curriculum?
7. What challenges have you faced in the implementation of curriculum in your institution?
8. How do you plan to facilitate classroom teaching within the midwifery programme?
9. Once, you are in class, how do you facilitate classroom teaching within the midwifery programme?
10. When you have challenges regarding implementation of the CBC, what do you do?
11. What has enabled you to facilitate teaching in the classroom, what challenges do you face in facilitating students in the new curriculum?
12. Do you have adequate resources to implement this new curriculum within your school? Justify
13. How do check if your students have engaged/ learnt from your facilitation?
14. Is there a process in which your teaching within this curriculum is monitored?, Explain what happens and what are the consequence of such
15. Is your programme accredited by regulatory authorities (LNC/CHE)? What has been the influence of such accreditation to your authorities?
16. What has enabled you to implement the competence based curriculum?
17. What are the challenges that you face in the implementation of the competence-based curriculum?
18. What recommendations would provide that would improve the current implementation of the curriculum?

SEMI-STRUCTURED INTERVIEW QUESTIONS: CLINICAL INSTRUCTORS

1. What is your experience regarding clinical practice related to midwifery?
2. What is your experience regarding facilitating clinical training for students in the midwifery programme?
3. What is your understanding of the competence-based midwifery programme?
4. How did you acquire this knowledge?
5. What was your role in the development, and now implementation of the CBC curriculum in you institution?
6. What has enabled you to implement the curriculum?
7. What challenges have you faced in the implementation of curriculum in your institution?
8. How do you facilitate the clinical teaching for students within the midwifery programme?
9. What has enables you to facilitate clinical teaching in the classroom, what challenges do you face in facilitating students in the new curriculum?
10. How do check if your students have engaged/ learnt from the curriculum within the clinical practice?
11. Do you have adequate resources to implement this new curriculum within your school? Justify
12. Is your programme accredited by regulatory authorities (LNC/CHE)? What has been the influence of such accreditation to your authorities?
13. Do you think this curriculum articulates with the basic competences of a midwife in practice?
14. What has enabled you to implement the competence based curriculum?
15. What are the challenges that you face in the implementation of the competence-based curriculum within clinical practice?
16. What recommendations would provide that would improve the current implementation of the curriculum regarding clinical practice?

ADDENDUM E:

INFORMATION BROCHURE

Title of research: A framework for implementing and sustaining a curricular innovation in a Midwifery programme in Lesotho.

Good day

I, am doing research on the competency-based midwifery programme.

Research is just the process to learn the answer to a question. In this study I want to learn about your experiences regarding the implementation of the competency-based midwifery programme in your institution.

Invitation to participate: I am asking/inviting you to participate in a research study

What is involved in the study – You will be asked questions by the researcher regarding yourself, what you know and have experienced related to the implementation of the competency-based Diploma in Midwifery programme. The interview will be audiotaped and will last about 30 minutes.

Risks of being involved in the study: Some of the questions might be upsetting to you, but it should last for only a short time. You will not be punished if you cannot answer a question.

Benefits of being in the study are that your voice will be heard. Your opinions will be put together with others and this information will lead to development of strategies that will improve the implementation of such an innovations in the future.

You will be given pertinent information on the study while involved in the project and after the results are available.

Participation is voluntary, and refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled to; you may discontinue participation at any time without penalty or loss of benefits to which you entitled. No costs will be payable by you as participant and you will also not be paid for your participation in the research.

Confidentiality: Efforts will be made to keep personal information confidential. Results will only be presented in collective format. Even audiotaped conversations will not be linked to a specific person.

Absolute confidentiality cannot be guaranteed. Personal information may be disclosed if required by law.

Contact details of researcher – for further information

(Ph. 0026657446814)

Contact details of HSREC Secretariat and Chair – for reporting of complaints/problems.

(051) 4052812

P.O. Box/Posbus 339
Bloemfontein 9300
South Africa/Suid-Afrika
T: +27(0)51 401 9111

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

ADDENDUM F:

CONSENT FORM

You have been asked to participate in a research study titled**: A framework for implementing and sustaining a curricular innovation in a Midwifery programme in Lesotho**

You have been informed about the study by ……

You may contact Champion at 0026657446814 any time if you have questions about the research or if you are injured as a result of the research. You may contact the Secretariat of the Health Sciences Research Ethics Committee (HSREC) of the Faculty of Health Sciences, UFS at telephone number (051) 4052812 if you have questions about your rights as a research subject.

Your participation in this research is voluntary, and you will not be penalized or lose benefits if you refuse to participate or decide to terminate participation. If you agree to participate, you will be given a signed copy of this document as well as the participant information sheet, which is a written summary of the research.

The research study, including the above information has been verbally described to me. I understand what my involvement in the study means and I voluntarily agree to participate.

_____ _____

Signature of Participant Date

_____ _____

Signature of Translator/ Witness Date

(Where applicable)

ADDENDUM G:

FOCUS GROUP QUESTIONS FOR STUDENTS

FOCUS GROUP GUIDE FOR STUDENTS

1. Why did you apply to do midwifery? And why at this particular school?
2. Where you oriented to the midwifery programme, how beneficial was the orientation programme for you?
3. Did you enjoy the way in which your midwifery classes were conducted? Why?
4. What was your favourite midwifery module in class? Why?
5. What was your worst midwifery module in class? Why?
6. What enabled you to learn better in the midwifery class?
7. What challenges did you face during classroom facilitation?
8. What role did you play in influencing the way in which you were taught in the classroom?
9. Describe how you were taught midwifery practical?
10. How where you taught midwifery procedures in the skills lab?
11. Did the way in which you were taught in the classroom and simulation, help you during the times you were placed in the clinical area?
12. According to you, did you get enough support during the times you were placed in the clinical area? Justify
13. Did the programme (classroom teaching and clinical placement) prepare you enough for the final examination for both theory and practicals? Why?
14. Do you think this midwifery programme prepared you enough to meet the basic competences of a midwife in Lesotho?
15. How was research in midwifery taught at your school?
16. What enabled you to learn research in midwifery
17. What challenges did you face during the research in midwifery module
18. As students in the programme, do you have a say in how you are taught and assessed at your school?

