A MODEL OF COLLABORATION IN IMPLEMENTING PROBLEM BASED LEARNING (PBL) IN NURSING EDUCATION

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DECLARATION

I, **Mahlasela Annah Rakhudu**, declare that ***A MODEL OF COLLABORATION IN IMPLEMENTING PROBLEM BASED LEARNING IN NURSING EDUCATION*** is my own work and that the sources used and quoted have been indicated and acknowledged by means of complete references and that this work has not been submitted before for any other degree at any other institution.

.....

Signature **September, 2013**

M A Rakhudu **Date**

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ABSTRACT

To meet health care challenges brought about by the patterns of diseases such as HIV, Tuberculosis, Sexually Transmitted Diseases (STDs), chronic conditions and malnutrition, nurse educators are required to redirect their teaching strategies to those that promote critical thinking in order to develop nurses who are critical, reflective and analytical. It is therefore important to continually adapt teaching strategies to meet the changing health-care needs of the country.

The purpose of this study was to develop a collaborative model of implementing PBL in the nursing education context. The study was conducted in two phases, namely, exploration and description of the opinions of the nurse educators, nurse managers and preceptors regarding collaboration in PBL in nursing education and model development. In phase 1, an exploratory sequential mixed methods design (Creswell & Clark, 2007) was used to explore the opinions and views of participants regarding collaboration in implementing PBL in nursing education. For the qualitative component, a sample of 44 respondents was purposively recruited to participate, whereas for the quantitative component participants were conveniently recruited. The findings from the qualitative design and literature review informed the development of a survey instrument from a larger population (n=96) of nurse educators from the South African Higher Education Institutions offering PBL nursing education, nurse managers and preceptors from clinical services in the North-West Province where PBL students are placed for clinical learning.

Both qualitative and quantitative data indicated the need for various types (inter-professional, inter-disciplinary, and inter-institutional) of collaboration; benefits of collaboration to staff, students, organizations and health care users; factors and barriers to successful collaboration in implementing PBL. The data from this process formed the basis for concept analysis and model development.

Phase 2 included a model development and consisted of concept analysis and model development. The concept of interest in this study is collaboration, which was identified from the interviews analysed according to the Rodgers and Knalf's (2000:80)

Evolutionary Method. The results of concept analysis were integrated in the process of concept development. The concept collaboration was classified within a practice model as prescribed by Dickoff, James and Wiedenbach (1968:434–435) using the elements of practice theory. The collaborative model was developed according to Chinn and Kramer (2011:195).

The developed model for collaboration in the implementation of PBL has six main elements, namely: the Higher Education; Nursing Education and Health Care Services (*Context*); institutions initiating PBL, clinical services, colleges affiliated to Universities, students and health care users (*recipients*); Centre's of Excellence in PBL *(Agents)*; effective implementation of PBL (*terminus*); collaboration (*process*); and commitment, communication, cooperation, trust and respect (*dynamics*).

Guidelines to operationalize the model, which include the strategic management and leadership, should be committed to the collaboration by offering support, commitment of time, energy and resources. Leadership and commitment are basic to success of collaboration. Accordingly, the South African Nursing Council (SANC) should obligate professional nurses to be involved and collaborate in education of nursing students, especially in clinical services. Good interpersonal relationships and communication skills should be maintained between academic institutions and clinical health services to promote participation in the collaboration. Health-care authorities should provide authentic learning opportunities for PBL nursing students through policies, procedure and protocols. Nurses in the health-care services must be trained on PBL and collaboration skills; clinical staff must participate in PBL curriculum planning, implementation and evaluation together with roles, responsibilities and tasks of clinical individuals, teams. And institutions should clearly detail, in the Memorandum of Understanding (MOU), issues of collaboration to ensure shared accountability and ownership. Recommendations for research include, inter alia: piloting the model and evaluating it; further research on collaboration in implementing PBL at different levels of operations; cultural influences on collaboration; criteria to assess effectiveness of collaboration; and development of an evaluation instrument of the model.

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LIST OF ABREVIATIONS/ACRONYMS

AACN	:	American Association of Colleges of Nursing
CBL	:	Case-based learning
CCFOs	:	Critical Cross-Field Outcomes
ETQAs	:	Education and Training Quality Assurors
FGD	:	Focus Group Discussions
HEQC	:	Higher Education Quality Committee
HST	:	Health System's Trust.
MTD	:	Multi-Disciplinary Team
MOU	:	Memorandum of Understanding
NE	:	Nursing Education.
NEIs	:	Nursing Education Institutions
NEPAD	:	New Partnerships for Africa's Development
NQF	:	National Qualifications Framework
NWU	:	North West University
PBL	:	Problem-Based Learning
SANC	:	South African Nursing Council
SAQA	:	South African Qualifications Authority
STDs	:	Sexually Transmitted Diseases
WHO	:	World Health organization

CHAPTER 1

OVERVIEW OF THE STUDY

1.1 Introduction

Nursing education in South Africa is increasingly under pressure to focus on developing clinicians prepared to work in rapidly changing, multicultural environments influenced by technological advances and fiscal constraints;. In addition, the challenges brought about by the patterns of diseases such as HIV, tuberculosis, Sexually Transmitted Diseases (STDs), non-communicable diseases and malnutrition also contribute to challenges related to quality of care services rendered. To meet these challenges, nurse educators are required to redirect their teaching strategies to those that promote critical thinking in order to develop nurses who are critical, reflective and analytical. It is, therefore, important to continually adapt the teaching strategies to meet the changing health care needs of the country. This study aims to develop a model of collaboration for ensuring effective implementation of Problem-Based Learning (PBL) in Nursing Education (NE). This chapter therefore provides a description of the background and rationale for the study, problem statement, the research methodology and process to be followed.

1.2 Background and Rationale

Globally, leaders in government, the private sector, and education agree that the entire nursing educational system is in need of reform. The driving force behind this reform is the realization that successful employment and citizenship require different knowledge and skills than in the past (Duch, Allen & White, 1998:1). Thus, in addition to their traditional role as purveyors of discipline of a specific knowledge, nurse educators are being urged to adopt classroom methods that help students to develop the competencies identified as necessary for success including, the ability to:

- Critically think, analyse and solve complex real world problems;
- find, evaluate and use appropriate learning resources and evidence for best clinical practices;

- work cooperatively in teams and small groups;
- demonstrate effective verbal and written communication; and
- use content knowledge and intellectual skills to become life-long learners.

PBL provides an environment for promoting these skills (Duch et al., 1998:I; Rideout 2001:125; Rideout, England Oxford, Brown, Torthergill-Bourbonzias, Ingram, Benson, Ross, & Coates, 2002:5; and Tompkins, 2001:14). PBL is an educational approach that organizes curriculum and instruction around carefully crafted "ill-structured" problems. Students gather and apply knowledge from multiple disciplines in their quest for solutions. Guided by teachers acting as cognitive coaches, they develop critical thinking, problem solving, and collaborative skills as they identify problems, formulate hypotheses, conduct data searches, perform experiments, formulate solutions and determine the best "fit of solutions to the conditions of the problem" (Haith-Cooper 2000:278). Problem-based Learning enables students to embrace complexity, find relevance and joy in their learning, and enhance their capacity for creative and responsible real-world problem-solving (Haith-Cooper, 2000:269; and Delva, Woodhouse, Hains, Birtwhistle, Knapper & Kirby, 2000:3).

This approach in contrast to a traditional teacher centred approach wherein the key facts and concepts are presented to the students with PBL the students engage in self-directed learning. Alessio (2004:26) identified the following key features:

- Learning in context, where real life problems are presented;
- elaboration of knowledge through social interaction, where the students work together in small groups; and
- meta-cognitive reasoning and self-directed learning with independent thinking and long-life learning. In the process of solving problems, students develop knowledge of theory, practice and facts, concepts and appropriate inquiry strategies related to the initial problem.

Having adopted PBL, the Department of Nursing Sciences (DNS) at the Mafikeng campus of North-West University (NWU) require a paradigm shift in undergraduate education and emphasise that a collaborative effort is required for effective

implementation of PBL. Thus, the need for development of a collaboration model for effective implementation based on the opinions of nurse educators, nurse managers and preceptors is important.

The benefits of implementing PBL reinforce the importance of the Department of Nursing Sciences' resolve of strengthening the North-West University resources base by developing a collaborative model with other Institutions of Higher Learning. For example, collaboration with Nursing Education Department is seen as one of the critical mechanisms for collaboration in the effective implementation of PBL in nursing education. The needed collaboration is influenced by both changes occurring in the health care system and limited availability of resources, namely financial and human.

Collaboration with key stakeholders, as well as Centres of Excellence in PBL and health care service providers, especially where students are placed for clinical learning, will enhance the mentoring and empowerment of the students and nurse educators as well as nurse managers and other preceptors in PBL. For this reason, the development of a collaboration model for the implementation of PBL based on the nurse educators', nurse managers' and preceptors' opinions is necessary. In a collaborative model, partners share knowledge, expertise and resources. Thus, nurse educators need not remain in isolation while learning to use PBL. Collaborative efforts and sharing of resources and success are mandatory in educating nurses for the 21st century (Medley & Horne, 2005: 33).

Internationally, differences of opinion exist between nurses 'in service' and nurses 'in education' with respect to new competencies for graduate and diploma registered nurse preparation. Greenwood (2000:17) states that the service sector nurses complain that new graduates (of either diploma or degree programme) are inadequately prepared for clinical practice in that they are "deficient" in certain skills. Nurse educators state that expectations of nurse clinicians are unrealistic given the aims of contemporary education of preparing "practitioners who are reflective and committed to lifelong learning" (Greenwood, 2000:17). Given this scenario and the tension between academic and clinical nurses, it becomes imperative to investigate and develop a collaborative

model for effective implementation of PBL within the nursing education context. Collaboration is basic to academic enterprise. Whether it is coming together to write a paper, evaluations of students or more complex relationships constructed around shared research facilities or teaching programs, most academics will immediately recognize collaboration as endemic to the academy (Cape Higher Education Consortium, 2004:3).

Several publications describe a variety of collaborative models: inter-professional (Furber, Hickie, Lee, Mcloughin, Boggis, Sultin, Cooke, Wakefield, 2004:258; Reynold, 2004:34; and Hale, 2003:122), and collaborative learning, yet, few explored inter-institutional and intra-institutional collaboration in implementing PBL in nursing, especially in the South African context. The inter-professional collaboration in implementing PBL resulted from the health care system that requires provision of collaborative and seamless services (Furber et al., 2004:259). This has resulted in a need for the development of a model of collaboration for implementing PBL in nursing education. Also, it is necessary that the model developed be based on the opinions and perceptions of nurse educators, nurse managers and preceptors.

Other models of collaboration in nursing education exist amongst colleges and universities in implementing collaborative partnerships in Ontario, Canada with the aim to design, disseminate and evaluate a faculty development programme in nursing (Matthew-Maich et al., 2007:75) and an amalgamation of colleges for implementation of PBL (Drummond-Young, Brown, Noesgaard, Lunyk Child ,Maich, Mines & Linton 2010:152). The dearth of literature on collaboration with Centres of Excellence in implementing PBL nursing education and clinical services in South African context has been found. For this reason, the development of a collaboration model in a South African context based on the opinions of the nurse educators, nurse managers and preceptors is very critical. According to Souers, Kauffman, McManus and Parker (2007:392), collaborative partnerships between and among academia, nursing practice and other key stakeholders can help bridge the gap by providing opportunities to share perceptions, creating an environment of shared knowledge and learning as well as

networking opportunities, leading to further enabling preparation for potential future staff.

The nurse's role in rendering health care supersedes that of any other professional because nurses form the backbone of the health care delivery in South Africa (NEPAD 2010:4). For every patient, before they are seen by any other professional or health care practitioner must have been seen by a nurse; hence the competencies from PBL point of view are essential. The ability to teach critical thinking and patient advocacy is limited when nurse educators work in isolation in educational settings. If nurse educators, managers and preceptors were to become role models in collaboration, a different paradigm of education and practice will be created. It is, therefore, essential to develop a collaboration model to facilitate implementation of PBL in nursing education.

South African Qualification Authority (SAQA) stipulates the Critical Cross Field Outcomes (CCFOs) as a set of competencies to be achieved for all curricula at any educational institution. Critical Cross Field Outcomes refer to those generic outcomes that inform all teaching and learning (SAQA, 2005:13). Examples of CCFOs include: To work effectively within a group or team; identify and solve problems effectively using critical thinking and decision making; organize and manage responsibly; communicate effectively; use technology and science effectively respecting the environment just to mention but a few. To ensure that the CCFOs do not remain visionary benchmarks, attempts should be made by educational institutions to operationalize them by embedding them in the curriculum activities (Lombard & Grosser, 2008:561).

Based on Critical Outcomes, Outcomes-Based Education (OBE) was introduced in South Africa to ensure that graduates possessed competencies required in the labour market. PBL has been identified as one of the possible methods of learning and achieving the CCFO and therefore adopted by departments of nursing of the following universities: North West University (Mafikeng), Venda, Kwa Zulu Natal, Walter Sisulu and WITS universities. Thus, exploring the nurse educators, managers and preceptors' opinions regarding collaboration to effectively implement PBL in nursing education has been found necessary.

Not only has the government policy declared nurses as the backbone of health care system, but also that there has been a major shift in health care from mainly Hospital Based to Primary Health Care (PHC) (Health System Trust 1999:1 and NEPAD: 2007: 5). In South Africa, PHC is mainly offered by professional nurses and Nursing Education Institutions (NEIs) are responsible for educating nurses who are competent to provide PHC at both rural and urban sites. To develop nurses with competencies consistent with those responsibilities, a paradigm shift from traditional teacher centred methods to learner centred modalities including PBL is mandatory for NEIs. The development of collaborative model for effective implementation of PBL has been found necessary.

1.3 Problem Statement

The unresolved challenges arising from the introduction and implementation of Problem Based Learning (PBL) teaching method in the Department of Nursing of the North-West University (NWU) Mafikeng Campus require the development of a collaborative model to effectively implement this teaching method.

When the Department of Nursing Sciences (DNS) introduced Problem Based Learning (PBL) in 2002 for the third and fourth year students, it created some needs across several levels in the department.

- At the departmental level, there was lack of coordination for class teaching, clinical learning, mentoring, sharing of information, and lack of capacity as some educators were not trained in PBL.
- At student level, an exploratory study was first conducted in 2008 (Rakhudu, 2008:68) on the three groups of students from disadvantaged backgrounds, determining their opinions with the introduction and implementation of PBL. Despite their disadvantaged background, the responses of the students indicated that:
  - ✓ They found the use of PBL beneficial to them and wished that PBL should not be discarded but strengthened.

- ✓ They recommended further that all the users of PBL such as facilitators, nurse educators, nurse managers and preceptors be prepared to effectively understand the implementation of the teaching method.

In addition, the Department of Nursing Sciences External Program Evaluation (EPE) also found in 2008 similar challenges mentioned above and recommended that:

- PBL needs to be introduced at all levels of training: students, facilitators, nurse educators, nurse managers, preceptors and all staff members involved in the nursing education;
- Collaboration with other centres offering PBL should be developed; and
- Improvement of clinical learning by accompanying follow-ups of students by nurse educators and change of attitudes of professional nurses towards the students.

For these reasons, the development of a model of collaboration based on the opinions of these stakeholders in nursing education is deemed critical to deal with the challenges impeding the effective implementation of the PBL within the Department of Nursing of the North West University's Mafikeng Campus.

1.4 Research Questions

LoBiondo-Wood and Haber (2010:96) emphasise that researchers need questions to guide them in their projects. This can be achieved by setting a guiding hypothesis, followed by sub-questions, or by making use of 'grand tour' questions.

In a qualitative study, the researcher does not embark on research with a definite hypothesis as stated by (Creswell, 1994:96; and Mouton, 1996:2). For this reason, in this study, 'grand tour' questions seemed to be more appropriate. While the questions were general, they served the purpose of controlling the extent of the enquiry. The 'grand tour' questions that guided this study included the following:

1. *"What are the nurse educators, nurse managers and preceptors' opinions on collaboration in implementation of PBL in nursing education?*
2. *What are perceptions of nurse educators, nurse managers and preceptors regarding the need of collaboration in implementing PBL in nursing education?*

3. *What are the opinions of the key role-players in collaboration in implementing PBL in nursing education?*
4. *What are the opinions of key role-players regarding the benefits of collaboration in implementing PBL in nursing education?*
5. *What are factors contributing to a successful collaboration in implementing PBL in nursing education?*
6. *What are the barriers that may hamper collaboration in implementing PBL in nursing education?*

Along with the major questions, there was a series of prompt, additional questions derived from the literature that the researcher believed were important, and that the participants would cover, but they were there to remind the researcher in case the material was not mentioned.

1.5 Purpose and Objectives of the Study

The purpose was to develop a collaboration model for effective implementation of problem based learning in the nursing education.

Objectives of the study

The following are specific objectives of this study:

- To explore and describe the opinions of the nurse educators nurse managers and preceptors regarding collaboration in implementing PBL in nursing education;
- To measure and describe the opinions of nurse educators, nurse managers and preceptors regarding collaboration in implementing PBL;
- To explore the emerging concepts derived from data analysis;
- To develop a conceptual framework for model development;
- To develop a collaborative model for effective implementation of PBL in nursing education; and
- To develop guidelines for operationalization of the model.

1.6 The Significance of the Study

The outcome of the study shall inform the nursing profession in policy development for best practices in PBL and curriculum development, which will produce market-related practitioners as well as further research.

1.7 Paradigmatic Perspective

According to Mouton (1996:21), a paradigm refers to the commitment of the researcher to the compilation of the assumptions that are meta–theoretical, ontological, theoretical, epistemological and methodological in nature. It is a set of beliefs about the nature of the relationship between humans and the environment (Guba, 1990:18). Included in this study are meta-theoretical assumptions, theoretical statements and methodological assumptions.

Meta-Theoretical Assumptions

These assumptions are not scientifically testable (Mouton & Marais, 1990:21) but form the basis of the present research. The Meta-Theoretical assumptions of this study are collaboration, environment (PBL teaching) and nursing education and its context.

The focus of the study is on the development of a collaborative model for effective implementation of PBL in nursing education. To overcome the limited resources in the provision of nursing education for pre-registration program collaboration is essential. Collaboration is necessary for Higher Education Institutions (HEI) for successful implementation of PBL as a resource intense strategy of learning. Faced with the limited resources and increasing demand to produce more nurses to meet the country's needs, collaborative nursing education approaches including implementation of PBL is crucial.

This belief in collaboration is based on both Sepedi and Setswana (South African indigenous languages) phrases. The Sepedi phrase reads thus: *"Tau tša hloka seboka di fenywa ke narè e hlotša"*. This literally means: *"If lions are not collaborating in their hunting endeavour, they are defeated by a limping or ailing buffalo"*. The Setswana

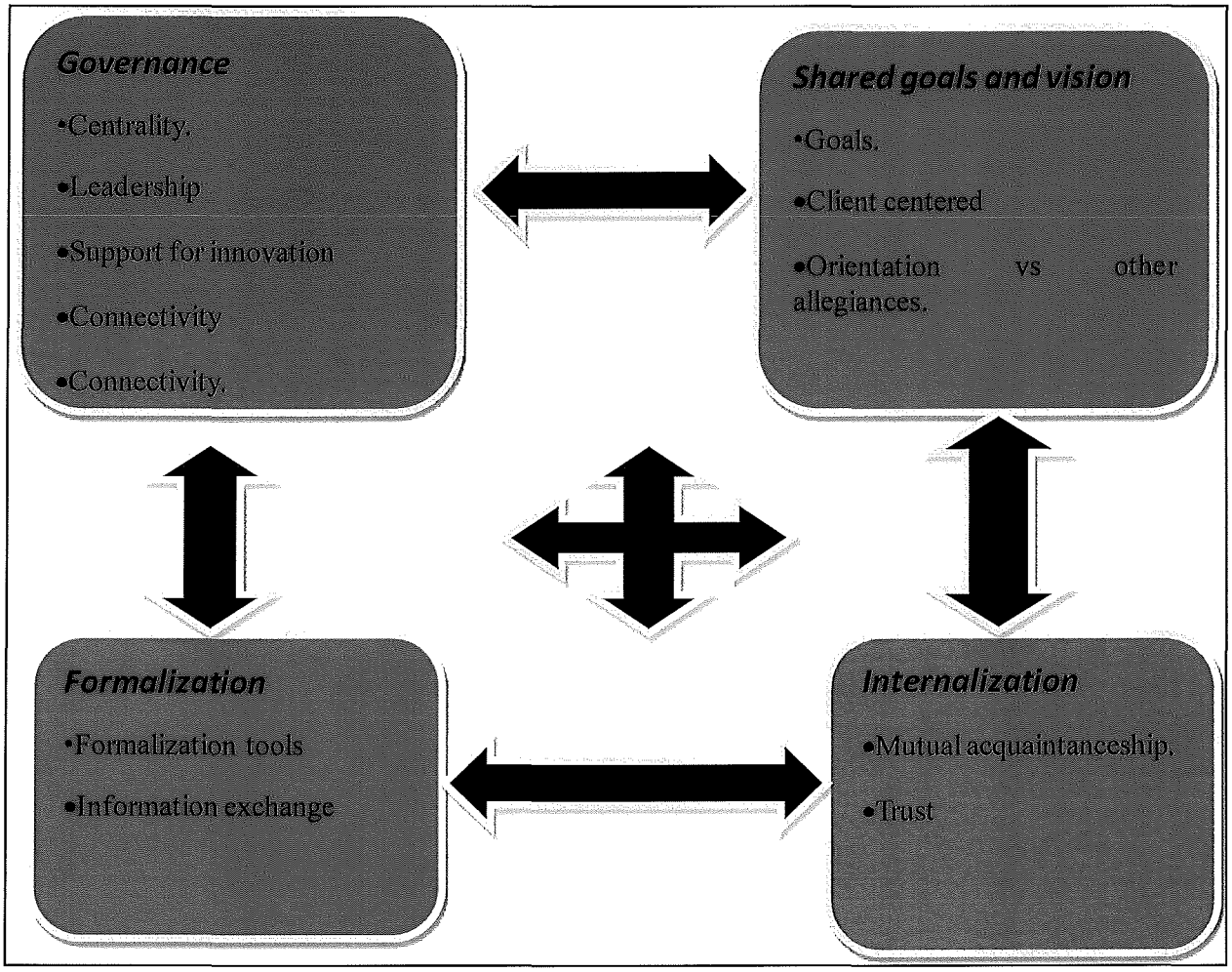
phrase reads as follows: "*Kgetsi ya tsie e kgonwa ke go tshwaraganelwa*". This literally means "Carrying a heavy bag of harvested locusts requires collaborative effort." The two phrases imply that "*unity is strength'* and collaboration is effective in any endeavours. On that note, one may say collaboration is a very beneficial and results in mentoring, empowerment and effective utilization of resources and expertise.