19. As students in the programme, do you have a say in the management/administration of the midwifery programme
20. What form of support/assistance/guidance did you receive from the school regarding the midwifery programme that enabled you to learn better?
21. What would you suggest to improve the programme

ADDENDUM H:

ENUMARATION SHEET

COMMUNITY NEEDS ASSESSMENT

DOCUMENT ANALYSIS SHEET

STANDARD ICM PRE-SERVICE MIDWIFERY EDUCATION		A	B	C	D	E
Organisation & Administration	*Accreditation status*	√	X	X	X	X
	Programme reports	√	X	X	X	X
	Programme policy	√	X	X	X	X
	CVs of the Head of Programme	√	√	√	√	√
	Strategic plan [institutional/programme]	√	√	√	X	X
	Programme budget	√	√	√	√	X
	MoU Funders	√	X	X	X	X
	Insurance	√	√	X	X	X
	Safety policies	√	X	X	X	X

Midwifery Faculty	*Registration as midwives*	X	√	√	√	X
	Registration as nurse educator	X	√	√	√	X
	CV's update	√	√	√	√	√
	Experience in Midwifery practice	√	√	√	√	X
	Faculty development opportunity	√	√	√	X	X
	Preceptor register	√	X	X	X	X
	Preceptor training programme	X	X	X	X	X
	Job descriptions for faculty	√	√	√	√	√
	Performance appraisal policy	√	√	√	√	√
	Performance appraisal report	√	X	X	X	X
Student Body	*Prospectus*	√	X	X	X	X
	Entrance examination	√	X	X	X	X
	Tracking tools	√	√	√	√	√
	Monitoring tools for students	√	√	√	√	√
Curriculum Issues	*Curriculum document*	√	√	√	√	√
	Teaching and Learning policy	√	X	X	X	X
	Study guide/workbooks	√	X	X	X	X
	Clinical teaching in simulation register	√	X	√	X	X
	Objectives per placement	√	√	√	X	√
	Master plan	√	√	X	X	√
	Time table	√	√	√	√	√

Resources, Facilities & Services	*Occupational health and Safety*	√	X	X	X	X
	Teaching and Learning resources(relevant)	√	X	X	X	X
	Access to EBP	√	√	X	X	X
	Guidelines for Simulation BE	√	X	X	X	√
	MoU with practical placement sites	√	X	X	X	X
	Assessment tools for practical sites	√	√	√	X	X
Assessment	*Assessment policy*	√	X	X	X	X
	Remedial policy	√	X	X	X	√
	Examination papers [theory & pract]	√	√	√	√	√
	Rules and regulation for assessment	X	X	X	X	X
	Programme review report	√	X	X	X	X
	Moderation report	√	√	√	X	X

ADDENDUM I:

INVITATION TO BE PART OF THE STUDY

Paray School of Nursing

P.O. Box 2

Thaba- Tseka, 550

LESOTHO

4 May, 2018

Dear Colleague,

RE: INVITATION TO A WORKSHOP A FRAMEWORK VALIDATION

I am developing a framework for implementing and sustaining the competency-based midwifery programme in Lesotho. This framework development process is part of my doctoral studies.

Due to your specific experience with the competency-based midwifery programme in Lesotho, you are **cordially invited** to be part of a framework validation workshop. The process includes applying your opinion and experience of some given concepts.

The workshop is to be held on the 24th of May, 2018 at a venue to be communicated although in Maseru.

Thank you very much for your continued support. May you please confirm your attendance by the 15th of May, 2018. Specific information around the workshop will be communicated as you confirm your attendance. Should you have any specific queries please let me know.

Sincerely,

Champion N. Nyoni

Ph; 00266 57446814

Email: cnyonioffice@gmail.com

ADDENDUM J:

VALIDATION WORKSHOP PROGRAMME

Venue: Ministry of health boadroom

Number	Activity	Responsible person
1	Registration	
2	Welcome and introductions	Facilitator
3	Purpose of the workshop	Facilitator
4	Group activity: standard 1	Participants
5	Feedback	Participants
6	Group Activity: standard 2	Participants
7	Feedback	Participants
8	Group activity: standard 3	Participants
9	Feedback	Participants
10	Health break	All
11	Group activity: standard 4	Participants
12	Feedback	Participants
13	Group activity: standard 5	Participants
14	Feedback	Participants
15	Group activity: standard 6	Participants
16	Feedback	Participants
17	Assumptions & feedback	Facilitator
18	Concluding remarks	Participants

ADDENDUM K:

ETHICAL CLEARANCE FROM THE UFS

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

UFS·UV
HEALTH SCIENCES
GESONDHEIDSWETENSKAPPE

IRB nr 00006240
REC Reference nr 230408-011
IORG0005187
FWA00012784

01 March 2017

C NYONI
SCHOOL OF NURSING
IDALIA LOOTS BUILDING
UFS

Dear C Nyoni

HSREC 22/2017 (UFS-HSD2017/0116)
PROJECT TITLE: A FRAMEWORK TO SUSTAIN A CURRICULUM INNOVATION IN A MIDWIFERY PROGRAMME IN LESOTHO.

1. You are hereby kindly informed that the Health Sciences Research Ethics Committee (HSREC) reviewed the above research project and it was presented at the meeting on 28 February 2017. Research may not be conducted before the following condition(s) has/have been met and the HSREC grants final approval for the project:

   1.1 The cover letter uploaded is not signed, kindly upload the signed cover letter onto RIMS

   1.2 Signed permission from the Lesotho Ministry of Health must be submitted on RIMS before final approval will be granted.

2. The Committee must be informed of any serious adverse event and/or termination of the study.

3. Any amendment, extension or other modifications to the protocol must be submitted to the HSREC for approval.

4. Kindly use the **HSREC NR** as reference in correspondence to HSREC Administration.

5. Thus, this letter only serves as **conditional** approval.

6. The HSREC functions in compliance with, but not limited to, the following documents and guidelines: The SA National Health Act. No. 61 of 2003; Ethics in Health Research: Principles, Structures and Processes (2015); SA GCP(2006); Declaration of Helsinki; The Belmont Report; The US Office of Human Research Protections 45 CFR 461 (for non-exempt research with human participants conducted or supported by the US Department of Health and Human Services-(HHS), 21 CFR 50, 21 CFR 56; CIOMS; ICH-GCP-E6 Sections 1-4; The International Conference on Harmonization and Technical Requirements for Registration of Pharmaceuticals for Human Use (ICH Tripartite), Guidelines of the SA Medicines Control Council as well as Laws and Regulations with regard to the Control of Medicines, Constitution of the Ethics Committee of the Faculty of Health Sciences.

Yours faithfully

.....
DR SM LE GRANGE
CHAIR: HEALTH SCIENCES RESEARCH ETHICS COMMITTEE
Cc: Prof Y Botma

Health Sciences Research Ethics Committee
Office of the Dean: Health Sciences
T: +27 (0)51 401 7795/7794 | F: +27 (0)51 444 4359 | E: ethicsfhs@ufs.ac.za
Block D, Dean's Division, Room D104 | P.O. Box/Posbus 339 (Internal Post Box G40) | Bloemfontein 9300 | South Africa
www.ufs.ac.za

ADDENDUM L:

ETHICAL CLEARANCE FROM THE MOH [LESOTHO]

LESOTHO

Ministry of Health
PO Box 514
Maseru 100

REF: ID25-2017

Date: 25 April, 2017

To
Champion N. Nyoni
Doctor of Philosophy (Nursing) candidate
University of Free State

Category of Review:
[X] Initial Review
[ ] Continuing Annual Review
[ ] Amendment/Modification
[ ] Reactivation
[ ] Serious Adverse Event
[ ] Other: For dissemination of results

Dear Mr. Champion,

RE: A framework to sustain curriculum innovation in a midwifery programme in Lesotho

This is to inform you that on 24 April, 2017 the Ministry of Health Research and Ethics Committee reviewed and **APPROVED** the letter of request for the above mentioned protocol and hereby authorizes you to conduct the study with the proposed title according to the activities and population specified in the protocol. Departure from the approved protocol will constitute a breach of this permission.

This approval includes review of the following attachments:
[x] Protocol version dated August 29, 2016
[ ] English consent forms
[ ] Sesotho consent forms
[ ] Data collection forms
[ ] Participant materials: Informed consent form
[X] Other materials: Approval letter from UFS.UV dated 19 Jan. 2017; CV of the PI

This approval is **VALID** until April 24, 2018.

Please note that an annual report and request for renewal, if applicable, must be submitted at least 6 weeks before the expiry date.

All serious adverse events associated with this study must be reported promptly to the MOH Research and Ethics Committee. Any modifications to the approved protocol or consent forms must be submitted to the committee prior to implementation of any changes.

We look forward to receiving your progress reports and a final report at the end of the study. If you have any questions, please contact the Research and Ethics Committee at rcumoh@gmail.com (or) 22226317.

Sincerely,

Dr. Nyane Letsie
Director General Health Services

Dr. Jill Sanders
Co-chairperson NH-REC

ADDENDUM M:

AUTHOR GUIDELINES FOR CURRICULUM INQUIRY

Retrieved from: http://www.curriculuminquiry.org/information-for-authors/

Guidelines for Authors

EDITORIAL REVIEW PROCEDURES: All papers submitted to Curriculum Inquiry are subjected to a preliminary internal review, and those deemed appropriate for publication in the journal are sent anonymously to readers. The editors rely heavily on the judgments of those readers but are not bound by them. Intending contributors should note that the editors favor clean, cogent prose. Manuscripts are accepted for publication subject to nonsubstantive editing with the understanding that CI has the right of first publication.

Curriculum Inquiry conducts a double blind review process. To assure anonymity, only the title should appear on the manuscript and all references to the author(s) in the manuscript, including the reference list, should be removed. Submit a separate cover page with title, name, and affiliation.