1.8 Conceptual Framework

This section clarifies the conceptual framework and paradigm that were adopted to guide this research study. The framework has been used to guide the decisions to be taken about data collection, data analysis and data review, how data were understood and critiqued.

The theoretical assumption upon which this study is based is D'Amour, Goulet, Labadie, Martín-Rodriguez, and Pineault's (2008:2) four dimensional collaborative model in health care settings. The model suggests that collective action can be analysed in terms of four (4) operationalized dimensions. According to D'Armour et al. (2008:2), two of the dimensions involve relationships between individuals; and the other two involve organisational settings that influence collective action. The model's focus is on the processes that involve stakeholders' interactions and social exchange (Pawan & Ortloff, 2011:465) and structural and organizational context in which collaboration takes place. In this model, the two sets are identified as interactional and organizational complements and modify each other (D'Armour et al., 2008:2). Figure 1.1 depicts the overview of the model.

Figure 1.1: Dimensional collaboration model (D'Armour et al., 2008)



As the figure shows, the four dimensions are interrelated and influence each other. The first two dimensions of the model (finalization and internalization) provide insight into collaboration through interactional factors, and the remaining two (governance and formalization) provide a perspective on organizational mechanisms impacting collaboration. D'Amour et al., (2008:3) describe ***finalization*** as the degree to which professionals share common goals and vision. ***Internalization*** refers to the professionals' development of mutual trust and respect, as well as knowledge of each other's contributions. Governance and formalization constitute structural and organizational factors that define the context in which collaboration takes place (Pawan & Ortloff, 2011:465; and D'Amour et al., 2008:3). ***Governance*** refers to leadership, individual or collective, coming from within or outside of the organization or institution

(Pawan & Ortloff, 2011:465; and D'Amour et al., 2008:3). ***Formalization*** is the explicit articulation of norms of conduct by leaders, administrators and institutions for the purpose of regulating and stabilizing collaborative actions. These include formal structures like protocols, procedures and descriptions of tasks in manuals, on posters, and through other guiding materials (Pawan & Ortloff, 2011:465; and D'Amour et al., 2008:3).

The four dimensions are interrelated and influence each other. The relational dimensions are, namely:

- ***Shared goals and vision***, which refer to the existence of common goals and the appropriation by the partners, the recognition of divergent motives and multiple allegiances and expectations regarding collaboration (D'Armour et al., 2008:4).
- ***Internalization*** refers to awareness by professionals of their interdependencies and of the importance of managing them, and which translates into a sense of belonging, knowledge of each other's values, discipline and mutual trust.
- ***Formalization*** is defined as the extent to which documented procedures that communicate desired outputs and behaviours exist and are being used. Formalization clarifies expectations and responsibilities.
- ***Governance***, that is, the leadership functions that support collaboration. Governance gives direction to and supports professionals as they implement innovations related to intra-professional and inter-organizational collaborative practices.

Together, these four dimensions and the interaction among them capture the processes inherent in collaboration. They are subject to the influence of external and structural factors such as resources, financial constraints and policies. Though these factors are beyond the scope of this study, they must be taken into account as determinants of collaborative processes (D'Armour et al., 2008:4). Technically, collaboration is a process of participation through which people, groups and organizations work together to achieve desired goals and results. When beginning the journey, it is critical that all existing and potential members share the vision and purpose. It is this commonality that

provides the motivation to bring members of the nursing profession together to focus on effectively implementing PBL in nursing education.

It is assumed this Collaboration Framework can guide individuals and practitioners who are either starting collaborations, or need help in strengthening an existing collaboration. This framework was used to guide this study to achieve clearly articulated collaboration model for effective implementation of PBL in nursing education. This Collaboration Framework was useful guide to individuals and practitioners who are either starting collaborations, or need help in strengthening an existing collaboration.

Methodological assumption

In this study, methodological assumptions shape the research objectives in their context and influence the research design. Again in this study, it also meant exploring and describing the nurse educators, nurse managers and preceptors' opinions regarding collaboration in implementing PBL in nursing education. A model of collaboration will be subsequently developed for effective use of PBL within the nursing education.

1.9 Conceptual Definitions

For the purpose of clarity, the key concepts used in the research are defined as follows:

- **Problem Based Learning** (PBL) is a strategy suitable for all programmes despite the student's previous educational background. This is based on the assumption that students are viewed as individuals who have the potential for self-directed learning by using coaching, facilitation and provision of learning opportunities that enhance both classroom and clinical learning, as well sharing and gaining knowledge from each other. PBL is a concept drawn from well-resourced Centres of Excellence, but with collaboration among the key stakeholders in nursing education, it can be effectively implemented in the nursing education context.
- **Nurse educators:** A nurse educator is a dynamic human being responsible for coaching, guiding and facilitating student learning and professional

development resulting in effective functioning within collaborative teams upon graduation.

- **Collaboration** is working together. *Collins English Dictionary* (2009:288) defines collaboration as "working jointly with others especially in an intellectual endeavour". For the purpose of this study, collaboration refers to collaborative partnerships where key stakeholders in nursing education are working together for joint planning, implementation and evaluation of PBL.
- **Opinion:** *Collins English Dictionary* (2009:546) defines opinion as:
  1. A belief or judgment that rests on grounds insufficient to produce complete certainty.
  2. A personal view, attitude, or appraisal.

  In this study, '*opinions*' refers to judgement people have on collaboration in implementing PBL in nursing education. In this study, belief and judgement of nurse educators, nurse managers and preceptors on collaboration in implementing to PBL form the opinion.
- **Nursing Education Institution (NEI)** refers to post-secondary education institution which offers nursing programs and qualifications. In this study nursing education institution refers to the tertiary learning institutions offering PBL in nursing education for pre-registration nursing programme.
- ***The Nursing Department*** is a unit within the University which offers nursing programmes identified on the organizational **structure** with a group of lecturers assigned for teaching and learning purposes.
- **Problem-Based Learning (PBL):** PBL is any learning environment in which the problem drives the learning. That is, before students acquire knowledge they are given a problem to solve as recommended by (Barrows, 1996:134; and Wood, 2003:14). The problem is posed so that the students discover that they need to learn some new knowledge before they can solve the problem. In this study, PBL is a teaching learning strategy in which a problem is used to drive the learning process.

- **Student Nurse.** A student nurse is a person undergoing education or training in basic nursing (SANC, 1994:2.9(2)). In this study, a student is an individual registered for pre-registration nursing programme.
- **University.** A university is "an institution of higher education having authority to award bachelors and higher degrees, usually having research facilities; the buildings, members, staff, or campus of a University" (*Collins English Dictionary* 2006:1679). In this study, it refers to the universities offering PBL for pre-registration nursing education in South Africa.

1.10 Research Methodology

Design and method

A mixed method was utilized in this study. A mixed method involves the collection, analysis and integration of both qualitative and quantitative data in a single study. The goal of mixed methods research was to draw on the strengths and minimize the weaknesses of both types of research. Literature describes mixed method as an approach to inquiry wherein the researcher links in some way (e.g., merges, integrates, and connects) both qualitative and quantitative data to provide understanding of research problem (Creswell & Garrett, 2009:322; Schifferdecker & Reed, 2009:637; Creswell & Clark, 2007:21; Munhall, 2012:542; and Polit & Beck, 2010:285).

Research Approach

The exploratory sequential approach of mixed method was used in which the researcher commenced by conducting individual semi-structured interviews and focus group discussions with nurse educators, managers and preceptors to obtain their opinions or perceptions on collaboration in implementing PBL. The themes identified through analysis of interviews were used to develop questionnaires that were sent participants (Schifferdecker & Reed, 2009:638).

This approach was beneficial as it promoted triangulation in this study. Triangulation is a mechanism used to ascertain how the different methods check, validate and corroborate one another (Creswell & Clark, 2007:62). The researcher used analysis

from the two methods to generate complementary insights that together create a bigger picture about collaboration. The mixed method assisted the researcher to:

- Assist the development of one method from the other, using qualitative and quantitative approaches sequentially for the purpose of increasing construct validity;
- Complement the results using different methods for purposes of enhancing, elaborating, illustrating and clarifying the results. This assisted in description or application of the research findings; and
- Cross check and corroborate results using the different types of data (Schifferdecker & Reed, 2009:638).

The researcher focused on the "technique" of research and this is perceived as a "clean" way to view mixed method without being encumbered by philosophy or other aspect of research (Schifferdecker & Reed, 2009:638). The researcher was mindful in development of quantitative tool from qualitative data not to try to cover every aspect revealed during qualitative analysis. A balance was struck between the overall question and the purpose of the instrument and the time required to complete it as suggested by Schifferdecker and Reed (2009:638). In this study, the researcher used semi structured individual interviews and focus group discussions to illicit information in order to achieve understanding of the participants' opinions and their points of view on collaboration for the development of collaborative model of effective implementation of PBL in nursing education.

Research Process

The research process consisted of two phases, namely; Phase 1: Exploration and description of the opinions of nurse educators, nurse managers and preceptor and Phase 2: model development

- It is useful to explore a phenomenon and also to expand on the quantitative findings; and

- It makes qualitative study more acceptable to the research advisors, committee or community well versed in quantitative and that may be unfamiliar with the qualitative approaches as recommended by Creswell (2009:221).

The following are the limitations of this design:

- Sequential exploratory design is time consuming as it requires substantial length of time to complete qualitative and quantitative data collection.
- It requires careful decisions about which findings in the initial qualitative phase would be focused on in the subsequent quantitative phase (Creswell, 2009:221).

Table 1.1: The description of the two components of the exploratory mixed method

Table 1.1: Components of the exploratory mixed method

Component.	Qualitative Method.	Quantitative method
Type	Core	Supplementary
Purpose	Explore and explain the opinions Qualitative research is concerned with finding the answers to questions which begin with: Why? How? In what way?	Used to supplement the qualitative component by quantifying the descriptions Quantitative research, on the other hand, is more concerned with questions about: how much? How many? How often? To what extent?
Design	Explorative contextual and descriptive approach	Descriptive survey
Population and sample	Nurse educators from institution offering PBL in RSA and nurse managers from clinical facilities where students are placed for PBL in North West Province of South Africa. Three out of five universities were purposively invited to participate	All the nurse educators in the five universities offering PBL education in pre-registration programme and the nurse managers in North- West Province clinical facilities where PBL students are placed for learning
Data collection method	Individual semi structured interviews and focus group discussion Use of audiotapes and field notes	Self-administered questionnaire based on the themes from the qualitative component and literature. Questionnaires were sent to participants.
Data analysis	Transcribing Coding	Use of SPSS 20 Descriptive , comparative and inferential statistics
Data presentation	Themes, categories and sub categories and quotes.	Frequencies, tables and graphs

Phase 2: Model Development

This phase consisted of two stages, namely: Concept Analysis and Model Development

Stage 1: Concept Analysis

This stage involved conducting concept analysis according to the Rodgers and Knalf's (2000:80) Evolutionary Method. The purpose was to clarify the concept collaboration according to the opinions of nurse educators, nurse managers and preceptors. This phase was preceded by empirical findings and concept analysis following Rogers and Knalf's steps of Concept Analysis:

Table 2.2: Steps of Concept Analysis

1. Identify the concept of interest **2. Identify surrogate terms and relevant uses for the concept** **3. Identify and select an appropriate realm for data collection**
4. Collect data relevant to identify the: **(a) attributes of the concept; and** **(b) the contextual basis of the concept including interdisciplinary socio-cultural and temporal variations**
5. Analyse data regarding the above characteristics of the concepts **6. Identify an exemplar of the concept, if appropriate** **7. Identify implications hypotheses and implications for further development of the concept** **8. Identification of hypothesis implication for further development**

Source: Evolutionary concept analysis activities (Rodgers & Knalf, 2000:85)

Stage 2: Model Development

According to Chinn and Kramer (2011:106), model development is "a creative and rigorous structuring of ideas that projects a tentative, purposeful and systematic view of phenomena". In this phase, the researcher focused on developing the collaboration model as the theoretical basis for implementation of PBL in nursing education. Chinn and Kramer (2011:106) identified six (6) elements that are critical in model description, namely, purpose, concepts, and definitions of concepts, model structure, assumptions and model evaluations. These were used to guide the research.

The evaluation of the model was carried out by asking the following questions based on (Chinn & Kramer, 2011:135-136) identified elements:

- ✓ *How clear is the model?*
- ✓ *How simple is the model?*
- ✓ *How general is the model?*
- ✓ *How accessible is the model?*
- ✓ *How important is the model?*

In other words, the model was evaluated for clarity, accessibility, simplicity and importance.

1.11 Ethical Measures

Ethical issues warrant consideration in any type of human research to ensure protection of participants' rights (Burns & Grove, 2009:200; and Parahoo, 2007:301). Creswell (2009:162) emphasized the importance of respect to the rights, values, wishes and needs of the participants. In order to ensure that this was accomplished, the following ethical measures were adopted for the study:

Permission to conduct research: A written permission to conduct research was obtained from the relevant Universities' Faculties of Health Sciences (See attached annexure).

Ethical clearance to conduct the research was obtained from North-West University.

Informed Consent: This entailed the issue of 'participants fully understanding the purpose and implications of their participation in the research' as indicated by Green and Thorogood (2009:288). It is vital that the participants have enough information about risks, benefits and the purpose of the study in order to make informed decisions. In this study, the participants were informed and asked to sign a consent form, and a written consent was obtained from the Programme Coordinator.

Voluntary Participation: Participants were free to choose to partake in the research study. No coercion or pressure was exercised. The participants were free to leave the study at any chosen time.

Confidentiality: Confidentiality was maintained during data collection and this important norm was announced at the beginning of each and every interview. Names of individuals were not used and numbers were assigned to the participants during data collection and analysis.

Beneficence: Beneficence means the duty to do or to promote good (Muller, 2009:67). In this study, no harm was done to participants. The study further aimed

at promoting good for nurse educators, nurse managers, preceptors, students and health care consumers.

Non-maleficence: Non-maleficence means the duty not to inflict harm (Muller, 2009:67). No participants were subjected to any harmful effects; and their identities were protected through anonymity and confidentiality.

Justice: Justice refers to the researcher's responsibility to select and treat participants fairly and equally during the course of the study (Muller, 2009:67). Nurse Educators from universities offering PBL for pre-registration nursing education and nurse managers and preceptors where students are placed for clinical learning were selected as participants in the study.

1.12 Measures to Ensure Trustworthiness, Validity and Reliability

To ensure the trustworthiness in this study, the researcher adopted the model of Lincoln and Guba as described by Krefting (1991:212). This model was created in order to promote confidence in the finding of qualitative research. This model describes the following criteria recommended for qualitative studies, which ensure the rigor of the researcher without compromising the relevance of the study (Polit, Beck & Hungler, 2006:312).

- **Credibility**

This refers to confidence in the truth of the data. Lincoln and Guba described the two aspects of credibility, namely, carrying out the investigation in a way that believability is enhanced and taking steps to demonstrate (Polit et al., 2006:313). Within this study, the researcher adopted the following strategies to ensure the truth value:

- ✓ Establish a trusting relationship with the nurse educators, managers and preceptors to ensure relaxation during interview;
- ✓ Data analysis was completed by both the researcher and an independent coder, and discussion in order to reach consensus on the data analysis;

- ✓ Literature control was adhered to and assisted the process of validating the findings in this research;
- ✓ Reflect other multiple realities as revealed by the research participant; and
- ✓ Lastly, the truth value that Lincoln and Guba (in Polit et al., 2006:313) refer to as credibility was obtained from observing human opinions as they are lived by the participants.

- **Transferability**

In Lincoln and Guba's framework, transferability refers to the extent to which findings from the data can be transferred to other settings or groups (Polit et al., 2006:316). In this study, it was necessary to ensure that findings fitted into context outside the research, but it was the responsibility of the people wanting to fit the findings into another situation.

- **Neutrality**

It is defined as 'freedom from bias in research procedure and results' (Poggenpoel 2006:380). While the possibility of a total absence of bias is arguable, Lincoln and Guba (in Krefting, 1991:217) suggest that conformability can be used to increase neutrality. Conformability refers to how far an outsider can follow logic in the findings and how explicit the various perspectives of the participants have been made. Conformability in this study was ensured by availing the research raw data, field notes and data analysis documents for auditing.

In this study, the following steps were undertaken to increase neutrality:

- **Literature control:** The findings were compared with other researchers and literature. In qualitative research, the literature control is used inductively, so as not to create prematurely influence the thoughts of the researcher and create pre-conceived notions (Creswell, 1994:21; and Patton, 1999:163). The findings of the qualitative study were compared with literature, in order to confirm them (Creswell, 1994:24) and assisted in placing them within an education context. Similarities and differences were identified between categories and sub-

categories and existing literature in order to evaluate the significance and meaning of the findings, once the main categories had been identified and analysed, the central concept/s were identified and further analysed in the next steps of the theory generative design.

- **Member-checking**: The categories/themes found in data were checked with member/participants. To further ensure neutrality of this study, the researcher has made all raw data, field notes, data analysis documents, the interpretation of categories, as well as interview schedules available for auditing.

1.13 Limitations of the Study

Burns and Grove (2009:707) and LoBiondo-Wood and Haber (2010:580) describe limitations of the study as theoretical and methodological restrictions or weaknesses that may decrease the generalizability of the findings. The limitations of this study included the very limited ability to generalize the results because the sample is a non-probability, non-random and bias may increase with greater heterogeneity of population. However, the researcher selected the homogeneous members of the group. The study included three Universities and three Provincial Hospitals in the North West Province where PBL students are placed for clinical learning and their clinical sites, further limiting generalizability to other universities implementing PBL in nursing education or using collaborative models.

1.14 Dissemination of the Result

The results of this study will be disseminated in the following:

- presentation of papers at international and national conferences, seminars and workshops;
- publish in peer reviewed and accredited articles; and
- presentations to the participants and important key role players in nursing education.

1.15 Outline of the Research Report

The research report consists of the following chapters:

Chapter 1: General introduction and orientation to the research

Chapter 2: Research design and method

Chapter 3: Discussion of results from the qualitative component and literature control

Chapter 4: Results from the quantitative component

Chapter 5: Discussions of merged results

Chapter 6: Description of concept analysis, classification and model development

Chapter 7: Guidelines for operationalization of the model

Chapter 8: Evaluation of the model, justification, limitations, conclusions and recommendations

1.16 Summary

This chapter describes the background of the research, rationale, problem statement, goals and objectives of the study. Key concepts have been clarified; and research design introduced, which consist of the philosophical foundation, research approach, and methodology, measures to ensure validity, reliability, trustworthiness and ethical considerations.

CHAPTER 2

RESEARCH METHODOLOGY

2.1 Introduction

In the previous chapter, an overview of the planned study was provided, outlining the rationale and problem statement, the purpose of the research; clarification of the key concepts; research design and method. This chapter explains and describes in detail the research process that was designed to meet the objectives of the study. This study was designed using a mixed methods approach. It involved an exploratory sequential approach wherein both qualitative and quantitative data collection and analysis techniques were conducted. The study commenced with an exploratory descriptive qualitative study, followed by a descriptive survey. Finally, the results were merged in order to draw the conclusions of the study.

The design chosen for this study was explorative theory mixed and generative method in nature, and based on a constructivist paradigm. The research process began with the researcher selecting a theoretical framework, choosing a design and strategy of inquiry to operationalize the philosophical beliefs underpinning the research. The strategy of inquiry also influenced the choice of methods of collecting and analysing data as proposed by Denzil and Lincoln (1994:14).

This chapter explains in detail the research process that was followed in this study, starting with the statement of the purpose, objectives and proceeding to describe the conceptual framework of the study that influenced the choice of theory generative, and qualitative dominant mixed-method design of inquiry. In turn, these decisions determined the choice of research methodology and the means of data verification. Finally, the ethical aspects relevant to this study are given.

2.2 Purpose of the Research Study

The purpose of this theory generating mixed-method design was to nurse describe nurse educators, managers and preceptors' opinions on collaboration for implementing PBL and to develop a collaborative model for effective implementation of PBL.

The objectives derived from this purpose are outlined as follows:

- To conduct an exploratory sequential mixed-method study using qualitative interviews and quantitative surveys to explore and describe the experiences of nurse educators in implementing PBL, as well as nurse educators, nurse managers and preceptors' opinions and opinions on collaboration in implementing PBL;
- To develop and describe a collaboration model for effective implementation of PBL;
- To identify the guidelines for the 'implementation of the model; and
- To make recommendations for further research.

The reason for undertaking this study was to identify best strategies and collaborative efforts for helping the under-resourced nursing departments in South African education institutions to effectively implement PBL which has be shown to be a highly beneficial and learning strategy enhancing critical thinking. This study investigated nurse educators, nurse managers and preceptors' opinions on collaboration in implementing PBL with a view to develop a collaboration model which will act as a basis for the effective implementation of PBL.

2.3 Research Design

Polit and Hungler (1999:238) define research design as "an overall plan for collecting and analyzing data". In qualitative approach, the design is "more fluid" (Polit, Becker, & Hungler, 2006:239). In this context, a mixed method design that is qualitative dominant, descriptive and contextual was followed. According to De Vos and Fouche (1999:81), a theory generative design is both a design and a data-gathering method that follows systematic steps to inductively produce a theory from data collected on collaboration in

implementing PBL. McKenna (1997:197) refers to this as the "research than theory" approach, while Struass and Corbin (1990:22) describe it as a means of synthesizing and integrating knowledge, which is called Grounded theory.

2.3.1 Mixed Method Design

A mixed method research is a research approach in which a combination of qualitative and quantitative approaches in a single study in order to obtain and understand the breadth and depth of the area of investigation as well as corroborating the results (Schifferdecker & Reed, 2009:637; and Clark & Creswell, 2007:21). In a mixed method approach, both qualitative and quantitative research techniques, for example, data collection and analysis are used to provide the strengths and weaknesses of each (Munhall, 2012:542; and Creswell & Garrett, 2009:322). The mixed method was developed from the fact that neither a qualitative nor quantitative method is sufficient to capture the details of the study situation.