Curriculum Inquiry's policy is to present original publications which are available for the first time through our journal. For these reasons, during the online submission process authors must confirm that the submitted manuscript is an original work, has not been published before, or posted electronically, and is not being considered for publication elsewhere either in printed or electronic form. Notwithstanding the foregoing, sharing print or electronic copies of the unpublished Article (as long as acknowledgment of submission to Curriculum Inquiry is clearly visible) with a limited audience, such as colleagues, or students, but not including posting to a widely accessible (online) website, would not prejudice acceptance. If unsure, please communicate with the Curriculum Inquiry editorial office

GENERAL GUIDELINES

- All manuscripts must be submitted via the online journal submission site at http://mc.manuscriptcentral.com/ci.
- Manuscripts should not exceed 10,000 words including tables, captions, reference list and endnotes.
- All copy – including quotations, indented matter, footnotes, and references – should be typed doublespaced, on standard letter size (8.5 x11 inch) pages, with 1-inch margins at top and bottom and 1.25-inch margins right and left sides, using 12-point font.
- Footnotes should be in the form of Endnotes and should be used for commentary only, not for references.
- Manuscripts must be accompanied by an Abstract of 200–250 words included in the main document. The Abstract should give the reader a vivid sense of the issues, findings, and conclusions of the article.
- A separate title or cover page for the manuscript should be uploaded which has the title of the manuscript, author(s) names, institutional affiliation, and contact information.
- Tables: Type each table on a separate page. Refer to each table in numerical order in the text. Prepare tables without vertical lines.

FIGURES

- Authors must provide the highest quality figure format possible. Please be sure that all imported scanned material is scanned at the appropriate resolution: 1200 dpi for line art, 600 dpi for grayscale and 300 dpi for colour.
- Figures must be saved separate to text. Do not embed figures in the manuscript file.
- Files should be saved as one of the following formats: TIFF (tagged image file format), PostScript or EPS (encapsulated PostScript), and should contain all the necessary font information and the source file of the application (e.g. CorelDraw/Mac, CorelDraw/PC).
- All figures must be numbered in the order in which they appear in the manuscript (e.g. Figure 1, Figure 2). In multi-part figures, each part should be labelled (e.g. Figure 1(a), Figure 1(b)).
- Figure captions must be saved separately, as part of the file containing the complete text of the manuscript, and numbered correspondingly.
- The filename for a graphic should be descriptive of the graphic, e.g. Figure1, Figure2a.

REFERENCING AND BIBLIOGRAPHIC STANDARDS FOR AUTHORS: Authors preparing manuscripts for Curriculum Inquiry should refer to the *Publication Manual of the American Psychological Association (APA) 6th Edition* for bibliographic and referencing style. Numbered notes should only be used for acknowledgments and commentary, and should appear as endnotes. In-text citations should include, in parentheses, author surname, year of publication, and page numbers where appropriate (see sections 6.11–6.21 of the APA manual for details and examples).

In all cases, a reference list formatted according to APA style must be provided at the end of the manuscript. Examples of APA REFERENCE LIST style:

Journal Articles

Kernis, M. H., Cornell, D. P., Sun C.-R., Berry, A., & Harlow, T. (1993). There's more to self-esteem than whether it is high or low: The importance of stability of self-esteem. *Journal of Personality and Social Psychology, 65*, 1190–1204.
Leibowitz, A., & Klerman, J. (1995). Explaining changes in married mothers' employment over time. *Demography*, *32*, 365–378.

Books

American Psychological Association. (2010). *Publication manual of the American Psychological Association* (6th ed). Washington, DC: Author.
Beck, C. A. J., & Sales, B. D. (2001). *Family mediation: Facts, myths, and future prospects*. Washington, DC: American Psychological Association.

Article or Chapter in an Edited Book

Atkinson, P., & Delamont, S. (1976). Mock-ups and cock-ups: The management of guided discovery instruction. In M. Hammersley & P. Woods (Eds.), *The process of schooling* (pp. 133–142). London: Routledge & Kegan Paul.
Elder, G., George, L., & Shanahan, M. (1996). Psychosocial stress over the life course. In H.

Kaplan (Ed.), *Psychosocial stress: Perspectives on structure, theory, life-course and methods* (pp. 247–292). San Diego, CA: Academic Press.

Internet

Provide the DOI if one has been assigned to the content (see 6:31-6:32 of the APA manual for details and examples). Use this format for the DOI in references: doi:xxxxxxx. When a DOI is used no further retrieval information is needed to identify or locate the content. For example:

> Abraham, C., & Michie, S. (2008). A taxonomy of behaviour change techniques used in interventions. *Health Psychology, 27*(3), 379-387. doi:10.1037/0278-6133.27.3.379

If no DOI has been assigned to the content, provide the home page URL of the journal, book or report publisher. Do not include retrieval dates unless the source material may change over time (e.g., Wikis). For example:

> Clay, R. (2008, June). Science vs. ideology: Psychologists fight back about the misuse of research. *Monitor on Psychology, 39*(6). Retrieved from http://www.apa.org/monitor/

ADDENDUM N:

RESPONSE TO REVIEW COMMENTS: MIDWIFERY JOURNAL

Dr. A. Luyben,

Guest Editor

Midwifery

Kings College,

London, UK

15 January, 2018

Dear Dr. Luyben

RE: SUSTAINING A NEWLY IMPLEMENTED COMPETENCE-BASED MIDWIFERY PROGRAMME IN LESOTHO: EMERGING ISSUES

We would like to acknowledge the feedback provided from the Journal through the reviewing process. The feedback was enlightening and was necessary to improve the quality of the manuscript.

The authors have addressed the feedback from the reviewers in the manuscript. The table below reflects how each of the comments as suggested by the reviewers were addressed in the manuscript including the reference to the specific page where the address was made.

We hope the revised article will meet the publishing standards of the journal. Additionally, all authors have approved the contents of this manuscript and have agreed to the Midwifery submission policies.

Sincerely,

Champion N. Nyoni

Corresponding Author: Champion N. Nyoni

Institution Name: School of Nursing, University of the Free State

Address: 205 Nelson Mandela Drive, Bloemfontein, South Africa

Email: cnyonioffice@gmail.com

Tel: 00266 57446814

Reviewer 1 comments	**Authors response**
Second highlight; please write "should" instead of "could"	“could” was replaced with “should” on the second highlight
What I miss at the end of the Background "the sustainability of the CBC", going over to the Method section, is a mention of the Aim of this study. This could be for example: "This article reports on these challenges."	The aim of the article was added immediately at the end of the background to read : “ *This article reports factors influencing the sustainability of a newly implemented CBC for a midwifery programme in Lesotho” (Page 2)*
- Please use the formal name of the education standards of ICM; "ICM Global Standards for Midwifery Education".	The formal name of the ICM standards was used, to read: *“ICM Global Standards for Midwifery Education” (page 2)*
Reviewer 2 comments	**Authors response**

Can the authors add a little more detail about the questions asked of administrators (currently simply states "information about their experience implementing CBE") and questions asked in focus groups with students.	A sentence summarizing what the administrators were asked was added to the methods section to read: *"…focusing on their experience in supporting and implementing the new CBC"* (page 2). The section relating to the question that was focused on the students was rephrased to include a statement reflecting a summary of what students were asked during the focus groups, to read: *"The students were asked about their experience of the CBC midwifery programme" (page 2)*
What documents were gathered? Paper only says documents gathered based on a framework.	A statement explaining what type of documents were collected was introduced to read; *"Documents that influenced the implementation of the CBC midwifery programme were gathered.." (page 2)*
Can the authors revise the description of themes to reflect a description of the theme? Currently it reads somewhat like discussion vs providing data.	All the themes were revised to provide data and eliminate an element of a discussion.
The study description states this was a qualitative descriptive study plus a document analysis, yet the description of themes from qualitative analysis also includes documents analyzed. As described in methods, document analysis would be a separate description.	The documentary analysis was provided as a supplementary approach to the data collection process. The documents collected were relevant to the study and they informed the development and articulation of the themes that were results of the study. The findings of the analysis were integrated with the themes to enrich the themes.

Were 5 focus groups conducted with students?	There were five focus groups in total. An additional phrase was added in the methodology section, to emphasize the number of the focus groups, *"Five focus groups…"* (page 2).
A description of the definition of CBE would be helpful in understanding model implemented in Lesthoto.	A definition of competence by Fernandez et al (2012), that was adopted to influence the model used in the CBC was added to the background of the manuscript, to read: *The midwifery educators viewed competence as inevitably linked to a complex situation where the midwife demonstrates psychomotor skills, solves problems, makes clinical judgement, acts professionally and interacts with other healthcare professionals and family within context (Fernandez et al., 2012), (page 1)*

ADDENDUM O

REVIEWER COMMENTS AND RESPONSE [NEP]

School of Nursing

University of the Free State

Bloemfontein

2. October, 2017

The Editor in Chief

Nurse Education in Practice

Dear Prof Sidebotham,

RE: IMPLEMENTING A COMPETENCY BASED MIDWIFERY PROGRAMME IN LESOTHO: A GAP ANALYSIS

We would like to acknowledge and appreciate the feedback we recivede from both reviewers and the insightfulcomments from Prof Sidebotham regarding our manuscript. Thank you very much, as such comments and feedback have strengthened the quality of the manuscript including its meticulousness.

The authoes habe attended to each comments from the feedback, clarifying the purpose of the study and the article and why the ICM documents were used.

Both authors agree on the revision and content of this manuscript.

Thank you very much for the opportunity to send through our work.

Regards

Champion N. Nyoni and Yvonne Botma

Responses to the reviews

Reviewer 1 comments	Response to the comments
Introduction **A serious error appears in the last sentence, second paragraph, where authors state that *ICM proposes seven professional competencies of a midwife.* Authors are actually pointing to the seven domains of the conceptual model of the 2010/2013 version of the *ICM Essential Competencies for Basic Midwifery Practice.* That document actually presents more than 250 "competencies" which are defined in the *ICM Glossary* as items of knowledge, skill, and professional behaviors (KSB) for basic practice.**	**The authors made reference to the 2010/2013 version of the *ICM Essential competencies for Basic Midwifery practice*, page 1 on the second paragraph, where the definition of competencies was states as *"broad statement heading each section...",* the document further identifies each of the seven broad domains as competencies (see page 3, 6, 8, 11, 14,16, and 18).** **This had previously supported the decision by the authors to state them as professional competencies for a midwife but not ignoring the fact that the competencies are supported by appropriate knowledge, skill and professional behaviors. The manuscript has been adjusted to include the concept of "competency-domains" (see section 1)**
Any review of a competency-based education program and curriculum model should necessarily address the sufficiency, usability, currency, and effectiveness of the program and the compliance (curriculum concordance) with the ICM statement of KSBs for basic practice. This reviewer is uncertain about the aim and purpose of this "gap analysis."	**The authors sought to describe the gap between the enacted curriculum (the enactment of the CBC in the institutions) against the described curriculum, in this context being the CBC including its philosophy, mission, learning outcomes etc. Since the initial development of the CBC included the adoption and adaptation of ICM documents, ICM standards for midwifery education were also engaged.** **The manuscript has been adjusted under the section of study design to reflect clearly the purpose of this study (see section 3.1).**