According to Johnson and Onwuegbuzie (2007:114), any kind of research, qualitative or quantitative has both strengths and weaknesses. For example, quantitative research has some strengths in terms of credibility and transferability, however, knowledge produced from quantitative findings maybe too abstract and general to apply to some specific local settings (Johnson; & Onwueguzie, 2007:114). Similarly, the qualitative results provide description and understanding of the research phenomenon, but the finding may not be generalized to other contexts and are also difficult to test hypotheses and theories. A combination of qualitative and quantitative methods is therefore necessary to offset the weakness of either approach (Munhall, 2012:542; Creswell & Garrett 2009:322; Schifferdecker & Reed, 2009:637; and Clark & Creswell, 2007:21).

The research study used an exploratory sequential mixed method design to explore and explain the opinions related to collaboration in implementing PBL. Mixed methods research is the processes and procedures for collecting, analysing and inferring both quantitative and qualitative data in a single study or in sequential studies, based on priority and sequence of information (Greene, Caracelli, & Graham, 1989:256,

Tashakkori & Teddlie, 1998:89; and Creswell & Clark, 2007:87). In this study, mixed method described by Munhall (2012:542) was employed, namely, "a design consisting of one complete method with additional supplementary strategy drawn from a second different method". It involved the use of qualitative and quantitative methods. In other words, a qualitative method with additional quantitative strategy was used to allow for measurement of some dimensions of collaboration in implementing PBL. The combination of qualitative and quantitative components in this study was essential to maintain rigor (Munhall, 2012:542; Creswell & Garrett, 2009:322; Schifferdecker & Reed, 2009:637; Polit & Beck, 2010:285; and Clark & Creswell, 2007:127).

This approach enhanced description, understanding or explanation of the phenomenon (collaboration) under the study and was conducted sequentially. The terminology and considerations involved in the use of mixed method design are discussed in table 2.1 as depicted in Munhall (2012:555).

Table 3.1: *Description and application of terms important in mixed method design. Adapted from Munhall (2012:555)*

Term	Description	Application in this project
Core component	The primary or main study in which the core method is used to address the research question. This phase of the research process is complete or scientifically rigorous and can therefore stand alone.	In this study, the core component is qualitative approach which was supplemented by quantitative approach to enhance description, understanding and explanation. The qualitative method with additional quantitative strategy was used to allow measurement of some dimensions of collaboration using a measurement tool borrowed from business discipline.

Supplementary component.	Strategy used to enhance rigor of the main component of the study.	In this study, quantitative approach will follow the core component (sequential). The supplementary component was incomplete in itself and cannot stand alone as it is regarded as complementary to the core component.
Theoretical drive.	The direction of the inquiry that guides the use of the appropriate mixed methodological core. The nature of the research question determines the theoretical drive.	The theoretical drive of this project is inductive qualitative design, which was followed by deductive quantitative approach. In this way the supplementary component will test conjectures by using quantification. This was done by quantifying characteristics of the sample and data from the core component.

In this study, the theoretical drive was inductive and qualitative and the supplementary component was quantitative which its primary role was to quantify descriptive of aspects of opinions of nurse educators, managers and preceptors on collaboration in implementing problem based learning. In this way, the supplementary component test conjectures by using quantification (Munhall, 2012:554). The main role of the supplementary quantitative design was to contribute to the "missing pieces" to the results of core component, namely, qualitative component. Given the fact that qualitative design was conducted first, a sequential method had to be employed.

In the sequential approach of the method, the steps completed are:

- Develop definitions for the codes;

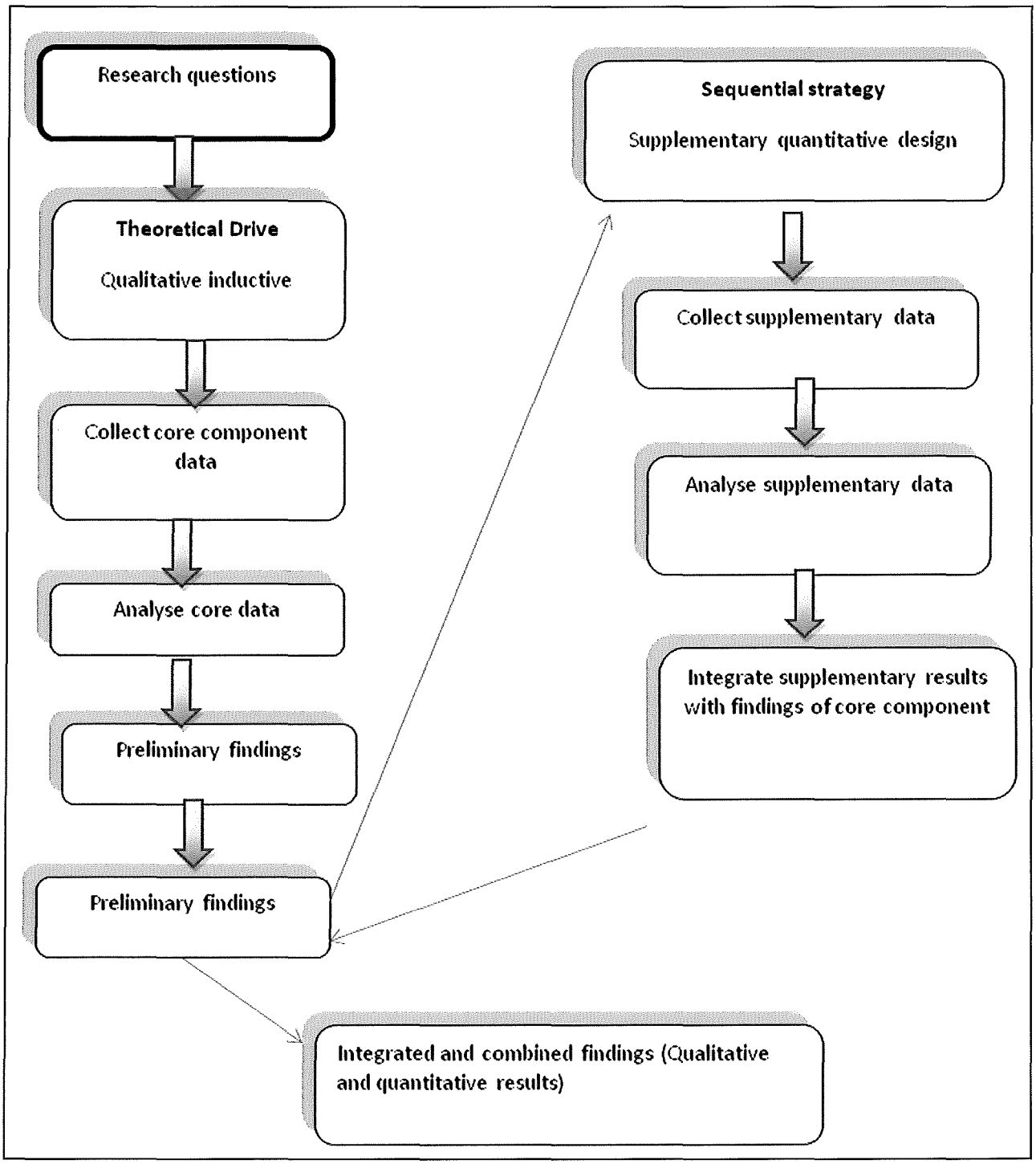
- Code the transcripts;
- Analyse the numerical data; and
- Incorporate the results of supplementary findings into quantitative results to enhance conclusions and implications (Munhall, 2012:550).

According to Clark and Creswell (2007:127), this approach is complementary and assists in elaboration, enhancement, illustration and clarification of the results from the qualitative component. These authors also state that this approach increases interpretability, meaningfulness, as well as validity and inquiry results by:

- Capitalizing on inherent method strength, and
- Counteracting bias in the method and sources of data.

Figure 2.1 depicts the process to be followed during implementation of this mixed method study.

Figure 3.1: *The process of mixed method (Adapted from Munhall, 2012:548)*



The study was conducted in two phases, namely, exploration of opinions of key role players regarding collaboration in implementing PBL and development of a collaborative model in implementing PBL. The preliminary results from the first stage of Phase 1 were helpful in designing data collection instrument for the supplementary component of this study conducted. The quantitative results were integrated into the results of the core components of the study.

The explorative phase was helpful in identifying the main concepts, theory development by means of concept definition, classification and generation of relationship statements in order to design a model for effective implementation of PBL.

2. 4 Research Process

The research process followed is described as follows:

2.4.1 Phase 1: Exploration of opinions and views on collaboration in implementing PBL

The first step of a theory generative design was concept identification which was generated from exploring the nurse educators, managers and preceptors' opinions on collaboration in implementing PBL and comparison of the findings and literature. This phase consisted of a sequential explorative mixed method design wherein a qualitative study was followed by quantitative component. A pilot study was conducted with a nurse educator in order to determine the suitability of data collection procedures and make changes, where necessary. The data collections in the main investigation consisted of semi-structured individual interviews and focus group discussions and followed by descriptive survey to collect supplementary data to complete the mixed method design. The data collection tool was piloted and the results of this pilot assisted in reducing the length of the tool and reduction of open ended questions. The outcome of *Phase 1* was the identification of main the concepts, which were then further analysed in *Phase 2*, in order to construct a model for effective implementation of PBL.

Step 1: Qualitative Design

The first stage of this study involved an exploratory descriptive qualitative study. It aimed to seek the understanding of the opinions of the nurse educators, managers, and preceptors regarding collaboration in implementing PBL in the South African nursing context. Data were collected by means of semi-structured individual and focus group discussions.

Attributes of qualitative design as the core component of mixed method

- *Interactive process*: Qualitative research is an interactive process (Creswell, 1994:145), the process itself being more important than the outcome or information obtained (Rossman & Rallis, 1998:5). It is through this process of seeing, hearing and reading (Rossman & Rallis, 1998:8) and looking, listening and engaging (Peackock, 1996:49) that the raw data are grouped and patterns formed, until themes emerge which explain the inner world of the participants. It is interactive, because the researcher is part of the process and actively engages with participants, as the main instrument in qualitative paradigm (Miller & Crabtree, 1999:164). It is, therefore, important for the researcher to be aware of the effects that her presence, experiences, feelings and beliefs have on the research process and how she/he in turn is affected by interaction. The researcher should use an open attitude in the research process (Streubert -Speziale & Carpenter, 2007:93).

- *Multiple views of reality*: According to literature (Denzil & Lincoln, 1994:6; and Burns & Grove, 2009:60) qualitative research portrays views of reality and therefore interpretive views of the world. There are more than one truth (Burns & Grove, 2009:60) and the researcher's point of view is only one of the many (Rossman & Rallis, 1998:10). For this reason, a qualitative researcher must make their roles explicit (Silverman, 2000:2). In this study, the researcher's role was to observe, interpret the collected data and separate her experiences and views from participants' and understand their opinions from their point of view and to also indicate that in the narratives.

• *Emergence*: Emergence is an important attribute of qualitative research. According to Silverman (2002:2) emergence means that the next step in the process follows the previous one and the research design therefore needs to be "soft" and flexible so that the changes in the procedure can be made as the details emerge and differing perspectives come into play. In this study, the aim was to gather data by means of individual in depth interviews and focus group discussions. Therefore, a pilot study was conducted in order to analyse the process and establish whether changes were necessary. For example, in-depth interviews in the pilot did not bring important issues according to the chosen conceptual framework; data collection method was changed to semi -structured interviews.

• *Semi-structured interviews* (sometimes referred to as focused interviews) involve a series of open ended questions based on the collaboration areas the researcher wants to cover (Bless & Higgson-Smith, 2006:104). The open-ended nature of the question defines the topic under investigation but provides opportunities for both interviewer and interviewee to discuss some topics in more detail. If the interviewee has difficulty answering a question or provides only a brief response, the interviewer can use cues or prompts to encourage the interviewee to consider the question further In a semi-structured interview the interviewer also has the freedom to probe the interviewee to elaborate on the original response or to follow a line of inquiry introduced by the interviewee (Bless & Higgson-Smith, 2006:104).

• *Qualitative Research is Inductive*: Qualitative research follows an inductive approach (Creswell 1994:145; and Field & Morse, 1985:11), which implies that specific information is gathered, from which themes and concepts are developed. In qualitative research, the researcher does not enter the field with preconceived ideas or theories. Theory is constructed as the research progresses (Creswell, 1994:143). In this study, specific data gathered during the interviews, relationships and patterns was identified and discussed with comparison to literature.

- *Qualitative research is descriptive*: According to Creswell (1994:168), the descriptive nature of qualitative research means that data are presented through the medium of words and not statistical methods. In this study, the aim is to describe the opinions of key role players to enable the "telling" of nurse educators, managers and preceptors own opinions on collaboration in implementing PBL. Strauss and Corbin (1990:22) state that it is the responsibility of the researcher to provide accurate description of data gathered, and the following should also be described:
    - ✓ Opinions of nurse educators on collaboration in implementing PBL;
    - ✓ the structure and process of the collaborative model for effective implementation of PBL; and
    - ✓ implementation guidelines to operationalize in the model.

- *Contextual design*: Context represents the location of the phenomena to be studied. Implied too are specific conditions which may arise and applicable to the actions, time, space and environment. According to Holloway and Wheeler (2009:192), context is only valid within the time and context specified. Consequently, this study is bound by exploring and describing the opinions of the nurse educators in implementing PBL.

- *Exploration nature*: Qualitative research is exploratory in nature (Mouton & Marais, 1990:43) in that it aims at generating meaning from situations about which relative little is known and to gain new insights into the phenomenon. In South Africa, literature on the opinions of nurse educators, managers and preceptors in implementing PBL could not be located and more insight had to be gained before any collaboration can be achieved.

Reasoning strategies

The process of theory development requires the use of reasoning strategies including analysis, synthesis, deduction and induction. Poggenpoel (1998:336) is of the opinion that reasoning strategies "contribute to the logical chain of evidence that supports the researcher's conclusions after data analysis". In this study, the phenomenon relates to

the opinions of nurse educators, nurse managers, and preceptors regarding collaboration in implementation of PBL to generate a model for effective implementation.

The reasoning strategies that were used in this study are discussed below:

- *Inductive Reasoning*

Becker et al., (2005:704) define inductive reasoning as "that reason that moves from specific observation to the general rules". It involves applying logic from specific to the general. Qualitative research methodology is in essence inductive in nature (Holloway & Wheeler, 2009:3). Theory can be created from collected data. One can observe or experience a phenomenon or reality and may arrive at conclusions that would induce a hypothesis pertaining to reality (Polit & Hungler, 1999:6). According to Mouton and Marais (1990:103), once data collection is completed, the researcher then identifies patterns and relationships, which are interpreted as the basis for the conclusion drawn.

In this study, inductive reasoning was used to identify concepts that can further be analysed for the purpose of the model development. These were done by means of in semi structured interviews and focus discussion groups with nurse educators, managers and preceptors from whom data were collected and analysed in order to identify patterns and connections. Inductive reasoning was used when comparing the finding with literature. The final findings were also culminated in a systematic explanation of the data that may be conceptualized by means of a model as suggested by Mouton and Marais (1990:106).

- *Deductive reasoning*

Chinn and Kramer (2011:248) define deductive logic "as reasoning from the general to the particular". Deductions are made by "applying the rules of logic" and in this way to make predictions from the general principles (Chin & Kramer, 2011:181). Deductive reasoning can be seen to be in contrast to inductive reasoning. The researcher using deductive reasoning starts with a clear conceptual framework or hypothesis and looks for data to support it (Mouton & Marais, 1990:103). In this study, deductive reasoning

permitted the researcher to make logical predictions about the opinions of nurse educators, managers and preceptors on collaboration in implementing PBL and relationships between the concepts were deduced from the data.

- *Analysis*

Analysis involves taking a complex whole and breaking it down into its constituent part, so that it can be better understood. Analysis is the reasoning strategy that permits the organization of data that allows the researcher to test hypothesis but primarily for the research questions to be answered. According to Mouton and Marais (1990:103), analysis requires "the taking of a complex whole and breaking into parts so that inter-related constructs that are relevant to the understanding of main concept are isolated. In this study, analysis took place after data collection in the field, in order to describe and explain the opinions of the nurse educators in implementing PBL *(Phase 1).* Analysis was also used to describe, categorize and relate the central concepts to each other *(Phase 2).*

- *Synthesis*

The purpose of synthesis is to take pieces of information and put them together to form a whole (Walker & Avant, 1995:28). Synthesis is used to construct a new theory out of separate concepts or a cluster of ideas. In this study, synthesis was used throughout, namely, to construct the analysed data from the nurse educators, managers and preceptors in a way that would assist in identifying a central concept. After concept definition and classification, synthesis was used to construct relationship statement and the collaborative model for effective implementation of PBL. The reasoning strategies were used throughout the stages of theory generation, both separately and interchangeably.

Population sampling and setting

The purpose of sampling is to identify the parameters for data collection. Purposive or judgmental sampling was used for the qualitative component. Burns and Grove

(2009:501) point out that a sample is purposive when participants are consciously selected for a study.

Convenience sampling was used for the quantitative component to select the nursing department offering PBL in pre-registration programme in South Africa. The researcher purposively selected who was to be included in the study on the basis that those selected could provide the necessary data to contribute to an understanding of phenomenon (collaboration) (Parahoo, 1997:252). In qualitative inquiry, the dominant sampling strategy is probability sampling, which depends on the selection of a random and representative sample from the larger population. The purpose of probability sampling is subsequent generalisation to the population.

According to Skchurink, Schurink and Poggenpoel (1998:317), the selection of participants, or sampling, depends on the goal of the study. Since the goal of this study is to determine the opinions of the nursing educators, managers and preceptors regarding collaboration in implementing problem based learning, purposive sampling was considered the most appropriate method for this study.

Knowledge of potential participants was useful to recruit them for the purpose of obtaining as many perspectives regarding collaboration in implementing PBL as possible. However, according to Holloway and Wheeler (2009:122), too many participants could serve to cloud the issues and overcomplicate analysis hence sample size is important. In qualitative studies, data collected should be "rich in description" to best reflect the population (Schurink, 1998:253). In this study, sample size was influenced by information richness (Streubert-Speziale & Carpenter, 2007:12).

The participants in this study were purposefully selected according to participation in education of PBL students in the out of the larger population of nurse educators in higher education institutions. The following criteria were used to select participants who would be best to answer the interview question (Patton, 1990:169):

- **Nurse educators**: Educator registered with SANC and teaching at a university; possession of at least 2 years teaching at a tertiary nursing education institution and

implementing PBL to ensure adequate exposure to PBL and employed in an institution that offers PBL ensure equality of participants.

- **Nurse managers**: the inclusion criteria for the managers are; from health settings where students are placed for clinical learning, have at least two years' experience and above in management position.

- **Preceptors**: Full or part-time preceptors for pre-registration nursing education for at least two years in the institutions offering PBL education.

Volunteers who fitted the criteria were recruited to participate and requested to give written consent after expectations of their participation were explained. The researcher also explained how the findings would be disseminated and how confidentiality would be maintained. The letter requesting permission to conduct the research and the written consent from participants are included as appendices.

The section below explains the two components of the sequential explorative mixed method followed in this research.

Step 1: Quantitative component

The qualitative aspect constituted the core component of this study that is to be supplemented by the quantitative aspect.

Qualitative approaches to data collection usually involve direct interview with participants on a one to one basis or a group setting. The benefits of using these approaches include the richness of data and deeper insight into the phenomenon under study (Burns & Grove, 2005:510; and Green & Thorogood, 2009:102). Data collection in this study involved semi-structured individual interviews and focus group discussion.

- **Semi-structured individual interviews**: Eleven (n=11) individual semi structured individual interviews were conducted from nurse educators and nurse managers.

- **Focus group interviews:** According to Polit and Beck (2010:341), focus group discussions are interviews with a group of people of about 6-10 people whose opinions

and experiences are solicited simultaneously. In this study, five (n=33) focus group discussions were held with nurse educators (n=18) from nursing education institutions offering PBL education and nurse managers and preceptors (n=15) from health care facilities where PBL students are placed for clinical learning. The researcher guided the discussions according the interview guide. FGD were effective in generating dialogue (Polit & Beck, 2010:341), and encouraged participation from people reluctant to be interviewed on their own or who felt they had nothing to say (Kitzinger, 1995:300). Group work in FGD helped the researcher to tap into many different forms of information at a very low cost in a minimum amount of time. Information was obtained in a shorter period of time than one to one interview (De Vos et al., 2011:361). The focus group discussion also offered a powerful opportunity for introducing interactive opinions and emergent thinking during data gathering by providing a voice to the most knowledgeable about nursing education.

Data collection by field notes

Field notes as the researcher's insight into what occurred during the research process are very important. Schurink (1998:286) explains a model by Schatzman and Strauss (1973) which classified notes into three categories. The categories are described in this section and how they were used in this research.

- *Observational Notes*

Observational notes give an account of what happened, when, where and who was involved, with little or no interpretation (Wilson, 1998:434). In this study, the researcher made observational notes to keep track of participants, what the responses were the demographic details of interviewees, and the other day to day practices of the research.

- *Theoretical Notes*

Theoretical notes occur when the researcher and the observer interpret the interaction that occurred in the course of the interview process or the research process as a whole (Wilson, 1998:435). These notes were also consulted during data analysis, on order to identify the patterns and establish links between data. These were described in relation

with observational notes, reflecting the meaning and conceptualizing by linking the present to the previous response as done in relation to opinions regarding collaboration in implementing PBL.

- *Methodological Notes*

As defined by Schatzman and Strauss, in Schurink (1998:286), methodological notes are memoranda and reminder by the researcher about the methodology employed to serve to improve the research design and methods. In this study, methodological notes were made at each stage of the process and were scrutinized by the researcher in order to ascertain where improvements should be made. These were particularly helpful for the researcher on reflecting on her own process of interview to establish consistency with the selected methodology. In this study, the name codes of participants, dates as well as places were recorded and arranged appropriately for data analysis.