Was it a program review, a CBE process review, or something else? **Abstract and methodology** **Authors describe use of a "gap analysis" method to examine the implementation of a competency-based midwifery education program. Authors state that the ICM global standards for midwifery education were used *to structure the document inquiry*. Does this mean that the ICM *Companion Guidelines* (which set forth the detail of the standards) and/or the ICM gap analysis tool (which providers the structure for conducting a gap analysis of the standards, according to guidelines) were used by the Authors in their research? If yes, then a good deal more detail of the identified gaps might have emerged, and might have been addressed in the findings. As a single example, it would be important to address the fact that a one-year post basic program may not meet the guidelines for program length (unable to judge from information in the article), so would not be recognized as a midwifery education program by ICM, if that was of any importance to the Authors.** **Basically, this Reviewer is confused about whether the Authors were determining the gap between minimum requirements for an ICM-approved midwifery education program (for which ICM documents would be the appropriate criteria) or the gap between minimum "best practices" for competency-based curricula (which is another issue altogether, and for which the ICM Education Standards and Companion Guidelines would not be the appropriate reference criteria).**	**The authors acknowledge the fact that a curriculum is enacted in a programme with one influencing the other. The gap analysis in this case focused only on describing the gap between the described curriculum for the midwifery programme in this setting and the actual enactment of that curriculum within the midwifery programme.** ***This midwifery programme was already a one year programme before the introduction of the CBC. The length of the programme had been endorsed by the midwifery stakeholders in this setting. Their argument was based on the fact that the ICM presents programme length as a recommendation based on expert consensus and not empirical evidence allowing for various contexts to adapt based on contextual realities. (This section was not part of the manuscript, as enactment was measured against the described curriculum which is designed for a one year programme)*** **The purpose of the study has been reworked to reveal the approach authors took in executing this gap analysis. The argument based on measuring curriculum enactment against the described curriculum** **(see Section 3.1)**

Perhaps Authors structured their own gap analysis methodological approach? If yes, why did they not choose to follow an already developed process? An explanation of this deviation would be helpful. **ICM does have a complementary set of materials that provide guidance for those who wish to develop competency-based curricula, but these are not cited by the Authors. That query leads to another.**	**The ICM documents have been appropriately cited.**
What part, if any, did the Lesotho Midwives Association play in the design of the education programs or the competency-based curriculum of studies or in this gap analysis?	**The Independent Midwives Association of Lesotho (IMAL) was engaged in the development of the curriculum, with various representatives cited as authors of the curriculum. The curriculum was presented and approved by various stakeholders in midwifery education in Lesotho, inclusive of the Independent Midwives Association of Lesotho. The manuscript has been adjusted to reflect the aspect of midwifery education stakeholders as part of the curriculum development process (see section 2)** **The association was not involved in this gap analysis**
But beyond this fundamental question about the aim and purpose of the study (was it the entire midwifery program or its curriculum design being assessed for gaps – or perhaps both?), the remainder of the article is very well detailed, with evident rigor in analytical approaches, presentation and interpretation of findings. **The discussion is particularly well presented; offering strong rationale and program-based evidence, for and about the commitment required to implement competency-based education designs within academic programs.**	

The Authors do valuable service to the advancement of CBE as a transformative education model. **References** **Several are incomplete, lacking URLs or full publisher information.** **The ICM global standards document is not correctly titled; and important ICM documents are not cited or referenced.**	**All references have been updated including important ICM documents**
Reviewer 2 Comments	**Response to the comments**
This paper is very well written. I suggest some minor amendments. • **On page 5 clarify that midwifery is a 1 year post basic nursing. Please clarify how long the nursing programme is, and does it lead to a degree or diploma.** • • **Has nursing also implemented a CBC?** • **I suggest clarifying who the faculty are who are teaching midwifery - what is there experience and qualifications?** • **I was unsure whether the 1-year midwifery programme was a compulsory part of the nursing programme. I think this would be a major block to learning if the students are not planning to practice midwifery.** • **In your recommendations would you consider that making midwifery a separate course to**	**The manuscript has been edited to reveal that the nursing programme is a three-year diploma programme. (see section 4.3)** **At the time of the study, nursing was still in a content driven curriculum and this has been reflected in the manuscript (see section 4.3)** **Section 4.2 reveal a variation in the qualification of educators in the programmes from all schools, and the range of experiences has been included. five Nurse Education Institutions (see section 4.2)** **The authors agree with the reviewer, and this was expressed by students, as a major contributor to their demotivation to learn midwifery** **The authors agree with the reviewer, and have added a statement about making midwifery an optional programme for**

nursing would increase motivation and engagement?	**students, allowing others to exit with only the nursing qualification (see section 5)**
• **Just a thought from me - Would you be able to comment on whether you consider the ICM competencies (developed by educators from high income countries) are relevant for low and middle income countries?** **I congratulate you on this research and look forward to hearing more from you.**	**Thank you for the question. These competencies should be flexible enough to allow for national or local adaptation based on population needs, socio-culture issues and healthcare system. They should perhaps be unpacked to tailor-make such competencies for specific regions and countries**

ADDENDUM P

AUTHOR GUIDELINES: AFRICAN JOURNAL OF HEALTH PROFESSIONS EDUCATION

Retrieved from:http://www.ajhpe.org.za/index.php/ajhpe/about/submissions#authorGuidelines

Author Guidelines

Author Guidelines

Please take the time to familiarise yourself with the policies and processes below. If you still have any questions, please do not hesitate to ask our editorial staff (tel.: +27 (0)21 532 1281, email: submissions@hmpg.co.za).

Authorship

Named authors must consent to publication. Authorship should be based on: (*i*) substantial contribution to conceptualisation, design, analysis and interpretation of data; (*ii*) drafting or critical revision of important scientific content; or (*iii*) approval of the version to be published. These conditions must all be met for an individual to be included as an author (uniform requirements for manuscripts submitted to biomedical journals; refer to www.icmje.org)

If authors' names are added or deleted after submission of an article, or the order of the names is changed, all authors must agree to this in writing.

Please note that co-authors will be requested to verify their contribution upon submission. Non-verification may lead to delays in the processing of submissions.

Author contributions should be listed/described in the manuscript.

Conflicts of interest

Conflicts of interest can derive from any kind of relationship or association that may influence authors' or reviewers' opinions about the subject matter of a paper. The existence of a conflict – whether actual, perceived or potential – does not preclude publication of an article. However, we

aim to ensure that, in such cases, readers have all the information they need to enable them to make an informed assessment about a publication's message and conclusions. We require that both authors and reviewers declare all sources of support for their research, any personal or financial relationships (including honoraria, speaking fees, gifts received, etc) with relevant individuals or organisations connected to the topic of the paper, and any association with a product or subject that may constitute a real, perceived or potential conflict of interest. If you are unsure whether a specific relationship constitutes a conflict, please contact the editorial team for advice. If a conflict remains undisclosed and is later brought to the attention of the editorial team, it will be considered a serious issue prompting an investigation with the possibility of retraction.

Research ethics committee approval

Authors must provide evidence of Research Ethics Committee approval of the research where relevant. Ensure the correct, full ethics committee name and reference number is included in the manuscript.

If the study was carried out using data from provincial healthcare facilities, or required active data collection through facility visits or staff interviews, approval should be sought from the relevant provincial authorities. For South African authors, please refer to the guidelines for submission to the National Health Research Database. Research involving human subjects must be conducted according to the principles outlined in the Declaration of Helsinki. Please refer to the National Department of Health's guideline on Ethics in Health research: principles, processes and structures to ensure that the appropriate requirements for conducting research have been met, and that the HPCSA's General Ethical Guidelines for Health Researchers have been adhered to.

Protection of rights to privacy

Research Participants

Information that would enable identification of individual research participants should not be published in written descriptions, photographs, radiographs and pedigrees unless the information is essential for scientific purposes and the patient (or parent or guardian) has given informed written consent for publication and distribution. We further recommend that the published article is disseminated not only to the involved researchers but also to the patients/participants from whom the data was drawn. Refer to Protection of Research Participants. The signed consent form should be submitted with the manuscript to enable verification by the editorial team.

Other individuals

Any individual who is identifiable in an image must provide written agreement that the image may be used in that context in the *AJHPE.*

Copyright notice

Copyright remains in the Author's name. The work is licensed under a Creative Commons Attribution - Noncommercial Works License. Authors are required to complete and sign an Author Agreement form that outlines Author and Publisher rights and terms of publication. The **Author Agreement form** should be uploaded along with other submissions files and any submission will be considered incomplete without it.

Material submitted for publication in the *AJHPE* is accepted provided it has not been published or submitted for publication elsewhere. Please inform the editorial team if the main findings of your paper have been presented at a conference and published in abstract form, to avoid copyright infringement. The *AJHPE* does not hold itself responsible for statements made by the authors. The corresponding author should also indicate if the research forms part of a postgraduate short report, dissertation or thesis.

Previously published images

If an image/figure has been previously published, permission to reproduce or alter it must be obtained by the authors from the original publisher and the figure legend must give full credit to the original source. This credit should be accompanied by a letter indicating that permission to reproduce the image has been granted to the author/s. This letter should be uploaded as a supplementary file during submission.

Privacy statement

The *AJHPE* is committed to protecting the privacy of its website and submission system users. The names, personal particulars and email addresses entered in the website or submission system will not be made available to any third party without the user's permission or due process. By registering to use the website or submission system, users consent to receive communication from the *AJHPE* or its publisher HMPG on matters relating to the journal or associated publications. Queries with regard to privacy may be directed to publishing@hmpg.co.za.

Ethnic/race classification

Use of racial or ethnicity classifications in research is fraught with problems. If you choose to use a research design that involves classification of participants based on race or ethnicity, or discuss

issues with reference to such classifications, please ensure that you include a detailed rationale for doing so, ensure that the categories you describe are carefully defined, and that socioeconomic, cultural and lifestyle variables that may underlie perceived racial disparities are appropriately controlled for. Please also clearly specify whether race or ethnicity is classified as reported by the patient (self-identifying) or as perceived by the investigators. Please note thatit is not appropriate to use self-reported or investigator-assigned racial or ethnic categories for genetic studies.

Continuing Professional Development (CPD)

AJHPE is an HPCSA-accredited service provider of CPD materials. Principal authors can earn up to 15 CPD continuing education units (CEUs) for publishing an article; co-authors are eligible to earn up to 5 CEUs; and reviewers of articles can earn 3 CEUs. Each month, *AJHPE* also publishes a CPD-accredited questionnaire relating to the academic content of the journal. Successful completion of the questionnaire with a pass rate of 70% will earn the reader 3 CEUs. Administration of our CPD programme is managed by Medical Practice Consulting. To complete questionnaires and obtain certificates, please visit MRP Consulting

Manuscript preparation

Preparing an article for anonymous review

To ensure a fair and unbiased review process, all submissions are to include an anonymised version of the manuscript. The exceptions to this requirement are Correspondence, Book reviews and Obituary submissions.