Qualitative Researcher as an Instrument of Data Collection

In qualitative research, the researcher plans to observe, discover, describe, compare, and analyse the characteristics, attributes, themes and underlying elements of practical phenomena According to Creswell (1994:145), in qualitative research, the researcher is the primary instrument for data collection and therefore the following were followed during data collection:

- *Respect for participants*: Kvale (1998:118) states that the researcher should respect the participant's values, ideas, opinions and cultural background. This respect should be demonstrated by listening attentively, and creation of an atmosphere that encourages participants freely, without fear of being judged or ridiculed. The participants were given respect or experts in terms of the phenomenon understudy. In this study, the researcher conveyed the attitude of respecting the participants or experts or knowledge in implementing PBL and at the beginning of each interview, this was explicitly stated. The researcher indicated the need to learn from their opinions and nothing they said was considered to be wrong. The purpose of the research was to develop a

collaborative model based on their opinions, and that because participants have a very important role in shaping interventions in the nursing education arena.

- *Communication Skills:* According to Schurink (1998:309), the researcher needs to be competent in both sending and receiving verbal and non-verbal messages. In this study, the researcher used minimal verbal responses, appropriate eye contact, and facial expression and a relaxed posture to encourage the participants to speak freely. Schurink (1998:305) is of the opinion that such behaviour in the part of the researcher conveys understanding and acceptance of the participants. This created an atmosphere of trust, thus made the participant feel more at ease and helped them participate in initial phase of the interview.

- *Probing Skills*: Probing refers to obtaining more information in a specific area of the interview (Burns & Grove, 2009:404). In this study, probing was used to obtain additional information and to clarify responses when needed, through open-ended questions and asked clarification as well as restating or paraphrasing the participant's ideas, opinions, and feelings to ensure understanding. The participants were allowed to tell their opinions in their own language. In case of silences during the interview, the researcher ensured that time was given to participants and not rushed to break any silence (Kvale, 1996:135).

- *Bracketing:* According to Parahoo (1997:391), bracketing refers to suspension of the researcher's preconceptions, prejudices and beliefs so that they do not interfere with or influence the description and interpretation of the participant's opinions. The researcher set aside her own preconceived ideas about PBL, so as not to affect the data being collected. According to Burns and Grove (2009:362), the researcher enters each interview with an open-mind as much as possible. Field notes were taken on the participant's non-verbal reactions referred to in data analysis.

- *Intuiting:* Strubert- Speziale and Carpenter (2007:459) describe intuiting as a process of thinking through data so that a true comprehension or accurate interpretation of what is meant if a particular description is achieved. Burns and Grove (2005:15) explain intuiting as gaining of insight into the phenomenon that cannot be logically explained,

but based on the researcher's interpretation of the situation and previous knowledge. This is a form of knowing and behaving not apparently based on rational reasoning (Parahoo, 1997:393). In this study, during the interviews, the researcher focused and gave all the attention to the participants in order to actively engage them and this increased insight into the collaboration in order to facilitate intuition.

Data analysis

According to Parahoo (1997:354), in qualitative research, data analyses takes place during data collection and thereafter. In this study, the researcher processed the data as they are received and made judgments relating to aspects of collaboration in implementing PBL (Parahoo, 1997:354). An inductive process was followed and the patterns and themes emerging from the data collected were used for model development. Data analysis commenced with data collection and once the first interview was completed, data were analysed and this resulted in the researcher and research becoming intertwined and mutually shaping each other.

Apart from processing information during data collection, written notes were kept and interviews were audio-taped. The fieldwork and the verbatim transcriptions of the tapes present the crude data in qualitative studies (Parahoo, 1997:384). Thus, they were taken into account, although in most cases, qualitative researchers have a feel for what eventually emerges even before the transcripts are read.

According to Strauss and Corbin (1998:42) and Parahoo (1997:384), there are different approaches to data analysis, and some of the most important principles and procedures are discussed below with reference to this research:

- *Objectivity*: Strauss and Corbin (1998:43) describe objectivity as the act to begin open and willing to listen to participants and accurately recording their opinions whilst also recognizing the impact and influence that one's personal training, knowledge and may have on these opinions. Objectivity in this study was enhanced by:

    ✓ Comparing data collected during one interview to data collected from another;

- ✓ comparing data to literature (literature control);
- ✓ making and consulting field notes;
- ✓ following research procedures (Strauss & Corbin, 1998:45);
- ✓ use of an independent recorder; and
- ✓ use of an audit trails for others to follow the thinking process and the actions of the researcher (Green & Thorogood, 2009:219).

Audit trails were also useful for understanding the researcher's decisions, choices and insights, especially when themes and concepts begin to emerge from the data (Parahoo, 1997:354; and Green & Throgood, 2009:219). The audit trails provided a clear account of procedures used and kept an "audit trail" that others could follow.

- **Sensitivity:** According to Strauss and Corbin (1998:48), sensitivity refers to development of insight in the data and ability to identify meanings that are not explicit.

- **Emic and Etic aspects of analysis**: Related to sensitivity and objectivity is emic and etic phase of qualitative research. According to Green and Thorogood (2009:285), emic attribute of qualitative research is an understanding from the perspective of those you are studying, namely, the discovery of meaning is attributed by the participants. Etic codes are the analytic code the researcher develops to explain what is going on (Green & Thorogood, 2009:385). The "emic" aspect is that of the insiders' explanation of the phenomenon provided by the participant in it and the etic is that of the "outside" or the analyst (Green & Thorogood, 2009:152). In this study, the emic aspect of data analysis prevailed during the coding of data and the etic aspect during the interpretation of the themes and literature control or comparison to literature and other research.

- *Principles of Data Analysis*

Green and Thorogood (2009:219) regard the principles of data analysis as "good practice" guiding that adds credibility to the data analysis and interactive its reliability and validity. The following are the critical principles of qualitative design which guided data analysis in this study:

✓ *Transparency:* According to Green and Thorogood (2009:220), transparency is related to the explicitness of the methods used, and how clearly they are outlined for the reader in research reports. The key is to provide an honest and clear account of the actual procedures used for analysis of data. In this study, audits trails were used, a short description of how coding categories were developed and how the sample was chosen (Green & Thorogood, 2009:220).

✓ *Reflexivity*: Reflexivity refers to the recognition that the researcher is part of the process of producing data and their meanings and to consciously reflect on that process (Green & Thorogood, 2009:222). In this study, the following were used to develop a reflexive awareness:

- *Methodological openness*: The researcher was explicit about steps taken in data production and analysis, and decisions made.

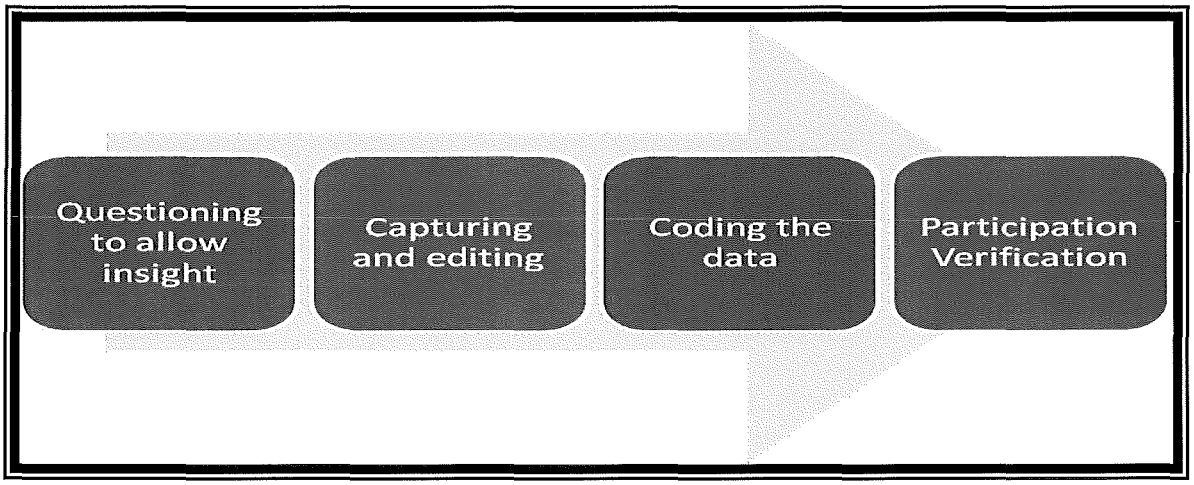
- *Theoretical Openness:* The theoretical starting point (Constructivist Design) was made and the way they shaped the study.

- *Social setting awareness and of the research itself.* In the interview, the "data" were largely the results of interactions between the researcher and the research (Green & Thorogood, 2009:223). Reflexivity requires constant awareness of this.

Krueger (1994:127) outlines the principles of data analysis that should be deliberate and planned, namely: systematic process, verifiability and time management.

Systematic Approach: Data analysis must be systematic. In this study, it was achieved by following the following steps:

Figure 4.2: The systemic process of data analysis



Questioning to allow insight

Open-ended questions were used following the interview guide to gain insight on the opinions of nurse educators, nurse managers and preceptors regarding collaboration.

Capturing and handling of data

Interviews were audio taped and the researcher made additional notes on non-verbal, para-verbal and verbal observations. These observations were taken into consideration when re listening to the tape and reading the transcripts.

Coding of Data: Coding data refers to assigning labels ("codes") to extracts of data (Green & Thorogood, 2009:284). In this study, the statements from collected data were grouped and given codes for easy identifications later in the study (Streubert & Carpenter, 2007:457). These codes acted as guidelines for this study to help the researcher conduct data analysis simultaneously with data collection.

Participant Verification: Data verification by participants was done by asking them to summarize their opinions at the end of the interview. Once the transcript is completed, it can be verified by one or more participants and analysis can be verified by recoding and sharing the final report with participants.

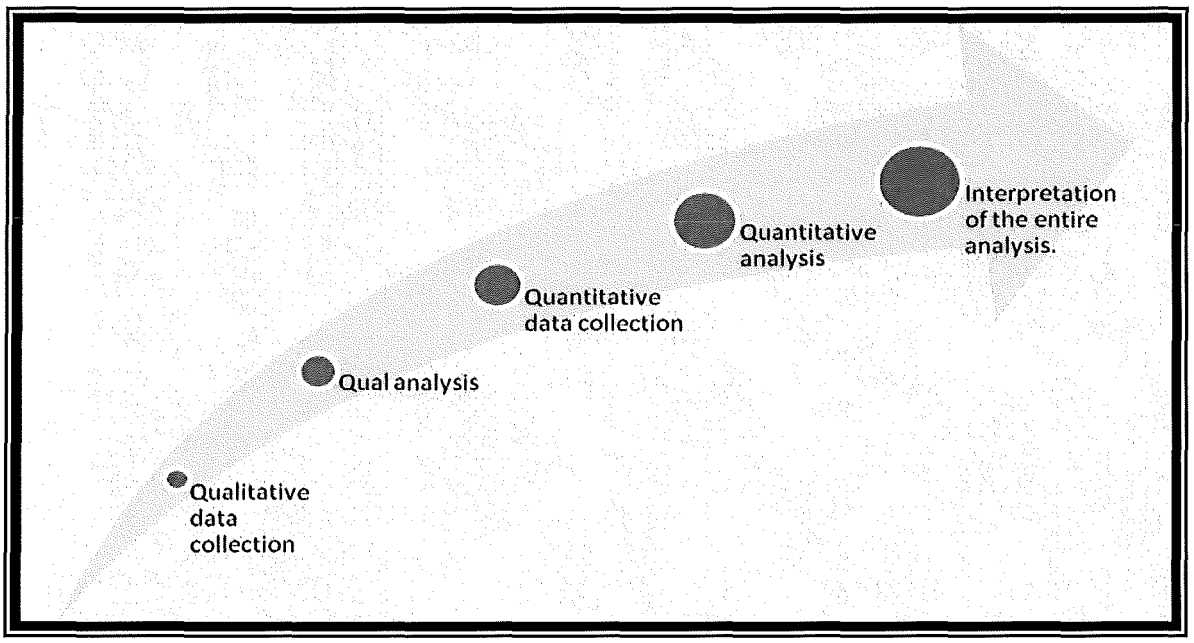
Literature Control: In a qualitative approach, the literature control is used inductively so as not to prematurely influence the thoughts of the researcher and create pre-conceived notions (Creswell 1994:21; and Patton, 1990:163). In this study, the findings were compared with literature to confirm them (Creswell, 1994:24) and thus assisted in placing them within an educational context. Similarities and differences were identified between the categories and existing literature to evaluate the significant meaning of the findings. Once the main categories have been identified and analysed, the central concepts were identified and further analysed in the next step of theory generation.

In the sequential approach of this method, the researcher:

- ✓ developed definitions for the codes;
- ✓ coded the transcripts;
- ✓ analysed the numerical data; and
- ✓ incorporated the results of the supplementary findings into the qualitative results to enhance conclusions and implications (Munhall, 2011:550).

The process of data analysis in this sequential exploratory or qualitative dominant mixed method designs proceeded as depicted in the figure 2.3.

Figure 5.3: *The process of data analysis in sequential exploratory approach*



The researcher used analysis from the two methods to generate complementary insights that together create a bigger picture about collaboration. The mixed method assisted the researcher to:

- ✓ Assist the development of one method from the other, using qualitative and quantitative sequentially for the purpose of increasing construct validity;
- ✓ Complement the results using different methods for purposes of enhancing, elaborating, illustrating and clarifying the results. This assisted in description or application of the research findings; and
- ✓ Cross check and corroborate results using the different types of data (Schifferdecker & Reed, 2009:638).

Step 2: Quantitative component

This quantitative component constitutes the supplementary component of the qualitative driven mixed method study (Munhall, 2012:579). The primary role of this component

was to enhance descriptions of collaboration in implementing PBL by using quantifications.

Research Design

A survey design was used to provide the quantitative or numeric description of the opinions of the participants (Creswell, 2009:145). Burns and Grove (2009:245) describe survey as data collection technique wherein the researcher uses questionnaire or personal interviews to gather data. The following are the advantages of survey design: (1) Surveys are relatively inexpensive (especially self-administered surveys). (2) Surveys are useful in describing the characteristics of a large population (Burns & Grove 2009:254; and LoBiondo–Wood & Haber, 2010:275). No other method of observation can provide this general capability. From the results of the survey, the researcher generalized or made claims about population.

Disadvantages: Surveys are inflexible in that they require the initial study design (the tool and administration of the tool) to remain unchanged throughout the data collection. The researcher must ensure that a large number of the selected sample will reply. As opposed to direct observation, survey research (excluding some interview approaches) can seldom deal with "context".

Population and sample

From the five Nursing Department in South African universities offering problem based nursing for pre-registration programme, three were recruited to participate in the study using purposive or convenience sampling and three Provincial Hospitals in the North-West where PBL nursing students are placed for clinical learning as well as the accredited clinics in the Ngaka Modiri Molema District. All the lecturers in the selected Nursing Departments were invited to participate, as well as the nurse managers and preceptors of hospitals where students are placed for clinical learning.

Sample: Purposive sampling was utilized to recruit the participants using the same eligible criteria used in the core component of the method.

Data collection instrument

A questionnaire was used to gather data from the participants. The literature (Burns & Grove, 2009:408; De Vos, Strydom, Fouche, Delport, 2011:196; and LoBiondo–Wood & Haber, 2010:275) describe a questionnaire as printed self-report form designed to elicit information that can be obtained from participants written responses. The information derived through questionnaire is similar to that obtained by interviews. The use questionnaire is chosen because of the following advantages:

- ✓ Can be distributed to large sample directly or indirectly through mail or e-mail; and
- ✓ Can be administered from remote locations using mail, email or telephone.

Consequently, very large samples are feasible, making the results statistically significant even when analysing multiple variables. Many questions can be asked about a given topic giving considerable flexibility to the analysis (Burns & Grove, 2009:408; and LoBiondo–Wood & Haber, 2010:279).

The questionnaire was developed based on the themes that emerged from the qualitative results and literature. Beliefs in the benefits of collaboration were measured by the adapted "Belief in the Benefits of Collaboration Scale" developed by Sicotte, D'Amour and Moreault (2002:994). This scale was designed to assess each healthcare provider's belief in the benefits of collaboration. The scale composed of five items. Some example items are: "A better answer to a patient's bio-psycho-social needs is in interdisciplinary work", "Interdisciplinary work provides the quality of care and services offered to patients.", and "Interdisciplinary work fosters increased integration of interventions" (Sicotte, D'Amour & Moreault, 2002:994). In this research, the referent "patient" was changed to "students" and "health care" was changed to "nursing education" in all items. Each item was measured with a 4-point Likert type scale ranging from 1 (strongly agree) to 4 (strongly disagree). A lower score indicated a higher belief in the benefits of collaboration. The instrument was selected based on each instrument's ability to measure a target variable validly and its evaluation in other

studies". The reliability of this scale was high with a coefficient alpha of .91 (Sicotte et al., 2002:994).

The content areas of the questionnaire included the following:

Section A: Demographic characteristics of participants.

Section B: General opinions on collaboration.

Section C: Rating of benefits of collaboration.

Section D: Importance of key elements in successful collaboration.

Section E: Barriers that might hamper collaboration.

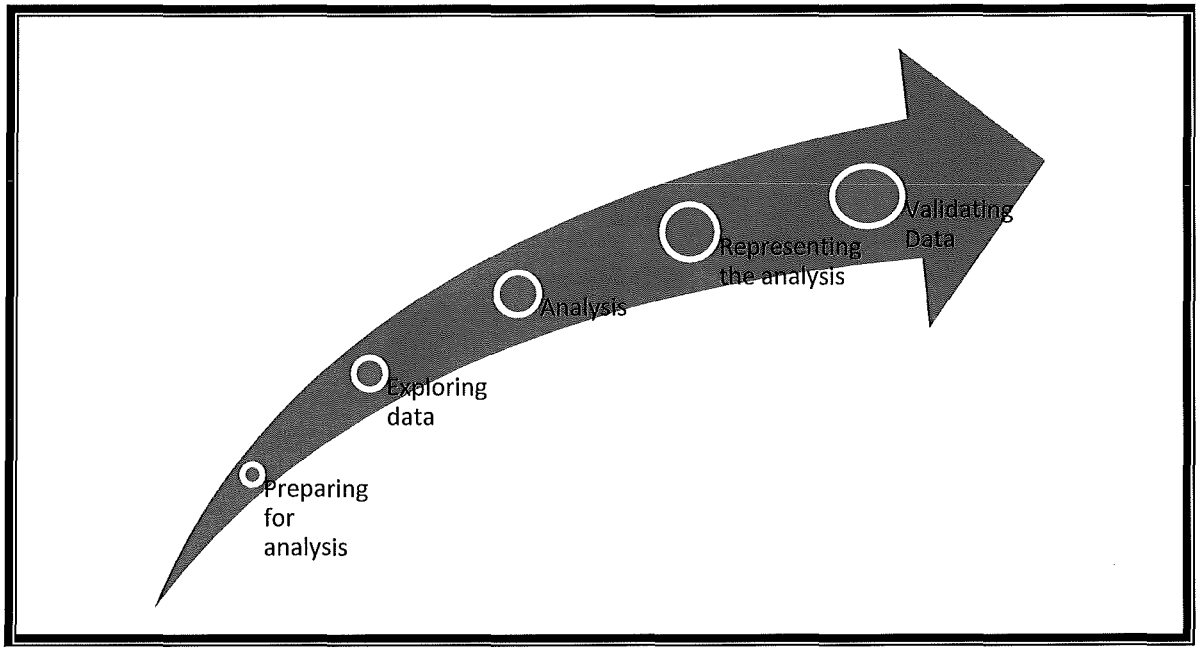
In Section B, a 4-point Likert scale to indicate participant's agreement or lack of it with statements provided – 1 = strongly agree (SA), 2 = agree (A), 3 = disagree (D), 4= strongly agree (SD) was used.

After each section, space was provided for qualitative comments. Content validity was checked with collaboration experts from Johns Hopkins University faculty members, McMaster University and North-West University as well as MRC statistician. The tool was piloted with ten participants from the participating universities and hospitals.

Data Analysis

The basics of data analysis in quantitative approach were followed, namely; preparing the data for analysis, exploring the data, representing the analysis and validating the data (Creswell, 2009:129). The figure 2.4 depicts the steps to be followed in data analysis of this component.

Figure 6.4: *Steps in data analysis of quantitative component (Adapted from Creswell & Clark, 2007:150)*



- *Preparing data for analysis:* The researcher converted raw data into a useful form for analysis. This means scoring the data by assigning numeric values to each response, cleaning data entry errors from the data base, and creating special variables that were needed , such as items on instruments with converted scores that comprise multiple items that form scales (Creswell & Clark, 2007:150). Recording and computing were completed with statistical computer program SPSS and a codebook that list all the variables, their definition and the variable numbers for each were developed.

- *Exploring data*: This means examining data visually to develop broad trends and shape for distributions, reading though the data and making memos and developing a preliminary understanding of the data base (Creswell & Clark, 2007:150). In this section, it entails visually inspecting the data and conducting descriptive analysis (the mean, standard deviation and variance of responses to each item on the instrument). The researcher explored the data to see the distribution of the data and determine whether it is normally or non-normally distributed so that the proper statistics are chosen for analysis (Creswell &

Clark, 2007:130). Descriptive statistics were also generated for all major variables in the study.

- *Data Analysis*: Analysing the data consists of examining the database to address the research question (Creswell & Clark, 2007:130). The researcher analysed the data based on the research question and used the appropriate statistical test (e.g., for description of trends and comparing the groups and relating the variables). In this section of data analysis, the process proceeded from descriptive analysis to inferential analysis.

- *Representing the data analysis*: The next step was to present the results analysis in summary form. These summaries are statements summarizing the results, tables or figures. The figures, such as bar charts and line graphs' give visual form of result summaries. These visual forms depict the trends and distribution of data (Creswell & Clark, 2007:133).

- *Validating the Data*: in quantitative design, validity means that the researcher can draw meaningful inferences from the results to a population; reliability means the scores received from participants are consistent and stable over a period of time (Creswell & Clark, 2007:130).

The results from this component were integrated into core component. Creswell and Clark (2007:83) refer this process as merging the data set.The data are merged when the researcher takes the two data sets and explicitly brings them together or integrate them.

Ethical Considerations

Ethical clearance: Prior to conduct this study, an ethics application was submitted to North-West University and the study was granted approval (**Ethics number: NWU-00033-11-A9**). Refer to Appendix 1. Patton (2002:53); Burns and Grove (2009:189); Polit, Beck, Hunger (2004:78) and Streubert and Carpenter (2007:63) provide comprehensive guidelines identifying ethical issues within studies including: purpose,

promise and reciprocity; informed consent; confidentiality; and data collection boundaries. Each of these will be addressed in turn.

The purpose of the study was explained clearly to both institutional contacts (the researcher's first point of contact) and individuals within the study. In relation to *promise and reciprocity*, all information provided about the study clearly identified the possibility that individuals may not benefit from the research but the results would be used of inform those responsible for the implementation of change in the nursing education, something which has already commenced through the publication and dissemination of parts of this thesis. Participants were offered the opportunity to request a copy of the final report on this study.

Individuals were informed that they would not be in any way impacted regardless of their decision to participate or not in the study and were free to withdraw at any stage. For the survey, it was reinforced that due to the nature of the instrument, consent would not be withdrawn after submission of the completed survey.

Confidentiality was guaranteed to all institutions and individuals involved in the research. In the qualitative phase, the identities of the institutions and individuals were maintained confidential by use of codes, rather than names. The allocated codes were kept in a secure place. All participants were also ensured that the level of analysis conducted and reporting findings would not allow for the identification of individuals.

Informed consent was gained for all components of the study. Consent was firstly gained from institutional contacts (or the nominated responsible manager) in order to gain access to the organisation. For the first component, each individual was provided with information sheet and consent form (Refer to Appendix G).

The survey's questionnaires provided an explanation and the opportunity to volunteer to complete the survey. Completion of the survey's questionnaire was considered to be informed consent and participants were advised that they could withdraw up to any point until the survey was submitted.

2.4.2 Phase 2: Model Development

Phase 2 of this research focused on development of a collaborative model for effective implementation of PBL. This consisted of the following steps of the theory generative approach: Concept analysis and classification, development of relationship, statements, description of the model. These steps are described as follows:

Concept analysis

Burns and Grove (2004:692) define a concept as a term that abstractly describes names and objects or phenomena, this providing it with a separate identity or meaning. Chinn and Kramer (2011:158) define a concept as a complex mental formulation of opinions that can be placed on a continuum ranging from empiric to abstract. The concept used during model development was analysed, defined and described according to the attributes or characteristics.

Rodgers and Knalf's (2000:83) evolutionary view of concept analysis was used to clarify the critical attributes of collaboration in implementing PBL, identify elements needed to be present for the concept to occur, distinguish the concept from a multitude of related terms, and assist in the development of a comprehensive definition to facilitate the application of the concept in practice.

The adapted evolutionary view of concept analysis focuses on the clarification of the concept and its use, uncovering the attributes of the concept as a basis for further development (Rodgers & Knalf, 2000:83). This framework was used to clarify the critical attributes of collaboration, identify elements needed to be present (antecedents) for the concept to occur, distinguish the concept from the multitude of related terms; and to assist in the development of a comprehensive definition to facilitate the application of the concept in nursing education practice (Petri, 2011:73).

The following adapted activities of Rodgers and Knalf's (2000:85) framework were utilized to guide the analysis of the concept of collaboration:

- Definition of the concept of interest generally or dictionary definition;

- identification and selection of appropriate realm (setting and sample) for data collection;
- data collection relevant to identify the attributes of the concepts along with surrogate terms, references, antecedents;
- data analysis regarding the above characteristics of the concept;
- conducting interdisciplinary or temporal comparisons;
- identification of model case of the concept; and
- identification of hypotheses and implications for further development.

It must be noted that in this study, both steps six (conducting interdisciplinary or temporal comparisons) and step eight (identification of hypotheses and implications for further development) were not utilised.

Concept Classification

After concept analysis, then followed concept classification. Dickoff et al's (1968:426) Survey List was used in this study for concept classification. The survey list assisted to clarify prescription or activities necessary to teach the desired behaviors of the situation producing theory (Dickoff et al., 1968:423). In addition, the survey list:

- Related the concepts to each other in a hierachial order; and
- made it easier to differentiate the main concept from the related ones.

Table 2.3 displays the components of the survey cccording to Dickoff *et al.,* (1968:422), and how this was applied in the study.

Table 4.2: *Components of Survey List*

Agency	Who performs the activity?	In this study
Recipient	Who is the recipient of the activity?	Institutions initiating PBL, clinical serices; colleges affiliated to PBL univeristies,students and health care users.
Context	In what context is the activity performed?	Centers of Excellence in PBL.
Procedure	What is guiding procedure of the activity?	Collaboration.
Dynamics	What is the energy source of the activity?	Commitment, communication, cooperation , trust and respect.
Termins	What is the end point of the activity?	Effective implementation of PBL in nursing education.

Construction of relationship statements

A relationship statement links two or more concepts together. Polit, Becker and Hungler (2001:469) refer to a relationship as a bond or association between two or more variables. The two types of relationship statements used include: associative and causal statements. Burns and Grove (2009:688) describe associative relationships as relations that identify concepts that occur or exist together in the real world, thus, when one concept changes, the other concept changes too. These relationships are part of theory and can be tested through research. The authors explain the causal statements or statements that demonstrate a caused effect relationship.

In this research study, after concepts had been identified, relationship statements were developed asking questions such as:

- ✓ Are the concepts stated alone? (Independent)
- ✓ Are the concepts occurring together? (Associative)
- ✓ Are the concepts related to each other?
- ✓ Are the concepts influencing each other?

The answers to those questions will indicate the types of relationships emerging to impact structure to the theory ns d facilitate understanding (Chinn & Kramer, 2011:206).

Description of the model

Once the concepts have been defined and classified the relationship statements constructed, the description of a model to represent the theoretical concepts can be done. In this study, figure 7:6 represents how collaboration for effective implementing PBL in nursing education can be initiated and sustained as suggested by Chinn and Kramer (2011:50).

Chinn and Kramer (2011:176) identify six (6) elements that are critical in model description, namely, purpose, concepts, and definitions of concepts, model structure, assumptions and model evaluations.

- **Purpose of the Models**

  The purpose of the model contextualizes the research and determines the desired level of theory generation. In this study, for model is to be able to be applied in nursing education practice, therefore it may be called situation producing or practice theory. Practice theory have a practical purpose and this best suit this study, which aims at developing a collaboration model for effective facilitation of PBL for a nursing department.

- **Concepts**

  "Concepts are described as a mental image of phenomena" (Walker-Avant, 1995:24) or "abstraction passed on observations of certain behaviours or characteristics" (Polit et al., 2001:459). Concepts are building blocks for theory. In this study, concepts were identified from the collected data, opinions, were explicitly described and understood by all concerned. Concepts were defined from data analysis by referring to the data gathered and appropriate literature during concept analysis.

- **Concept Definition**

  Concept definition helps to clarify their meaning within the context and in relation to the model. In this study, concepts are defined and described by asking the following questions:

  ✓ *Which concepts are defined explicitly or implicitly?*

  ✓ *Which concepts are defined generally and specifically?*

  ✓ *Are there competing definitions for some concepts?*

  ✓ *Are any concepts defined contrary to common use?*

- **Nature of relationships between concepts**

  After concept definitions, identification of the relationships that exist among them followed. The relationship demonstrated how concepts are connected, namely, on associative or casual relationships. These relationships were expressed through relationship statements, namely associative or casual (*one concept causing the other*) (Chinn & Kramer, 2011:180). In determining the relationships between the concepts, the researcher asked questions such as:

  ✓ *Are relationships descriptive or explanatory?*

  ✓ *Do they impart understanding?*

  ✓ *Are some relationships predictive*?

- **Structure of the Model**

The question of what structure is emerging was addressed once the relationship statements had been developed. Questions about the structure focused on:

✓ Which relationships are contrary?

✓ What are the directions and strengths of relationships?

✓ What order do the relations follow?

Once the structure of the model was done, a diagrammatic representation was displayed. The purpose of this component is making the model comprehensible to others.

- **Assumptions of the model**

After the model structure, identification of assumptions underlying the model for example the basic assumptions underlying the model followed. For example, the basic assumption of this study is that collaboration is necessary for effect implementation of PBL. This assumption will lead to operationalization of the model in a form of training intervention.

- **Model Evaluation**

The model evaluation by experts was not part of this study but will be done during post-doctoral studies. However, in this study, critical reflection of the model was carried out by asking the following questions based on (Chinn & Kramer, 2011:197-206):

✓ *How clear is the model?*

✓ *How well does the model reflect the data input?*

✓ *How simple is the model?*

✓ *How general is the model?*

✓ *How accessible is the model?*

✓ *How important is the model?*

In other words, the model should be evaluated for clarity, accessibility simplicity and importance. The table below depicts assessment criteria for model evaluation in this

study. The criteria that typify model evaluation in this study are summarized in the following table:

Table 5.3: *Assessment Criteria for Model Evaluation*

Assessment Criterion	***Explanation/ Description according to Chinn and Kramer (2011:176-206)***
Clarity	This addresses both semantic and structural clarity as well as consistency of the model. The model should be easily comprehended with understandable relationships between concepts. In this study, the model was portrayed in a manner that is easily understood from both linguistic and structural points of view.
Simplicity	According to Chinn and Kramer (2011:201), simplicity and complexity of the model depends on the goals of the study. Again, often a model in its early stage of development may appear complex, but as the concepts are further refined and integrated, it will become simpler. In this study, the model was made simpler for easy understanding in order to apply it in nursing education.
How general is the model?	This refers to the ability to apply the model in wide-range of situation, whereas a specific model will only be applied in a specific type of situation. In this study, the model was simple in structure, but it is general enough to be applied to an array at context related to the phenomena PBL under investigation. The model developed here may also be applied to other developing countries in Africa.
Importance of the model	This addresses the value of the model in terms of its contribution to its purpose. In this study, the relevant model will strive to be of practical value in nursing education for alternative PBL implementation. The goal of situation producing theory is to create certain specified outcomes therefore attention was paid to this question". How important is this model to ensure that the model characteristics are in line with its stated purpose"?

2.5 Data Verification

2.5.1 Qualitative component

According to Green and Thorogood (2009:220), in qualitative work, the notion of validity and reliability can be problematic. In qualitative research, as in the interpretative and constructions traditions/approaches, the qualitative researcher works with truths that are socially situated. Thus measures for ensuring trustworthiness of the findings and model development by Guba (in Krefting, 1991:212-214) were utilized. The criteria that typify data verification is this study are summarized below in Table 2

Trustworthiness

According to Streubert and Carpenter (2007:641), trustworthiness refers to establishing validity and reliability of qualitative research. Qualitative research is trustworthy when it accurately represents the experience of the study participants. Included are the truth value, applicability consistency and neutrality of the research (Krefting, 1991:212). According to Green and Thorogood (2009:219), these are the kinds of "good practice" guidelines that will add credibility to data analysis, increase faith in its reliability and validity. The criteria that typify trustworthy are discussed in this section.

Truth Value

This criterion refers to the researcher's confidence that the data gathered represent the perceived experience and participants are credible. In this study, the investigator triangulation was utilized to reduce the threat of the researcher bias and to increase trustworthiness. Table 2.4 typifies the strategies that were used to ensure the truth value in this study.

Table 6.4: *Strategies to Ensure Truth value.*

CRITERION	DESCRIPTION
Peer Review	The research question was piloted as another way to ensure truth value: ✓ Impartiality was promoted by peer review. ✓ Presentations were done at doctoral seminars.
Member Checking	Truth value is enhanced by member control, where in findings are checked with members of the sample population. In this study, the findings was taken back to participants and ensuring that they agree (Green & Thorogood, 2009:219).
Reference Adequacy	The transcribed interview as well as the research protocol and re-order's protocol was included assumptions in the final report, in order to increase through reference adequacy.
Authority of the researcher	The researcher has experience of qualitative research in Master's studies, and was guided by high rated researcher who is acting as a promoter. The pre-doctoral workshop on the model development research design was attached.
Prolonged engagement with participants	Prolonged engagement involved engagement investing adequate time and building rapport with participants. The researcher spent extended periods with participants and interviewed participants in their natural setting (own homes, offices and boardrooms).

Adapted from Green & Thorogood (2009:219-227); Streubert & Carpenter (2007:49)

- **Applicability**

This term refers to the extent to which research findings are applicable or transferable to other populations. Green and Thorogood (2009:287) explained this concept as often preferred to generalizability in qualitative research as it refers to conceptual rather than empirical findings to other settings. In this study, the applicability was enhanced by providing a dense description of findings and research methods. This is an attempt to

CHAPTER 3

QUALITATIVE RESEARCH FINDINGS AND LITERATURE CONTROL

3.1 Introduction

The previous chapter dealt with the design and methodology used for this study. This chapter focuses on the results obtained through analysis of semi-structured individual and focus group discussions. Literature control is used inductively to be in line with the core component of this paradigm, namely; qualitative research (Creswell, 1994:20). The themes and sub-themes are discussed with reference to the literature review and participants' remarks quoted to support the findings.

3.2 Results

Three focus group discussions were held with three universities offering PBL for pre-registration programme in South Africa and two Provincial Hospitals in the North-West Province where PBL students are placed for clinical learning. In addition, individual interviews were held with n=4 educators and n=7 nurse managers who were not included in the focus group discussion (FGD). Table 3.1 depicts the profile of interviews and characteristics of the participants.

Table 7.1: ***The Profile of Interviews and Characteristics of the Participants***

Position	Focus Group Discussions	Individual Interviews
Nurse Educators	n=6 X 3 groups = 18	n=4
Nurse Managers	n= 8, and n=7 = 15	n=7
Total	33	11
	n=44	
Females	28	10
Males.	5	1
Total.	33	11

assist other researchers to decide of data can be transfer. In addition, the findings were compared with literature to ascertain whether other researches support the findings.

Transferability: refers to probability of the study findings have meaning to other similar situations (Streubert & Carpenter, 2007:49).

- **Consistency/ Dependability**

Consistency refers to the extent to which data would be replicated if the research were to be repeated using the same subject (Burns & Grove, 2009:431; and Steubert & Carpenter, 2007:40). In this study, dependability was enhanced by a thorough explanation of the philosophical and theoretical assumption; use of investigator triangulations; and the use of code-recoding procedures. Interviews are included as annexures to the research report.

- **Confirmability/Neutrality**

This term refers to "freedom from bias in research procedures and result" (Poggenpoel, 1998:380). Lincoln and Guba (in Kretting, 1991:21) suggest that confirmability may increase neutrality. Confirmability refers to the extent that an outsider can follow the logic of the findings and explain how the various opinions of the participants have been made.

In this study, the following were employed to increase neutrality: Triangulation; member checking; and literature control on the research findings, member checking/ participant member validation. Categories and themes found in the data were checked with participants.

Audit Trails: In order to assist the outside expert to examine the theory generation steps and to ensure logical and justifiable process was followed.

- **Authenticity**

This term is used to describe the mechanisms by which the qualitative research ensures that the findings are real, true or authentic (Streubert & Carpenter, 2007:457). In this study, authenticity was ensured by:

- ✓ Using applicable methods of inquiry from qualitative paradigm; and
- ✓ Applications of fairness interviewing participants by following some procedure and allowing participants equal opportunity to voice their opinions.

2.5.2 Quantitative component

Reliability and Validity in quantitative component

A pilot of both components of the study was made. The qualitative component resulted in change from unstructured interviews to semi-structured interviews in attempt to focus the participants.

Minor modification: A minor modification is not expected to change the content or meaning of the items and response scales but just to ensure that the instrument is user friendly to the participants. Open-ended questions on the questionnaire were reduced because most of those were not answered.

Usability testing: Usability testing examines whether participants from the target population are able to use the data collection tool appropriately. This was used in this study to evaluate usability of the Belief in the Benefits of Collaboration Scale in measuring opinions on collaboration in implementing PBL.

2.6 Summary

In this chapter, the research purpose statement was given briefly and the research design for investigation and model development were provided. The theoretical framework to guide the study was outlined. Data collection and analysis methodology to be used have been explained. The application of the methodology of the study was detailed, ethical considerations about the study project were outlined and the data

verification criteria were justified. The next chapter discusses the findings of the fieldwork, leading to the identification of the central concept(s) and further analysis.

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	n=44	
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Males.	5	1
Total.	33	11

Realization of the sample

Ages of participants varied from 31 years to 64years, and the highest qualification of participants was a PhD in nursing and the lowest, a Post-basic Nursing Diploma in various clinical specializations. The majority (n=17) of nurse educators had Master's Degrees in nursing education. Most (n=38) were females, whilst only six (n=6) were males. This correlates with SANC statistics (2010) which indicates that 94% of nursing population in RSA is females and the literature that indicates that the nursing workforce in the health care sector is mostly female (WHO, 2002:33).

3.3 Themes identified from the narratives of participants

The following themes, categories and subcategories emerged from the data (see Table 3.2)

Table 8.2: *Themes, Categories and Sub Categories that Emerged from the Interviews*

Theme	Category	Sub category
Participants verbalized the importance of different forms of collaboration	1.1 Intra-professional collaboration	1.1.1 Collaboration between educators and clinical staff 1.1.2 Collaboration of different nursing disciplines
	1.2 Interdisciplinary collaboration	1.2.1 Collaboration with other departments within Education institution servicing the department of nursing 1.2.2 Interdisciplinary collaboration in the clinical services
	1.3 Inter-institutional collaboration	1.3.1 Collaboration with centres of Excellence in implementing PBL 1.3.2 Collaboration of education institutions with clinical setting 1.3.3 Collaboration with other NEI's offering PBL in the country. 1.3.4 Nursing colleges affiliated to universities offering PBL.
Opinions regarding the benefits in collaboration	2.1 Staff benefits	2.1.1. Information and expertise sharing 2.1.2. Personal development and mentoring
	2.2. Students' benefits	2.2.1 Professional socialization 2.2.2 Obtaining the best from expertise of collaborators 2.2.3 Quality education 2.2.4. Competent students
	2.3. Health care consumer's benefits	2.3.1 Quality patient care 2.3.2 Team approach
	2.4. Organizational benefits	2.4.1. Resource sharing 2.4.2 Effective utilization of resources
Factors contributing to a successful collaboration	3.1Governance/ Leadership	3.1.1. Commitment from strategic managers. 3.1.2 Common goal 3.1.3 Contract/ agreement 3.1.4 Continuous Development of all collaborators on PBL 3.1.5 Monitoring and evaluation of collaboration
	3.2. Communication.	3.2.1 Open communication. 3.2.2 Regular meetings 3.2.3 Mutual understanding and respect 3.2.4 Collegial relation 3.2.5 Mutual trust
	3.3. Active participation	3.3. 1. Participation from goal setting 3.3.2. Involvement in PBL curriculum planning, implementation and evaluation.
4. Opinions regarding barriers in collaboration	4.1 Lack resources	4.1.1 Lack of funds 4.1.2 Funds for Learning resources. 4.1.3. Time pressures
	4.2 Poor human relationships	4.2.1 Poor communication 4.2.2 Lack of cooperation 4.2.3 Lack of respect

3.4 Discussions on findings and literature control

This section gives the findings of the study which are discussed according to themes, categories and sub-categories. In discussing the findings; the researcher gives participants' direct quotations and compares them with the literature. The purpose is to confirm the findings, indicate those unique to this study, and point out those found in the literature but not confirmed by this study. The collected data were transcribed verbatim from the audiotapes and analysed firstly by identifying themes from the raw data, also called "open coding"(Hoepfl, 1999:6). The raw data were divided into paragraphs and sentences with the same meaning, sorted into categories, and then coded.

3.4.1 Theme 1: Participants verbalized the importance of different forms of collaboration

All the participant expressed the need to collaborate in implementing problem based learning in nursing education. Collaborations are increasingly becoming the format for ways of doing work as the nature of learning and teaching is being dramatically transformed. According to Huxham and Vangen (2000:156), the last decade has seen a worldwide movement toward collaborative governance, collaborative public service provision, and collaborative approaches to addressing social problems.

This is what one participant said:

> *Our current or present president is always saying on TV working together you get more. Even the former President was always saying eh---eh----. We must work together as a nation to build a better South Africa. From these two scenarios or examples really show that we need to work with other people to ensure that this problem based learning is a success.*
>
> *Eh---- eh--- for example, a man and a wife in a marriage, I mean, when you are alone sometimes you cannot achieve a lot, but when you are with someone at least you can be able to achieve more things, because you are actually going to help each other. Just like in the very method of teaching we need people who can help us, to ensure that this is a success.*

The other verbalized this:

> *Oh ------ The collaboration is long overdue. Training of students requires collaboration. Even, in Tswana expression it is said "Ngwana ka sejo se a*

tlhanelwa" which literally means Bringing up a child is like food and requires group efforts" (Meaning bring up a child requires collaborative efforts).

The other one said this:

> *Ok….. Ok, generally you know the province has a lot of problems, especially where resources are limited. Collaboration to me is necessary. And especially where people are handling almost the same type of things, type of line…like for instance if people are doing teaching, basically they can share whatever they have. …and…again it basically would assist in improving certain things within the performance of whatever line people are in, like for instance in education, where people would share information, people who have the necessary knowledge would also advance that knowledge to those people who don't know, so to me, collaboration is really necessary to address areas which are like almost similar, and where resources are limited*

This is congruent with the assertion by Walter, Davies and Nutley (2003:59); Montiel-Overall (2005:1) and Bedwell et al., (2012:128) who perceived collaboration and partnerships as much-touted values in organizational life today. Collaborating with other key role players, nurses in academia and in service settings can directly impact nursing education and practice, often effecting changes and achieving outcomes that are more extensive and powerful than could be achieved by working alone. Kirschling and Erickson (2010:286) and D' Amour et al. (2008:2), in their models of collaboration, also reported that collaboration is the central in any collective undertaking.

The following are the categories that emerged from this theme:

- Intra-professional collaboration;
- interdisciplinary collaboration; and
- inter-institutional collaboration.

Category 1: Intra-professional collaboration

Collaboration and partnerships are much-touted values in organizational life today (Walter, Davies et al., 2003:59). Inter-professional collaboration, defined as the relationships and interactions that occur between co-workers, is a complex, dynamic process (D'Amour et al., 2005:8).

Intra-professional collaboration between nursing schools and health care service are important to the alleviation of barriers to clinical learning and quality professional education. This collaborative approach to the education of students is critical so that they can be properly socialized into the professional world. Additionally, intra-professional collaboration enhances student's knowledge of his or her own discipline. The subcategories that merged from this category include collaboration between educators and clinical staff and collaboration of different nursing disciplines.

- Collaboration of nurse educators and clinical staff

Participants expressed the need for collaboration of nurse educators and clinical staff where students are placed for clinical learning.