Submitting a manuscript that needs additional blinding can slow down your review process, so please be sure to follow these simple guidelines as much as possible:

An anonymous version should not contain any author, affiliation or particular institutional details that will enable identification.

Please remove title page, acknowledgements, contact details, funding grants to a named person, and any running headers of author names.

Mask self-citations by referring to your own work in third person.

General article format/layout

Submitted manuscripts that are not in the correct format specified in these guidelines will be returned to the author(s) for correction prior to being sent for review, which will delay publication.

General:

Manuscripts must be written in UK English (this includes spelling).

The manuscript must be in Microsoft Word or RTF document format. Text must be 1.5 line spaced, in 12-point Times New Roman font, and contain no unnecessary formatting (such as text in boxes). Pages and lines should be numbered consecutively.

Please make your article concise, even if it is below the word limit.

Qualifications, ***full*** affiliation (department, school/faculty, institution, city, country) and contact details of ALL authors must be provided in the manuscript and in the online submission process.

Include sections on Acknowledgements, Conflict of Interest, Author Contributions and Funding sources. If none is applicable, please state 'none'.

Abbreviations should be spelt out when first used and thereafter used consistently, e.g. 'intravenous (IV)' or 'Department of Health (DoH)'.

Numbers should be written as grouped per thousand-units, i.e. 4 000, 22 160.

Quotes should be placed in single quotation marks: i.e. The respondent stated: '...'

Round brackets (parentheses) should be used, as opposed to square brackets, which are reserved for denoting concentrations or insertions in direct quotes.

If you wish material to be in a box, simply indicate this in the text. You may use the table format –this is the *only* exception. Please DO NOT use fill, format lines and so on.

Preparation notes by article type

Research

Guideline word limit: 3 000 words (excluding abstract and bibliography)

Research articles describe the background, methods, results and conclusions of an original research study. The article should contain the following sections: introduction, methods, results, discussion and conclusion, and should include a structured abstract (see below). The introduction should be concise – no more than three paragraphs – on the background to the research question, and must include references to other relevant published studies that clearly lay out the rationale for conducting the study. Some common reasons for conducting a study are: to fill a gap in the literature, a logical extension of previous work, or to answer an important question. If other papers related to the same study have been published previously, please make sure to

refer to them specifically. Describe the study methods in as much detail as possible so that others would be able to replicate the study should they need to. Where appropriate, sample size calculations should be included to demonstrate that the study is not underpowered. Results should describe the study sample as well as the findings from the study itself, but all interpretation of findings must be kept in the discussion section. The conclusion should briefly summarise the main message of the paper and provide recommendations for further study.

May include up to 6 illustrations or tables.

A max of 20 - 25 references

Illustrations/photos/scans

If illustrations submitted have been published elsewhere, the author(s) should provide evidence of consent to republication obtained from the copyright holder.

Figures must be numbered in Arabic numerals and referred to in the text e.g. '(Fig. 1)'.

Each figure must have a caption/legend: Fig. 1. Description (any abbreviations in full).

All images must be of high enough resolution/quality for print.

All illustrations (graphs, diagrams, charts, etc.) must be in PDF form.

Ensure all graph axes are labelled appropriately, with a heading/description and units (as necessary) indicated. Do not include decimal places if not necessary e.g. 0; 1.0; 2.0; 3.0; 4.0 etc.

Each image must be attached individually as a 'supplementary file' upon submission (not solely embedded in the accompanying manuscript) and named Fig. 1, Fig. 2, etc.

Tables

Tables should be constructed carefully and simply for intelligible data representation. Unnecessarily complicated tables are strongly discouraged.

Large tables will generally not be accepted for publication in their entirety. Please consider shortening and using the text to highlight specific important sections, or offer a large table as an addendum to the publication, but available in full on request from the author.

Embed/include each table in the manuscript Word file - do not provide separately as supplementary files.

Number each table in Arabic numerals (Table 1, Table 2, etc.) consecutively as they are referred to in the text.

Tables must be cell-based (i.e. not constructed with text boxes or tabs) and editable.

Ensure each table has a concise title and column headings, and include units where necessary.

Footnotes must be indicated with consecutive use of the following symbols: * † ‡ § ¶ || then ** †† ‡‡ etc.

References

NB: *Only complete, correctly formatted reference lists in Vancouver style will be accepted. If reference manager software is used, the reference list and citations in text are to be unformatted to plain text before submitting.*

Authors must verify references from original sources.

Citations should be inserted in the text as superscript numbers between square brackets, e.g. These regulations are endorsed by the World Health Organization,[2] and others.[3,4-6]

All references should be listed at the end of the article in numerical order of appearance in the Vancouver style (not alphabetical order).

Approved abbreviations of journal titles must be used; see the List of Journals in Index Medicus.

Names and initials of all authors should be given; if there are more than six authors, the first three names should be given followed by et al.

Volume and issue numbers should be given.

First and last page, in full, should be given e.g.: 1215-1217 **not** 1215-17.

Wherever possible, references must be accompanied by a digital object identifier (DOI) link). Authors are encouraged to use the DOI lookup service offered by CrossRef:

On the Crossref homepage, paste the article title into the 'Metadata search' box.

Look for the correct, matching article in the list of results.

Click Actions > Cite

Alongside 'url =' copy the URL between { }.

Provide as follows, e.g.: https://doi.org/10.7196/07294.937.98x