This is a comment from one manager:

> *Working hand in hand as unit managers and nurse lecturers will help in assisting students with learning issues. For example, if we are busy in the wards or hospital and we can't reach the students with collaboration nurse educators can be of help. We can also fill in the gap where there is shortage of educators to teach a particular aspect. You can also fill in a gap where there is shortage in the clinical services to teach or accompany students. What I mean is that we can also give cases to present in the ward situation. This will help to produce a well-rounded graduate. Collaboration is really necessary and will be beneficial.*

This is what one educator said:

> *I am just going to tell you what I think. I think that the major stakeholders need to be firstly the clinical practitioners or spaces. I think of partnership with sometimes...I think we sometimes work in such isolation with our clinical partners. So I think I know that there is a move like clinical training grants that are now being initiated within our institutions that will bring in clinical preceptors that can be part of the classroom learning as well. But, I think we should be talking with the clinical stakeholders from either like from a provincial level structure (6:33) first of all to identify what are their urgent health needs. What are their major health needs? Often, there are new policies that are also implemented there, that we can network in terms of making sure that the classroom learning is relevant to what is there. I think that is the first thing is the balance between clinical stakeholders in the hierarchy level, the unit managers, etc.*

This concurs with the report by Herrin, Hathaway, Jacob, McKeon, Norris, Spears, and Stegbaure (2006:547) in which it is documented that academic– practice collaborations are increasingly viewed as a requisite for the future of nursing and paramount to bridging education preparation and achievement of excellence in professional practice. Kirschling, and Erickson (2010:286) also indicate that collaboration assists in bridging the gap between nursing practice and academia and that it is a necessary prerequisite for assuring a qualified nursing workforce for the future and for positioning nurses to address emerging healthcare needs. The findings are also supported by Cave (2007:647) who describe that educators are far removed from practice and practitioners who are unaware of the relevance of theory to their work.

Collaboration in implementing PBL in the nursing education, which encourages on-going interaction between educators and those who assist students in practice, may be the way forward to create a well-educated nursing workforce to be able to address the increasingly complex health needs of the region.

- Collaboration of different nursing disciplines

The participants expressed the need for collaboration of nurses of different disciplines in both theoretical setting and clinical areas

This is what one nurse educator had to say:

> *I am of the opinion that different nursing disciplines need to collaborate in planning problem development or scenario formulations. I mean we need to work together as Midwifery, community nursing and Psychiatry facilitators. We should stop working in isolation on module learning and teaching issues. If we work together we will be able to prevent fragmentation and compartmentalization of the courses or module. If for example we collaborate in formulating scenarios, clinical placements and evaluations of students. This will be very beneficial and effective. Currently when we plan OSCE assessments we tend to work in isolation or only as a group of midwives or community nurses. I mean we need to collaborate in planning and evaluation of the PBL students. We should start with by collaborating internally as different disciplines in nursing. I believe this will also relieve time pressure on both students and facilitators.*

This is a quote from one nurse manager:

> *In the clinical services, we have people who have specialized in different areas, e.g. theatre, orthopaedic, paediatric, trauma and critical care. These are people who can assist in development of scenario and can also be invited to the classes to teach on those specialized area.*
>
> *I also believe that if those people in the clinical areas can be invited to collaborate in planning clinical learning and evaluation of PBL students it will be beneficial to our products. The students will greatly benefit from such a partnership. The nurse educators may also learn a lot from the clinical staff who have up to date information on health trends and expertise.*

The findings are congruent with the results by Curtis (2007:290) where PBL students and educators valued collaboration with mental health clinicians in developing scenarios and offering of workshops. According to these quotations collaboration with different clinical specialists is likely to create a dynamic bridge between the institutions of learning and professional practice, thus reducing the gap between theory and practice.

Category 2: Interdisciplinary collaboration

Klein (1990:19) describes interdisciplinary as "movement across disciplinary boundaries". This movement is a collaborative effort to synthesize knowledge by integrating people and ideas from different disciplines, thus allowing students to learn curriculum content from an alternative point of view. Inter-disciplinary student-centred collaborations can be a functional reality in the delivery of quality higher educational experiences. Collaboration between the departments servicing nursing education seemed logical because of the importance of teaching/learning and service to the community for all departments. The participants voiced the need for interdisciplinary collaboration. The interdisciplinary collaboration expressed includes: collaboration with other departments within education institution servicing the Department of Nursing and interdisciplinary collaboration in the clinical services.

- Collaboration with other departments within education institution servicing the department of nursing

The participants expressed the idea that interdisciplinary collaboration in implementing PBL with other discipline offering non-nursing courses or modules to the nursing students is a worthy and successful endeavour.

One nurse educator expressed the following:

> *With me, I am not talking about solutions, but my opinion regarding collaboration in PBL. I think if students from only one subject within the university are using PBL and other teachers from other departments are using traditional methods, it becomes a problem. Collaboration in use of PBL in all the subjects is needed.*

Another said this:

> *Collaboration of teachers of all subjects in the nursing programme is a must, especially the non-nursing lecturers. Teachers within the institution should collaborate in teaching the students.*

Another said:

> *I think that is very important because in our case our R425 requires students to do biophysical, microbiology, psychology and sociology. And with us this was a pilot and the other people were not offering PBL and not drawn in at the correct time. We are experiencing problems when such courses are not thought through PBL. Such courses should be led by our students, or bring in someone to teach such courses in our program through PBL in our schools. In other words, in those areas where we need assistance, our service school should have been orientated on PBL, like humanities, science. And I think it is very important that the whole mind set of science service providers should be changed, because if you fail get some people involved from the beginning it may create resistance.*
>
> *I think that whole scenario or the whole humanities should have started with PBL especially in development of cases and scenarios. Because when you develop the case, people from sociology, should be involved to bring the sociological aspect on how to integrate or how to work together. So it is very much important for us to collaborate with our service departments and have same mind set. Because now we will end up having a student using PBL in nursing and going for sociology to do the traditional method.*

Another educator said this:

> *Interdisciplinary or inter professional also refers to colleagues in the clinical area; services, and inter professional bring in eh ---- eh ----- people in biology, pharmacists, and sociology. Other professional who contribute to the nursing programme or those who provide learning experience for our students.*

These findings are supported by authors such as Pumar Mendez, Canga Armayor, Diaz Navarlaz and Wakefield (2007:329); Derbyshire and Machin (2011:241); and Bennett, Gum, Lindeman, Lawn, McAllister, Richards, Kelton and Ward (2011:573) who highlight that inter-professional collaboration in education has potential to promote better understanding between the professions by encouraging students to engage in detailed exploration of health and social roles. These authors posit that inter-professional education has the potential to achieve greater collaboration between health care professionals, by encouraging greater understanding through creation of common knowledge base and culture.

Collaboration with other disciplines within the educational institutions in implementing PBL will likely provide for interdisciplinary teamwork and an environment that supports working in clinical situation involving peers. The overall aim of inter-professional learning is to ensure that the health professionals have the ability to perform their roles as part of a team to provide effective patient care, and should be achieved through a structured programme of shared learning opportunities (Kelley & Aston, 2011:38).

- Inter-disciplinary collaboration in the clinical services

The nurse managers viewed that other members of the multidisciplinary team need to be part of this collaboration because they also provide learning opportunities and information to PBL students. The following quotes are from the nurse managers:

> *I will also wish to see members of the multidisciplinary team being involved in this collaboration. I am referring to people like medical doctors, psychologists, pharmacists and social workers. During our multidisciplinary team meetings and ward rounds, these professionals provide teaching to the PBL students. Most clinical projects of PBL students require information from the MDT. I mean the multidisciplinary team members. In my ward for example some doctors would request the university students to do a presentation. I also believe that every professional in the clinical setting has the teaching responsibility. That is why I strongly believe they need to be part of the collaboration. They will assist in the development of rich scenarios as well as clinical assessments. Pharmacists will also be helpful in developing scenarios for pharmacology. Doctors can be helpful in developing primary health care scenarios, whilst psychologist may assist in developing scenarios for mental health.*

Another manager had this to say:

> *Other multidisciplinary team members such as doctors, social workers and psychologist may also be collaborators in implementing PBL, especially in areas where students can benefit e.g. in designing social and psychology scenarios. Again, they can also be sources of information or consultants during information seeking by students. This will also assist these other professionals in understanding the learning processes in nursing and allow them to share their knowledge and expertise with the nursing students and lecturers. This will kind of provide quality education to the students in clinical settings.*

Involving the multidisciplinary team members in PBL implementation is likely to benefit the nursing students as well as provide an opportunity to other disciplines to contribute to nursing education.

Category 3: Inter-Institutional Collaboration

The participants expressed the need for inter-institutional collaboration.

This is a quote from the participant

> *Oh…I would say…maybe, from my point of view maybe we could talk about collaboration in between our university and other universities. Then we come to collaboration within the university. So we can divide it into sections. We'll start with collaboration with other universities, especially universities of excellence.*

The results coincide with comments by Fisher, Kathryn and Peek (2009:4) who posit that an inter-institutional network can draw on and leverage the existing resources of multiple organizations. The promotion of inter-institutional working is a key educational target for healthcare professionals.

- Collaboration of education and clinical health institutions

The participants indicated the need for nurse education institutions to collaborate with clinical settings especially where PBL students are placed for clinical learning. This is the statement from one nurse manager:

> *Collaboration between clinical and educational institutions is necessary for the benefit of both students and staff members. I mean academia and clinical*

institutions. Remember, students will be supervised by different professional nurses in the clinical facilities and different stakeholders. Thus it is important that collaboration should be there. The students should be able to ask anybody regarding the problems and learning issues. They should be advised and supported. That is why I think collaboration with clinical services is a must.

These sentiments are backed by Lehna and Byrne (1995:178), Connolly and Wilson (2008:87) and Ehrenberg and Häggblom, (2007:73) who are of the opinion that collaboration between nursing education and service recognizes the expertise of both educators and clinicians. The authors also emphasized that education institutions should look to health care facilities to provide learning opportunities, professional role models and employment for graduates.

Collaboration of clinical setting and educational institutions will probably close theory practice divide between that which is taught in the classroom and which is performed in practice.

- Collaboration with Centres of Excellence in implementing PBL

Participants expressed the need to collaborate with Centres of Excellence in PBL or the champions of PBL. The comments below show how participants valued collaboration with champions of PBL:

We'll start with collaboration with other universities, especially universities of excellence. I think it's very much important for us implementing problem-based learning to collaborate with universities of excellence like what we did with University of ***Maastricht*** *where we were trained and they monitored how we developed our modules, our block books and see how we are implementing to assist us, to steer us towards the right direction. And I think continuing collaboration with such universities, is important because then you can maintain the quality until you find your feet.*

Another said:

We must also work together with McMaster as they started it (PBL). I think they must also be part of collaboration for purposes of mentoring and guidance in this PBL. They have agreed to mentor us for example. Uhm..... They invited us to their summer school or institute for PBL. They are willing to come over. Like they have just come not too long ago... Among others they helped us with issue of curriculum development.

The other participant verbalized this:

> *And obviously other collaborators would be, but I can't give names, but could be champions of PBL. Where you can see that the methodology has been researched, there are papers that have been generated from them. They can come in and guide us, because, sometimes it is difficult to define what an expert is, and I think an expert is somebody who is empirically based, that will have a lot of evidence that can support.*

These results are congruent with Crosby and Bryson (2010:222) who recommend that cross-sector collaboration in any public problem requires effective champions who will provide informal and formal leadership.

Collaboration with champions or centres of excellence in PBL is necessary for effective guidance and mentoring.

- Collaboration with other NEI offering PBL in the country.

The following quotes are from participants who perceived the need to collaborate with other institutions in South Africa:

> *It's also ideal to collaborate with another university again, that is in almost the same level as you. And I think because of the political context of South Africa, it's also important for us to collaborate with other universities within South Africa, so that we can maintain the standards and we can improve on what we are doing, because there is not cutting rule of, this is how you should do it. Then you can learn from other people, and come and design your own according to your own situation.*

Another participant said this:

> *Just to add on that in terms of collaboration, we can also have something like exchange programmes whereby we sent maybe a group of our students to other institutions in South Africa to institutions doing PBL. Maybe we sent our students to a block programme for a month or three months to go to see and learn experiences in terms of PBL. Or also exchange of facilitators can also move from one area to another just to see how other people are doing their things there and to make more networking collaboration in the institutions to strengthen up PBL or benchmarking.*

The other verbalized the following:

> *I think I tend to agree with what my colleague has just outlined. It's important if you want to collaborate with other institutions, to make sure that you don't only collaborate with the best, like the ideal situation like she indicated. It also gives you reassurance that, ok, if the other university that is not having the resources like ours it's managing to do that, it means we can also do that. So it sort of it encourages you to move forward. Unlike maybe if you are only collaborating with the ideal situation, wherein you could say, ok, that cannot work in our situation because of 1-2-3. And then if you have got all these institutions then you can see that it is do able, you can continue doing that. And the fact that it's important. This is not...although it's an old strategy, but it's not all the institutions that are utilizing it. So I think it's important for us to make sure that we maintain the mode of using that because if we are not collaborating with others, we are just doing it alone, you could say, no I think because of 1-2-3, it's better maybe to abandon the strategy.*

This is a quote from another educator:

> *I think inter-institutional collaboration is valuable...I think it is valuable. I think that eh...eh...there should be more of those inter-departmental collaboration where.....eh...ehh.. in nursing eh...eh... we are one discipline. We are sometime divorce in the sense that we are functioning under larger faculties, and we are just seen as small department within the larger faculty. So with inter-institutional collaboration, there is an opportunity that the nature of collaboration is very valuable, because you learn best practices from other institutions. Five institutions that are offering PBL and there should be eh...eh...a forum or a space where we can come and showcase our best practices to one another. Because, often the questions we might have, might be addressed by other university, who is also offering rather than staying alone in own faculty that might not be using that methodology in their teaching. So ya...I think that is valuable.*

The findings are supported by literature on inter-institutional collaboration (Fisher et al 2009:4) who viewed inter-institutional network as a possible strategy to draw on and leverage the existing resources of multiple organizations. Although the literature was not specific to implementation of PBL, inter-institutional collaboration will benefit implementation of PBL in nursing education.

- Collaboration with other universities affiliated to universities offering PBL

The participants viewed collaboration with universities affiliated to universities offering PBL as necessary and beneficial.

One educator said this:

> *In this collaboration, we need to take our affiliated universities along in implementing PBL. As we have already started by inviting them to our PBL workshops and summer institute on PBL at McMaster university. This training should be translated in implementation of PBL. Universities have a responsibility towards the affiliated colleges to promote and maintain educational standards. All the universities in South Africa have affiliation agreements with colleges in their regions to provide development and guidance to those colleges. Having adopted PBL as a teaching strategy because of its benefits, those universities should influence the affiliate colleges to use the strategy. I am saying let us collaborate with the affiliate colleges in implementing PBL. We are in a better position to strike the collaboration in implementing PBL because of the proximity our college. The college is only a kilometre away from us. We can easily share the facilities, the students, information and ideas. It was so easy for them to attend our workshops.*

No literature could be traced to support or negate these statements.

3.4.2 Theme 2: Opinions regarding the benefits in collaboration

The word collaboration implies working together for the greater good, but it actually encompasses far more. Benefits of collaboration are for clientele (educational service and health care consumers); staff and institutions. The participants are of the opinion that collaboration is of benefit in many aspects. From this theme the following categories emerged:

- Staff benefits;
- students' benefits;
- benefits for health care consumers; and
- organizational benefits.

Category1: Staff Benefits

The participants all agreed that collaboration will benefit both staff in nursing education institutions and health care services. The following are the sub-categories that emerged from this category: information and expertise sharing and personal development and mentoring.

- Information and expertise sharing

Participants perceived collaboration as beneficial for information and expertise sharing.

The following are quotes from participants:

> *Growth in the sense that ... that... if we collaborate, we share information, then this will encourage research on the subject and contribute more, like we are doing now. This will increase the knowledge on the subject PBL. Is it not that currently we are collaborating with Canadian university which is kind of mentoring us on PBL curricular issues? From this collaboration we are growing. This is how I view it.*

This is what one nurse manager said:

> *I also think we as managers will be able to learn more about the subject (PBL). We will also learn more about new developments in health care service. I think if we collaborate, we will be able to share information and expertise. For example, in Midwifery, there are new guidelines which are developed. With collaboration, we (the nurse manager) can be able to share with you. We also have different midwives with different expertise which will be able to share such expertise with you as nurse educators. The advanced midwives can collaborate or work hand in hand with nurse educators in designing case studies or scenario. They can also be of help in teaching critical midwifery skills and evaluation of students. Those advanced midwives can also be invited to do presentation in class settings. In midwifery we have consultants like advance midwives who are not like an ordinary midwife. For example if in collaboration we need any other issue, we should consult that advance midwife. They will give us expertise in scenario setting, teaching special areas and evaluating students in midwifery. They will be of great importance in developing those students.*

This is supported by Lehna and Byrne (1995:180) who, in their study of collaboration between nursing education institution and hospice health care services, noted benefits of collaboration including increased theoretical knowledge and visibility, increased interest, participation and personal growth. They indicated further that educators will develop awareness of clinical requirements in the various settings (Lehna & Byrne 1995:181; AACN 1997:129; Brinkerhoff 2002:225).

Collaboration is needed in order for nurses in practice and education to chart the future direction of education and make major contribution to health education reform. Collaboration in implementing PBL will probably improve knowledge base for nursing

education and clinical learning and enhance capacity and influence. Sharing of profession specific knowledge during collaboration will improve role clarification among students of healthcare professions.

- Personal development and mentoring

Participants viewed collaboration in implementing PBL as contributing to personal development and growth. The following are quotes from participants:

Quote from the nurse educator:

> *I have a different opinion not related to the challenges. I am looking at this collaboration as a process towards growth and development. Well, before collaboration, we were implementing PBL after having orientation by different people regarding PBL. Until we had this collaboration, which I look at it as a process of development where now it has brought more light into PBL..... This has given us an opportunity to explore more of PBL. Maybe in future we will follow this route of the researcher and search more about certain aspects of PBL. This is how I see it.*
>
> *With collaboration in implementing PBL particularly with centers of excellence like University X, we are being mentored. Remember, we are new comers in PBL thus we benefit from this university which is regarded as a master in PBL. They act as consultants to us and we learn a lot and grow. Valuable information is be is shared and professional development is taking place.*

This quote is from one manager:

> *Specialized nurses from different unit can be invited for scenario development, teaching in class and evaluation of students. Nurse educators or lecturers can come to the wards and clinics and address or equip the staff on PBL and other matters relating to nursing education. The clinical staff will be invited to the PBL workshop will gain knowledge and skills to contribute to nursing education.*

This what another participant said:

> *We will also learn and be mentored if we collaborate with experts in PBL. I mean centers of excellence or champions in PBL. For example recently we had guest from McMaster who were very beneficial in curriculum review in line with PBL as a teaching strategy and philosophy of education. In this way we were kind of mentored regarding implementation of PBL. That is why I strongly believe collaboration with people who stated PBL earlier is necessary. They*

also had opportunity to research and published on the phenomenon, namely PBL. This kind of collaboration provides evidence based practices of PBL from which as newcomers can learn a lot on that.

These findings support results of the study by Williams-Barnard et al (2006:348) wherein the practice nurses valued collaboration in nursing education in terms of increase in professional and intellectual stimulation, enhancing awareness of learning processes, sharing and building knowledge base for nursing education practice and continuing education. These authors also noted that sharing of one's clinical competence provided the clinical nurses an opportunity to give back to the nursing profession.

American Association of Colleges of Nursing (1997:130) also believes that collaboration enhances opportunity for staff to maintain relevance that is on the cutting edge, utilizing current knowledge and skills for cost effective health care delivery. These results also concur with Connolly and Wilson (2008:89) in their review of academia – service collaboration wherein they note that the faculty maintains clinical credibility and competence as well as currency about realities of health care system; curriculum revisions reflect the changing realities of student care.

With effective collaborative team in implementing PBL, experts from the same or different disciplines are linked in such a way that they may build on each other's strengths, backgrounds and experiences and together they would likely to develop r and resolve educational challenges together.

Category 2: Students' benefits

Students as internal customers of nursing education and PBL will benefit from collaboration. Within the professional discipline of nursing, excellence in practice can best be attained when those in education and practice setting combine their efforts and talents in collaboration. The sub categories that emerged here include collaboration professional socialization; obtaining the best from the expertise of collaborators; quality education and competent graduate.

This is how one nurse manager verbalized her opinions:

> *If in the collaboration agreement all roles and responsibilities are clarified we would be in a position to do our best with the student to benefit too. If we (nurse educators and managers) collaborate, we will be part of students' clinical placement and problem/ scenario development, facilitation in clinical setting and evaluation. We will be able to identify correct periods for clinical placement and appropriate learning period in clinical services unlike presently when we just get an allocation lists already developed from the educational institutions. This will contribute to development of a quality and competent nurse.*

This is in line with Barnett, Cross, Shahwan-Akl and Jacob (2010:19) who indicate that collaboration, especially between academia and practice, has greatly improving workplace readiness and provision of sufficient, cost effective quality clinical experience for students.

- Professional Socialization

Professional socialization for nursing students has been described as an act of balance, finding a way to fit in appropriately, while moving between the diverse and sometimes conflicting values of the colleges of nursing and the health care organizations (Calson, Pilhammer & Wann-hanson, 2010:763). The participants were of the opinion that collaboration will assist in professional socialisation of the students. This is what one participant said:

> *I also believe that if those people in the clinical areas can be invited to collaborate in planning clinical learning and evaluation of PBL students; it will be beneficial to our products. The students will greatly benefit from such a partnership. Students will also learn about collaboration as we would be role modelling collaboration to them. They will learn by imitation.*

This findings concur with (Ardahan, Akcusy & Engin, 2010:354; and Brown, 2009:54) who in their study of interdisciplinary collaboration, students expressed more positive attitudes towards collaboration and helped in the development of awareness of team working and roles of each other. Student-Centred collaboration can be a functional reality in the delivery of quality education (Brown, 2009:54). These authors also suggest that collaboration can be used as a strategy to enhance active learning across

disciplines and prepare students for collaborative interactions they will experience in future employment situations (Ardahan et al., 2010:354; and Brown, 2009:54).

Collaboration in implementing PBL appears important in nursing education so that students can benefit from this collaboration and gain an inter-professional perspective early in their career. Sharing of profession specific knowledge during collaboration in implementing PBL is likely to improve role clarification among student healthcare professionals. Thus collaboration in implementing PBL is likely to exert influence on the students' self-perception as insiders and hence the adaption to the practice subculture.

- Obtain the best from the expertise of collaborators

Participants indicated that the students will benefit from expertise of the collaborators. For nursing education, students will benefit from expertise of collaborators as illustrated in this comment about this benefit:

> *Specialized nurses from different unit can be invited for scenario development, teaching in class and evaluation of students. In this way, the students will be benefiting from expertise of both clinical and teaching staff. If we collaborate, the clinical staff will be involved in all curricular activities from planning of PBL curriculum, scenario development and evaluations.*

This concurs with Connolly and Wilson (2008:88) who found that students receive real world clinical instruction from competent and credible clinicians and service guaranteed students for clinical site, fostering recruitment into extern programmes and new graduate into positions.

In collaboration with various clinical experts in health care services for implementing PBL, students are likely to gain a lot from the experts who are collaborative partners.

- Quality nursing education

The statements below describe quality nursing education as a benefit according to one nurse educator:

> *So I think that this improved or build their knowledge and skills...and motivation as well, I think they have started to implement some things that I*

am seeing I don't think it only benefit the students of our programme and improves the quality of our students, I also think it improves the health care outcomes in the clinic settings. So those are...I think those are the two important things for me about collaborating with the clinical practitioners for problem based learning.

One nurse manager puts it this way:

But, the other thing is there would be improvement in whatever service people are involved in. Like, for instance, if you are involved in education, like you are involved in problem-based learning in nursing education, the performance within the situation will be improved. Because those people were given the service, to then benefit from that collaboration, where others would come up with other things, where others would come up with resources that would basically assist in those particular areas.

These findings are backed by Alberto and Hearth (2009:6) who conclude that collaborative efforts in nursing education have enumerable benefits, such as exposure of students to expert areas that they would otherwise only read about and discuss with the faculty.

The results suggest that collaboration in implementing PBL in nursing education enhance the students' capabilities. Collaboration is thus helpful in achieving quality outputs and increased productive learning and thus quality education.

- Competent students

Participants were of the opinion that collaboration will improve quality of patient care as they will be served by graduate who was taught through collaborative efforts. The quotes below depict the voices of the participant:

Yes, with collaboration, we are actually going to have quality in our service of training future professional nurses. It is going to help our students to solve problems by the time they complete we will have sisters or professional nurse who know something through collaboration.
I mean, --- a quality nurse is somebody who is able to solve problems like somebody who can work independently who can contribute to the nursing profession. Not people who will be doing the routine that other people have been doing for hundred years, but------ this PBL----, There is a difference between a nurse who was taught by PBL and a nurse who was taught by a traditional teaching method. I mean with this --- if we can collaborate we are going to have quality nurses because in PBL, students are solving problems.

They will be able to solve problems when they complete or when they are professionals.

The findings are in line with Alberto and Hearth's (2009:6) findings that students recognized the many benefits of collaboration and commented that collaboration added another dimension to their learning, enlightening and opened their eyes to culture.

This implies that collaboration in implementing PBL is likely to enlighten students and provide them with the necessary competencies. This shows that collaboration is thus helpful in achieving quality outputs and increased productivity.

Category 3: Organizational benefits

Collaboration has the potential to benefit the partnering organization. The following subcategories emerged from this category: 1) Sharing of resources and facilities, and 2) effective utilization of resources.

- Sharing of resources and facilities

Participants expressed that collaboration in implementing PBL in nursing education would promote sharing of resources. The statement below depicts sharing of resources as a positive outcome of collaboration:

Um...generally, one would still say.... we have limited resources, especially in implementation. Like for instance, people would be having limited resources in people who are initiating or advancing the PBL itself. For instance, in clinical area,... if I may give example.... People might not necessarily have the relevant resource that they could use in trying to ensure that people understand how PBL could be implemented. Resources like maybe people who can be used as clients to really participate to understand how PBL works. Resources like where people could be assisted to get information when in the clinical areas. Resources like where people are basically assisted to deal with IT issues. So, to me, those are resource limitations, and if we could then work together, that particular resource limitation could be addressed.

The findings are in line with those from an integrative review by Beal (2012:2) which reveals that collaborative partnerships enhance sharing of resources and facilities. According to Bleich, Hewlett, Miller and Bender (2004:289), who are regarded as thought leaders on topic of academic- service collaborative partnerships in nursing, the

benefits that are cited by AACN in 1990 remain today. These include maximization of resources and sharing. The findings are supported by literature on inter-institutional collaboration (Fisher et al., 2009:4) who viewed inter-institutional network as a possible strategy to draw on and leverage the existing resources of collaborating organizations. It appears that Collaboration in implementing PBL in nursing education has a potential for enhancing organizational sharing of resources with collaborative partners.

- Effective utilization of resources

Participants viewed collaboration as beneficial as it promote effective utilization of minimal or scared resources. As one nurse manager interviewed puts it:

> *I think as collaborators we will be able to share information and resources, both at individual and institutional level as well as team level. Institutions will share the limited resources and thus promoting effective utilization of the resources. Let us take for example the newly acquired simulation lab for PBL clinical learning. This can be used by partnering institutions like the affiliated college and probable other campus whilst still making means to acquire those expensive facilities. This will result in effective utilization of available resources by partnering institutions, and teams. As I learned during the workshop, PBL is a very resource intense teaching strategy, and it is not every nursing education institution that may afford the resources. With collaboration, those who have may share and this will result in effective use of resource.*

Bentley and Seaback (2011:51) viewed inter-professional and intra-professional collaborations as imperative, particularly in the view of pending budget cuts for school of nursing. These authors in their study of faculty development with the use of collaboration in inter-professional collaboration found that outcomes of collaborative partnerships include regional sharing of resources and expanded collaboration between partners. Gitlin, Lyons and Kolodner (1994:16) endorse the view that collaborative and interdisciplinary teamwork is a way to overcome limited financial and personnel resources and to ensure that programmes and knowledge development are responsive to consumer needs.

3.4.3 Theme 3: Factors Contributing to a Successful Collaboration

Modified D'Amour's et al.'s four dimensional collaboration model (2008:4) was used to guide the analysis of data related to factors sustaining and challenging collaboration in

implementing PBL in nursing education. Included is governance; shared goals and vision, internalization; and formalization. The word collaboration implies working together for the greater good, but it actually encompasses far more. Several preconditions must be in place in order for collaboration to be successful. The following categories emerged from this theme (1) Governance /Leadership; (2) Communication and (3) Active participation.

Category1: Governance and Leadership

D'Amour et al., (2008:5) are of the opinion that leadership is necessary for the development of inter-professional and inter-organizational collaboration. Leadership is a process by which a person influences others to accomplish an objective and directs the organization in a way that makes it more cohesive and coherent. To inspire collaborators into higher levels of teamwork, there are certain things you must be, know, and do.

- Commitment from Strategic Managers

Collins Dictionary (2009:151) defines commitment as dedication to a cause or principle. The participants perceived commitment in of strategic managers as necessary for the success of the collaboration in implementing PBL. The following are the quotes from the participants:

> *The nurse mangers, especially at strategic position should be involved from the planning phase of problem based learning curriculum. They should be part and parcel of planning, implementation and evaluation of problem based learning. I think firstly the heads of institutions, namely, the CEO of the hospital, the district manager, the nursing college principal and the head of department of nursing should agree to collaborate and kind of formalize this agreement ----- silence ------- silence.*

The other participant had this to say:

> *Ok ---- eh---- firstly people in authority must buy in the idea of collaboration in implementing problem based learning for the R425 (four year nursing degree/diploma programme) students. I mean the D4 (four year nursing degree/diploma) programme or the pre-registration diploma or degree. I think in this collaboration the Deputy Director nursing services should be part of leadership. Because she is in charge of nursing, she should form part of*

leadership and governance of the collaboration. I believe from the university, it will be the head of the department. But those collaborators should work equally... there should be no one who is on above the other. I am talking in relation to the deputy director and I believe collaboration should start there. In this way we will benefit.

Another had this to say:

Like I said earlier, our top management should know about this collaboration. If possible..... they should also be trained on PBL. They should inform about PBL so that they know and be able to support at operational level. I agree and acknowledge that they know that students are being placed in the wards for clinical learning. But they should know that they should play a part in development of the students. For example, if as a midwife, I am requested to teach neonatal resuscitation; management should cooperate and allow me to go to the nursing education institution. It should not be a problem. The top management should release me as an advance midwives to share my expertise with the students and nurse educators. Top management should know ..... They should know the importance of collaboration.

These results are in line with Connolly and Wilson (2008:89), and Brinkerhoff (2002:221) who note that collaboration is beneficial when representatives from collaborating institutions are participating in strategic planning and evaluation of outcomes. According to Brinkerhoff (2002:221), senior management support contributes to collaborative partnership performance both directly and indirectly. Directly, such support translates into resource commitments (e.g., financial, personnel and others) and often entails flexibility and consequently maximizes performance. Indirectly, the participation of and support of senior management symbolizes the organizational commitment to collaboration and contribute to trust building among the collaborators (Brinkerhoff, 2002:221). Barnett et al., (2010:18) and Griffith and Crookes (2006:192) emphasize that strong leadership and genuine managerial commitment to work together are important to successful collaboration. With encouragement and support from senior levels of participating organizations, a platform of shared governance, collaborators are enabled to freely discuss and respond to related nursing education issues (Barnett et al., 2010:18).

These findings are also backed by McWhirter, Courage, and Yearwood-Dixon (2003:136) who state that elements necessary for collaboration to succeed include commitment of time, energy and resources. The more the collaborators are involved in

design and implementation of collaborative ventures, the more likely each will feel ownership and therefore on-going commitment to collaboration (McWhirter et al., 2003:136). Successful collaborations involve commitment to improvement, efficiency and consideration of partners in the context of major decision (Casey, 2011:305).

Collaboration in implementing PBL cannot be successful without senior management support and commitment of time and resources. Strategic planning and commissioning is crucial in translating shared goals into achievable outcomes. Collaboration in implementing PBL in nursing education is more likely to succeed if it has committed leaders and effective champions to provide formal and informal leadership (Crosby & Bryson, 2010:222).

- Common Goal

A significant attribute of collaboration is that two or more individuals must be involved in a joint venture, typically one of an intellectual nature with a common goal (Henneman, Lee & Cohen, 1995:106; and AACN, 1997:131). The participants perceived having a common goal as leading to successful collaboration in implementing of PBL. These are the statements of participants:

> *Common goal in collaboration is very important in any collaboration. In this instance, our common goal will be training a nurse through PBL implementation. If we have shared mission, vision and goals, our collaboration will be in the right direction. We must see the same hill and move toward it. This, I mean we must have a common goal as collaborators.*

The other one had this to say:

> *Yes, we must have one goal; have commitment to the goal and collaboration. We must respect each other, we must understand each other. This is very important in collaboration. If there is new information, we managers in clinical services we must cascade the information, continuous training on PBL.*

This concurs with Patel et al (2012:14), Cao and Zhang (2011:178), D'Amour et al., (2008:15), Clarin (2007:541), Owen and Grealish (2006:18) and AACN (1997:131) who state that shared goals and vision must be established by collaborators. These authors suggest that the identification and sharing of common goals is an essential point of departure for a collaborative undertaking. A clear, common organizational and

objectives can provide a framework within which to define collaboration strategies and goals; and determine the success of collaborative projects. Clearly defined goals provide a common ground for communication and structure about collaborative activities (Patel et al., 2012:14).

Existence of a shared goal is likely to be the key element that can contribute to a successful collaboration in implementing PBL. Specifically, the process of collaboration in implementing PBL will occur if the involved partners, at some level, share at least one 'mutually agreed upon or mutually defined goal. Therefore, the critical importance of clear shared goal is stressed in collaboration in implementing PBL in nursing education.

- Contract/ Agreement

In any collaboration, there must be an agreement about what problem is to be addressed and how multiple problems are to be prioritized (D'Amour et al., 2008:15l). A variety of agencies and disciplines play unique, but overlapping, roles in nursing education.

The participants verbalized the need for a contract or a Memorandum of Understanding (MOU). This requirement was verbalized in different ways. Some referred to this as service level agreement, agency agreement and agreement contract.

This is what the participant said:

> *I think eh...eh... under what was discussed in collaborations between institutions. I think there is to be an understanding between departments ehm...ehm... I don't know if you call that a MOU.... There has to be some agreements...eh...some understanding of what you expect from your counterparts... I think that is very important.*
> *Maybe we should have a MOU. But the MOU should be facilitated from the university with other collaborators. Because if it's University of Venda and you need to collaborate with University of* ***Maastricht****, clinical services, and one university national, it means that University of Venda is the one that will be able to bring the people under one pot. You can work as a team, maybe to have workshops at UNIVEN, although sometimes University of Venda staff may visit* ***Maastricht*** *or may visit Eduardo Mondlana, may visit, maybe University of Kwazulu Natal, but the collaboration being controlled by the university...that made the collaboration in order to maintain the standard. Then together you can map out can you have maybe in-service workshops?*

How often per year, or once per year? Together as a group...if you identify that this university is doing good in this aspect, let's say clinical, like University of Western Cape, then you can focus your clinical...more strengthen the collaboration on clinical with the university that has got excellence in clinical, in problem-based clinical learning. And if you feel this university is more powerful in theoretical, then you can also visit that university and gain more information. I don't know, that's how I think.

One nursing manager said in relation to formalization of collaboration:

Generally, for collaboration to be formalized..... It's basically for people to come together. Either coming together or engaging new issues of LSA, that is, level of service agreement.... Where they would then understand as we work together, this is what I am expecting from this partner, and this is what I should be giving that particular partner or collaborator. So that then they understand what is it that we are sharing, what is it that they are giving each other, and then how are they taking the process forward.

Another said this:

I think we should have a binding agreement. We should sign an agreement that will bind all of us to ensure how this collaboration is going to unfold. In the agreement, we will have terms of reference in terms of meetings, training, assessing students, in terms of joint appointment of preceptors or whatever. I think we need to have documentation of memorandum of understanding, stipulating how this collaboration is going to unfold.

These responses concur with the models by D'Amour et al., (2008:15), Clarin (2007:541), Owen and Grealish (2006:18) that advocate that formalization is an important means of clarifying the various partners' responsibilities and negotiating how responsibilities are shared. For professionals, it is important to know what is expected of them and what they can expect of others. This model also suggests that collaboration is influenced less by the degree of formalization than by the consensus that emerges around formalization mechanisms and the specific rules that are implemented. Edwards and Smith (1998:149) added by stating that one helpful communication strategy has been to create "memos of understanding" from meetings or sessions. In a Memorandum of Understanding (MOU), key points of the discussions as well as the outcomes are noted. MOU (1) allows collaborators to agree on what was said or planned; (2) are effective in keeping everyone moving forward, up to date and on target (Edwards & Smith 1998:149).

These results are also in congruent with AACN (1995:130), Casey (2011:307), Horwarth and Morrison (2007:56) who recommend that for collaboration to succeed, a formal written agreement describing the type and level of collaboration and various roles should be in place. Written policies and procedures determine functions and roles of individuals from collaborating partners. The authors suggest that the more formalized collaboration is, the more likely it is to be maintained.

For collaboration in implementing PBL in nursing education to be successful, written agreements or Memoranda of Understanding or interagency agreements should be in place so that collaborative partners are aware of roles, responsibilities and expectations. According to Crosby and Bryson (2010:221), formal agreements have an advantage of supporting accountability. The form and content of collaboration's initial agreement, as well as the processes collaboration leaders use to formulate them; will affect the outcomes of the collaboration work (Crosby & Bryson, 2010:221).

- Continuous Development of all collaborators on PBL

Participants perceived the need to develop the collaborators on PBL so that the collaborators are conversant with this teaching strategy. The statements below illustrate the need for training in PBL for success of the collaboration in implementing PBL in nursing education. One participant said this:

> *The university and the college must also train and develop the nurse managers on the use of PBL so that we are able to speak the same language. The clinical staff should be invited to the workshops on PBL.*

This is what one manager verbalized:

> *I think understanding of this problem based learning.... If we are developed well on this problem based learning so that we understand. We will definitely know what students expect and we will be able to support, mentor and advise them. For example, all the learning objectives you send to us, we also need to align ourselves with those.*

Another participant said:

> *In collaboration, the partners should develop each other, i.e., take each other along on PBL strategy. This can be done by sessional workshops, training and development and allowing them to teach the students via PBL method.*

This was said by one nurse educator:

> *If you are collaborating and there is an MOU, that can stipulate what is expected from the university side, what is expected from the hospitals side... we can get all co-operations dnd...and if you involve them...run workshops... try to influence the use of the method by the nursing schools that is within the hospital and colleges so that when whole mind set is changed...or you influence the change of mindset of everybody...because now student that we receive from high schools, already are in outcome based educators mindset.*

This is supported by Williams and Beatti (2008:152) in their systematic review wherein they suggested the clinical personnel need training and development on PBL in order to assist undergraduate health professionals in PBL. Findings by Dorman, Boshuizen, King and Scherpbier (2005:163) confirm the need for development of clinical professionals on PBL as PBL methods did not automatically transfer in clinical teaching. In their study, Williams and Beattie (2008:151), identify that a lack of understanding of the basic principles of PBL as interfering with the teaching process in the clinical area, and clinicians often reverted to more traditional method and old habits rather than facilitating critical thinking in true PBL style. Patel, Pettitt and Wilson (2012:9) emphasize that training is required for work task completion, and the act of collaboration itself. Personal and professional development training opportunities on PBL are associated with improved productivity and collaborators' satisfaction. It also provides opportunities for collaborators to acquire new skills or improve existing skills and develop shared mental models. These training activities are crucial part of managing change among the collaborators (Patel et al., 2012:9).

- Monitoring and evaluation in collaboration

Monitoring and evaluation (M&E) of collaboration activities, projects and programmes are increasingly recognized as important functions of every collaborator in health care and education settings. For many times collaboration in project and activities are hampered because little attention is given to monitoring and evaluation. Participants perceived M&E as vital components for a successful collaboration in implanting PBL. This point was clearly expressed by participants.

One nurse educator verbalized this:

I think we should also develop something like an evaluation tool to evaluate if everybody is following the agreement. To see if the collaboration is working, ... rather than having an agreement and not following it up. ...maybe an evaluation tool can help. I think monitoring and evaluation of the collaboration is mandatory to continuously evaluate this collaboration. We can maybe evaluate the collaboration after every semester and at the end of every year. Various methods such as interviews, self and peer reviews may be helpful.

One nurse manager said this:

Another critical aspect for a successful collaboration is a continuous monitoring and evaluation to assess the progress and success of the collaborative partnerships in implementing PBL. The collaboration can be assessed regularly by the collaborators including the recipients of the collaboration, namely, the students. Clients satisfaction interviews, self-evaluations using partnerships tools.

Literature (Owen & Grealish, 2006:18; Patel et al., 2012:8; and Crosby & Bryson 2010:227) supports the findings by stating that the monitoring and evaluation of collaborative processes to ensure that decisions agreed upon are honoured within the scope and parameters. Mutual performance monitoring is associated with effective teams and involves team members monitoring each other's work in collaboration (Patel et al., 2012:8). The authors further stated that evaluating collaboration effectiveness involves assessing how team worked together to achieve outcomes and whether the team is able to work together in future. It includes assessing individual as well as collective efforts depending on the type of task.

Collaboration in implementing PBL is more likely to create great value if leaders engage in regular assessment, monitoring and evaluation. This will highlight learning from successes and failures and rally partners for future endeavours (Crosby & Bryson, 2010:222).

Category 2: Communication

Successful collaboration is characterized by clear communication, true dialogue, active listening, an awareness and appreciation of differences and ability to negotiate options. Participants verbalized communication as a critical tool in any collaborative effort. The following is what one of the managers verbalized:

Communication is a very important tool in any partnership. There must be open and regular communication between the collaborators. It can be through regular meetings, written communication, for example through memos, e-mails. But schedule meetings with clear agendas will contribute to success.

The following emerged in this category of communication: open communication, regular meetings, mutual understanding and respect, collegial relation and mutual trust

- Open communication

Participants indicated the need for open communication for collaboration to be successful. This is what one manager said:

If you are in partnership just like in marriage you must trust each other. You must be open. You must communicate now and then. Collaboration requires communication. Every now and then you must meet. There must be continuous feedbacks, workshops on this PBL. We want everybody to be on the same level about this PBL.

Another manager verbalized this:

Communication in collaboration should be by phoning, writing reports, e-mailing and by face to face meetings where we would be able to discuss and interrogate collaboration issues

These perceptions confirm Jenerette et al (2008: 18) who state that the ability to communicate effectively is an important requirement to collaboration. The authors further stipulated that effective communication requires that members listen to each other's perspective yet are assertive in presenting their point of view. It is through communication that members of the team articulate their continuation to the planning, goal-setting and evaluation process. Effective communication also allows team members to negotiate constructively with one another. Communication is a critical requirement in that it serves as the vehicle for articulating other important precursors to collaboration such as respect, sharing and trust.

Literature (Owen & Grealish 2006 :16 ; Jenerette et al 2008: 18; Barnette 2010:18; Meunie- FitzHugh & Piercy 2010:295 and Patel, Pettitt & Wilson 2012: 9) confirms that communication promote collaboration. Cao and Zhang (2011:178) suggest that collaborative communication should be open, frequent, balanced, two way and

multilevel. These authors emphasized both formal and informal communication as vital to collaborative partnerships. Lehna and Byrne (1997:77), in their successful collaboration between nurse educators and clinical practitioners at hospice, state that communication must be honest, respectful, and purposeful. Successful collaborative nursing education practice and collaborative health care practice need to encompass all of these conditions. Communication in collaborative work underpins how people understand each other and how knowledge is transferred (Patel et al 2012:9).

- Regular meetings

All participants perceived regular meetings as necessary for a successful collaboration in implementing PBL for pre- registration nursing education. One manager verbalized this:

> *We can communicate through meetings, memos emails and notices or faxes to each other. We should be able to give each other report and feedback on this collaboration. For example when students are sent to me for clinical learning I should be sent a report. I also have to send a report during month end about the students who spent time in my area.*

Another said this:

> *Communication, I mean ---- uhm—eh---- face to face communication. You must have regular meetings with these people and talk about this PBL and working. Find out how they implement it in clinical areas. We must also find out how it is implemented in the university. This can be shared via meetings; conferences and workshops. Even for example when you send the students to the clinical areas you can pick up a phone and inform the clinical people that you are bringing students there. Indicate that here in class you have taught them via PBL, please give the problem to solve in the clinical area so that they implement what they have learned in class*

This what the educators said:

> *...Meeting can be held regularly depending on the need. E.g. monthly basis if there is need or after three months or six months. The needs of the collaboration will dictate the frequency of meetings.*
> *Ya...ya...with open communication, we can have block meetings were you can discuss your problem that you may encounter...Lets say during the session or after that block you can have a meeting to evaluate how was the block. What problems did you encounter? What were the causes? Can we revisit some of the cases and so on. Such will ensure open communication. You know, if you've got a problem you can be helped. Sometimes, we are*

human, you can be sick, you can be absent...It should be known...it should be communicated that you know I cannot be in. Maybe I was having facilitation or you have gone to a meeting, or you have gone for training, then it should be clearly known about everybody's movement, e.g. It should be known that my colleagues are not there. Then you can handle his/or her group and so on. This will help...so that you can prepare yourself in time and you can revisit the case and go to facilitate It means that when there is open communication we all facilitators, we must report to one another.
I also think open communication would mean that you are able to approach one another with no boundaries. Eh...eh...you know that as colleagues, there are no areas such as "no go areas". That is open communication. You know that if you have a problem, you are able to approach so and so without problems.

These statements concur with Meunier-FitzHugh and Piercy (2010:295), Patel, Pettitt and Wilson (2012:9), Kinnaman and Bleich (2004:314), and Cao and Zhang (2011:178) whose exploratory findings highlighted that formal communication through meetings and conferences promote collaboration. Harvath, Flahert, White, Talerico and Hayden (2007:20) attest that regular meetings nurtured their collaborative partnerships in integrating research in their clinical practices.

- Mutual understanding and respect

Re-requisite to effective collaboration include mutual understanding and collaborators' tolerance for sharing power and willingness to adapt their operations and procedures to facilitate the partnership's performance (Montiel-Overall 2005:5; Brinkerhoff 2002:220).

Participants verbalized mutual understanding and respect as necessary for collaboration in implementing PBL to work. These are quotes from participants:

And again with open communication ... your ...relationship as colleagues must guarantee that I will be able to expose my point of view without being ridiculed. Because you cannot know everything, so we must related in such a way that there is no ridicule on part of the person who is bringing something to the table (Acknowledgement from all partners) That will mean we have mutual trust, mutual respect. Those are the principles that must drive the way we relate as colleagues in this collaboration. Because of we do not have mutual trust, mutual respect it easily spills off to classes. It means that person can even comment negatively maybe about the objectives that came up from other tutorial staff or group...maybe saying that is not right. Then the students will let out and you will lose your credibility and your trust in yourself...(Acknowledgment by most participants)

One manager said:

> *I think mutual understanding and respect are very vital for the collaboration to succeed. If we do not respect each other as nurse managers and educators problems will erupt and students may pick that up and use it as excuses not to do their work. We should at all times protect the integrity of each other and make efforts to understand each other When conflicts arise we should resolve those amicably and effectively.*

These results concur with Brinkerhoff (2002:225) and Kinnaman and Bleich (2004:311) who identify mutual respect as a key component of mutuality in collaboration. The author further states that mutual respect rests on an explicit recognition of the indispensability of each partner and its contribution. Collaborators are aware of each other's unique and strengths and seek to effectively incorporate that into collaboration. Mutual respect presumes that all negotiation and agreements are made in good faith implying full disclosure of actor specific objectives. Mutual respect is manifested in the extent to which collaborators the collaborators the implication of its action in collaboration. This includes the scheduling of meetings, reporting requirements, and sensitivity to key relationships and potential conflict.

- Non- hierarchical relationship characterized by mutual trust and respect

Non-hierarchical relationships; mutual trust and respect as necessary for a successful collaboration in implementing PBL. A non-hierarchical relationship refers to relationships wherein no collaborators are perceived as senior to others. According to the Free Dictionary (www.thefreedictionary.com) non- hierarchical refers to relationship that is not classified according to successive levels or layers.

Participants perceived non-hierarchical relationships as vital for the success of collaborations the following are the quotes from participants:

> *I mean, all of us must know that when you are in this collaboration when we are in meeting; we are equal. Nobody is more important than the other. For example McMaster University must not think they are more important than the rest of us. Even if they started PBL before us in this collaboration we should be equal. For example if our neighbours are starting PBL next year, we must not think we are better than them. Nobody must see himself/herself as superior to the others. I mean the relationship in this collaboration must be*

non- hierarchical. We must make sure that all of us we are on the same level. We must trust and respect each other. We are all equal.

Another said:

I think first of all recognition of status of each person and flattened hierarchy. People should not assume MBCH (medical doctor) is the person on the upper position rather recognize the actual expertise and the most experienced in that area. Eh...eh... I think that is probably critical to the success of inter-disciplinary collaboration in implementing problem-based learning. Eh...eh...so far in our dealings, I think it is probably going to be ok, so we will see, but I think that is the core to it.

This perception is in line with Casey (2011:305), Owen and Grealish (2006:16), Harvarth et al., (2007:22); and Carnwell and Carson (ND:11) who viewed successful collaborative relationships as dependent on team oriented environment with non-hierarchical structures and the participants share decision making and common ownership of the resolution of challenges. Brinkerhoff (2002:224) refers to this as mutuality and included is equality in decision making, resource exchange, reciprocity (as opposed to hierarchical).

Equality or flattened hierarchical relations are likely to be another conscious strategy to nurture and strengthen collaboration in implementing PBL in nursing education.

These are the quotes from participants:

And again with open communication ... your ...relationship as colleagues must guarantee that I will be able to expose my point of view without being ridiculed. Because you cannot know everything, so we must relate in such a way that there is no ridicule on part of the person who is bringing something to the table. (Acknowledgement from all participants). That will mean we have mutual trust, mutual respect. Those are the principles that must drive the way we relate as colleagues in this collaboration. Because of we do not have mutual trust, mutual respect it easily spills off to classes. It means that person can even comment negatively maybe about the objectives that came up from other tutorial staff or group...maybe saying that is not right. Then the students will let out and you will lose your credibility and your trust in yourself... (acknowledgment by all participants and followed by silence)

These responses are in line with the studies by D' Amour et al (2008:5), Casey (2011:305, Owen and Grealish (2006:16). Kinnaman and Bleich (2004:311) ; and Carnwell and Carson (ND:11) wherein, according to the participants, collaboration is possible only when they have trust in each other's competencies and ability to assume

responsibilities (that is, when goodwill exists). These authors also posit that trust reduces uncertainty. When there is too much uncertainty, the data show that health professionals hold on to responsibility for their clients as long as possible to avoid collaborating. Such actions run counter to the goal of constructing networks. Professionals use the results of collaboration to evaluate each other and build trust. Brickerhoff (2002:221) and Montiel-Overall (2005:5) advocate trust that is character-based including integrity, honesty and reliability as the ingredients of trust in collaboration. Good collaborative relationships are built on mutual trust and respect and these should be established early on in a new project or team (Horwath & Morrison 2007:64; and Patel et al., 2012:13). Trust and a willingness to communicate and share information openly indicate the organizations together, but collaboration partners may initially not fully trust each other collaboration readiness. According to Crosby and Bryson (2010:223), trusting relationships are essential to facilitate work of collaboration and hold the collaboration.

Effective collaboration in implementing PBL in nursing education requires trust, and effective communication is a key component of establishing trust (Horwath & Morrison, 2007:64). Trust is personal/informal and impersonal/ institutionalized; a climate of trust is likely to enable collaborators to engage with each other in implementing PBL in nursing education. Collaboration in implementing PBL is more likely to succeed if leaders make sure that trust building is continuous

Category 3: Active participation of collaborators

Active participation in collaborative endeavours is perceived as necessary for collaboration success. The sub-categories that emerged from this category include: participation from goal setting and involvement in PBL curriculum planning, implementation and evaluation.

- Participation from goal setting

Participants viewed participation and involvement of collaborative partners in planning commencing with goal setting as critical for the success of the project.

- Involvement in PBL curriculum planning, implementation and evaluation

This was articulated by one nurse educator:

> *Again, before I forget, collaboration in implementing PBL requires active participation of nurses from the clinical space. In particular, they should be involved from the beginning, for example planning of the PBL curriculum, implementation and evaluation. Clinical practitioners will can contribute a lot during scenario development, facilitation of clinical learning as well as evaluation of PBL clinical learning Nurse educators have the tendency of inviting people when issues are already on the way or during implementation phase. I suggest that let us ensure that all collaborators participate in decision making and problem solving. This will promote ownership of collaborative decisions and activities. Active participation is also valuable in enhancing shared accountability and responsibility.*

The literature (Patel, Pettit and Wilson 2012:9; and Brinkerhoff 2002:225) emphasizes that active participation of all member partners according to their cooperative advantage and agreed roles. This includes decision making, as well as participation in meetings relevant discussions and program activities. The authors are of the opinion that collaborative decision making will involve both intellectual judgment tasks and should be supported. Harvath, Flaherty-Robb, White, Talerico, and Hayden (2007:23) emphasize involvement and participation of partners from the inception of collaborative project as an essential part of the on-going success. In their best practice initiative partnership model, they attended to collaboration to keep the alliances strong the involved all partners continuously. The collaborators were involved in budgetary decisions and were empowered to join in decision making other budgetary items. They recognized them as equal partners (Harvarth et al., 2007:22).

3.4.4 Theme 4: Opinions regarding barriers in collaboration

When collaborative practice occurs, several barriers may be encountered. Collaboration barriers are generated by factors creating different types of collaborative distance impacting negatively collaboration effectiveness and efficiency. Kirschling and Erickson (2010:286) state that efforts to forge and implement academe-service collaboration can be fraught with obstacles that prevent the collaborative partnership from moving forward or limit its dissemination. The following categories emerged from this theme (1) lack of resources and (2) poor human relationships.

Category 1: Lack of resources

According to most, significant barrier to collaboration is financial. Budget holders are responsible for the funding of their own primary goal, for example health sector's focus is on patient care and education institution primary focus is education. Participants perceived funding as the major barrier in collaboration in implementing PBL.

This was said by a manager:

> *I think the stumbling block in collaboration is mostly funding. If we do not have money to pay transport to go for meetings; hosting meetings; provide learning equipment and facilities, then collaboration will not work. Another problem is poor human relations among the collaborators. For example, if we undermine each other, we are not committed and have poor communication. Then we will fail to assist the students. Honesty, respect, commitment and communication are needed in partnership. This is just like in marriage; those attributes are needed for a successful collaboration. I strongly believe partnership will go well if we set common goals together; contribute substantially to collaboration; relate on equal basis and share problems and challenges and communicate openly.*
> *Funding (demonstrating with hand, all participants laughed). Funding, funding. I think that it is the main barrier". ...uhm...uhm...ja...yes* (acknowledgement by all participants)
> *Because if you are introducing a method, you want to bring stake holders together ...how do you take someone from Kwa-Zulu Natal? That person cannot come here from far because you are the people who need him, so the university as an institution must commit funding this collaboration, to run that project or that system. You cannot call someone from the clinical area and not even give tea and lunch. Maybe the clinical area will not give transport. And I cannot use a taxi and use my money to come and help you. I think there must be funding involved. Even if we are not taking them out of their institution, we are going to do workshops; there must be paper for hand-outs, and so on. I think funding is a number one barrier to collaboration.*
> *Chelete...Chelete* (All participants laughing) *Money, money ...Chelete is needed (meaning money is needed).*

This is congruent with Barnette et al., (2010:18) and Kirschling and Erickson (2010:287) who reported that the most significant barrier to collaboration in education is financial. Budget holders are responsible for the education funding of their own professional group.

It seems therefore that all collaborative endeavours need to be budgeted for to ensure effective collaboration in implementing PBL. This will probably assist in the smooth running of collaborative activities.

- Lack of funding for transports

Participants perceived lack of money for transport as a barrier to collaboration:

> *I also think lack of funds can make collaboration difficult. If we do not have funding to service the collaboration... we will have problems. I believe we need money for transport to visit collaborators or for collaborators to meet and communicate face to face. As much as we can rely of other means of formal communication such as e-mails, we still need to meet face to face to discuss. This will definitely require funding to travel to those meeting. Even if it is quarter yearly, this needs funding. Our collaborators will also require transportation to attend the meetings or come to tutorial sessions to participate in implementation of PBL.*

Another nurse manager verbalized this:

> *You know our organizations run on a very tight budget. For example in hospitals and clinics priority is direct patient care. Anything that is not directly linked to patient care might not be given a second thought when it comes to budgeting especially money. At times, getting money for meetings can be a challenge.*

The results are supported by Barnette et al., (2010:18) and Kirschling and Erickson (2010:287) who report that collaborations and partnerships can be resource and time consuming as people have to travel considerable distances to attend face to face meetings. Securing funding resources and assuring financial stability is a barrier to successful collaboration (Kirschling & Erickson, 2010:287). According to Priest et al., (2007:581) collaborative work can be impeded by logistical challenges if collaborative partners are in two geographically distant institutions. Logistical challenges will include arranging meetings, coordination and communication (Priest et al., 2007:581).

Lack of funding can be an impediment to collaboration in implementing PBL in nursing education and prevent the collaborative partnership from moving forward or limit its dissemination.

- Time pressure

Participants indicated that collaborative work in implementing PBL requires time to attend to collaborative tasks. The statement below depicts the opinion of one educator:

> *I also think time constraints can also be a limitation in collaborative work, especially for the clinical staff that is always having this shortage for staff of personnel. At times even assisting PBL students with information or learning opportunities is challenging for staff because of the unpredictable nature of the clinical settings. You find that Students are not well attended and this frustrates the collaborative endeavours in implementing PBL.*

The sentiments are echoed by Priest et al., (2007:581) who indicate that the most prominent challenge in collaborative work are lack of time and competing pressures that result in feelings of guilt and frustrations. Kirschling and Erickson (2010:287) and Priest et al., (2007:581) also report that collaborations and partnerships can be resource and time consuming as people have to deal with the workload of employment including collaboration activities and domestic commitments.

Category 2: Poor human relationships

All participants perceived poor human relations as barriers to effective collaboration. These are quotes from some of the participants:

> *Poor relationships between collaborators.... For e.g., if you don't communicate it is not healthy. You must strive towards a healthy relationship. You find that the people in the hospital...if the relationship is not healthy, they don't approve of you. And...and...and maybe when they have problems with students they don't attend to the students problems towards achieving successful solutions. They attend to students problems towards the direction of not having the students anymore. I don't know if you understand what I mean, or trying to say. Working towards stopping the relationship or their relationship with you...than when a student is doing something wrong. We must work towards assisting students to become something better. You find that the professional nurses, in the ward..... When they have problems with students in the ward, their main focus is not having the students in the ward anymore. This because of poor relationships....*

- Lack of cooperation

Cooperation refers to assistance or willingness to assist. Business dictionary.com defines cooperation as voluntary arrangement in which two or more entities engage in a mutually beneficial exchange instead of competing. According to participants if this is

lacking, collaboration in implementing PBL will not succeed. The participants verbalized the following:

> *I think lack of cooperation. ..... If we are not cooperating well..... If managers are not fully participating or buying in teaching of students..... Especially as managers, if we focus only on shortage of staff and not looking at the learning needs of students. These can make partnership to fail. The managers must see the need for collaboration in teaching of students. Again, blaming of each other particularly the service staff and nurse educators.... If we say they are doing this that. Finger pointing always lead to lack of cooperation....*

Another manager said this:

> *I think cooperation is very important in this collaboration if we work together and understand each other we will be able to help these students in problem based learning.*

These sentiments are backed by Clarin (2007:541); Montiel-Overall (2005:11); Kinnaman and Bleich (2004: 315) who purport that were lack of cooperation is lacking is a "red flag" to successful collaboration. Kinnaman and Bleich (2004:315) describe cooperation as a sign that people are actively working together for mutual benefit. In collaboration in implementing PBL, cooperation is likely to signify that partners are actively working together for mutual benefit. Cooperation is best recognized by recurring interpersonal communication people over time on shared objectives.

- Poor communication

The participants perceived the greatest barrier to enhanced collaboration as poor communication. This statement depicts one manager's opinion regarding this barrier:

> *If we don't keep on communicating about how this PBL works. I think those are barriers for collaboration in PBL. Ineffective communication is a barrier in any collaborative partnerships. That is why earlier I recommended open, frequent and regular communication through meeting, memos and e-mails.*

The results are supported by Meunier-FuztHugh and Piercy (2009:294), Horwarth and Morrison (2007:64) and Clarin (2007:541) who suggest that poor communication is the greatest impediment to successful collaboration. These authors view poor written and verbal communication between providers as constituting barriers to effective collaboration. Without a shared point of interest, communication suffers, and

consequently members find it more difficult to collaborate. Poor communication can affect working relationships.

Ineffective communication at individual, team and organizational level can be a serious impediment to collaboration in implementing PBL in nursing education. Thus communication failures have complex causes including lack of understanding of others' roles or mistrust for other collaborator's perspective, thus practical and technical measures must be addressed (Horwarth & Morrison, 2007:64)

- Lack of mutual trust and respect

Participants indicated that lack of trust and respect as additional barriers to collaboration in implementing PBL in nursing education. The following quotes depict one participant's opinion:

> *Lack of mutual trust and respect can be a potential barrier to collaborative care. If there is no respect and trust for each discipline in the collaborative team, the team will not effectively work together, putting the student at risk. It also puts the student in the position of feeling unsafe. Students will pick up on the lack of trust among the team.*

This is supported by Clarin (2007: 541) Meunier-FiztHugh and Piercy (2009:294) and Quinless, Elliot and Saiff (1997:308) whose research results identified a lack of respect as creating a barrier to effective collaboration. Examples of showing lack of respect would be giving condescending remarks about one's educational backgrounds showing a lack of respect towards and expressing feelings of being superior to other partners (Clarin, 2007:541). Trust is a belief and expectation that members will perform desirable action (Horwarth & Morrison, 2007:64) and it is a requirement for effective collaboration in implementing PBL, and if it is lacking it becomes impossible to collaborate.

3.4 Summary

This chapter discussed of the findings the core (qualitative) component as supported by quotations from the participants and comparison with relevant literature. The results reflected the importance, types, benefits and barriers of collaboration in implementing PBL in nursing education as well as factors that contribute to a successful collaboration.

The next chapter discusses the results from the supplementary (quantitative) component of this sequential exploratory study, and these results will be merged with the results from the core component.

CHAPTER 4

THE RESULTS OF QUANTITATIVE COMPONENT

4.1 Introduction

Due to the nature of the sequential explorative design, these results are from the supplementary quantitative component. The results are from a convenience sample of which included (n= 30; 37%) nurse educators, (n=49; 52%) nurse managers and (n=16; 17%) clinical nurses who were from participants of PBL workshop held in North-West university as well as those who participated in the qualitative component. The findings are organized in relation to the sections of the questionnaires, namely, the characteristics of participants and opinions of the participants. The opinions consisted of structured or forced choice responses and open-ended responses.

The questionnaires were numbered, read through by the researcher, and after that data from completed questionnaires were transferred digitally in the SPSS version 20. The responses on the opinions were coded from 1-4 giving each number an explanation: 1=strongly agree (SA), 2= Agree (A), 3= disagree (D), 4 = strongly disagree (SD). The open ended responses were categorized into themes and subthemes. The responses from the opinions were classified into the following sections: (1) opinions regarding collaboration in implementing PBL, (2) benefits of collaboration; (3) abilities and capabilities of participants on collaboration;(4) key collaborators; (5) factors contributing to successful collaboration; (6) governance in collaboration; (7) monitoring and evaluation; and (8) barriers in collaboration. It should be noted in this chapter that the raw data are displayed, these findings are merged in the core component of the study and those are discussed in Chapter 5.

4.2 Results

This section describe the quantitative results from the self administered questionnaire starting from participants' characteristics' to last section on their opinions regarding barriers in implementing PBL in nursing education.

4.2.1 Participants' characteristics

Brief personal profiles of the participants are provided in this section. This information was obtained from Section A of the questionnaires. Personal information includes participant's age, gender, race, position and highest qualification.

Age of participants

Age ranged from 25 to 64 years with a mean (SD) of 49±14 years. Fifty-eight per cent (n=55; 58%) of participants were above age 50 years. This is in line with the report by Kaufman (2007:164) which indicated that more than 50% of nursing force is aged 55 and over. This implies that half of the nurse population is to retire in ten years' time.

Gender of Participants

The majority of participants were females (n=85; 89%), whilst (n=11; 11%) were males. This is in line with the SANC report (2007:4) and WHO (2002:33) demography which reveals that 94% of South African nursing population is female. This could indicate that at the lower levels men are starting to infiltrate the profession, but this has not yet translated into the higher levels due to the expected time lag of education and training. Men have only recently started entering the profession in bigger numbers. This does not have any implication on collaboration

Position of Participants

Most participants (52%) were nurse educators, whilst 31% were nurse managers and the remaining 17% were preceptors and clinical nurses. This is probably because most nursing education institutions in South Africa are not yet using preceptor model for clinical learning. This implies that the mix of the position is ideal for collaboration.

Experience of Participants in Current Positions

Thirty-nine (44.2 %) participants have more than ten years' experience in the current position, (31.6 %) had 6-9 years and 23.2% had 2-5 years' experience in the current position. These findings tally with item on age which reflects that majority of participants' age is higher than 50 years. This is also in agreement with the findings by Kauffman (2007:164) who posited that older and experienced nurses who are in the majority are to retire in the near future. This may imply that because of their much experience in nursing, these key role-players in nursing are likely to be in the best position to collaborate effectively in implementation of PBL.

Highest Qualifications of Participants

The highest qualification of the participants was PhD degree in nursing and the lowest was diploma in general nursing. Table 4.1 depicts the highest qualifications of participants.

Table 9.1: *Highest Qualifications of Participants*

Highest Qualification in Nursing	N	%
Diploma in Nursing	3	3.2
Degree in Nursing	17	17.9
Post Basic Diploma	42	44.2
Masters in Nursing	24	25.2
PhD Degree	10	9.4
Total	**96**	**100.0**

These results are in line with Kaufman's (2007:164) findings, in her survey results, that indicated that nurse educators are less well credentialed than their counterparts in other academic disciplines. With diversity in qualification in various specializations in nursing, diverse expertise and experience are likely to benefit the collaboration and the recipients of the collaboration, namely, the students as well as health care consumers.

4.2.2 Definition and Explanation of Collaboration

This was an open-ended question and was answered by all the participants. Themes that emerged from the definitions of collaboration in implementing PBL include the following; process, related terms and key stake holders. Table 4.2 depicts the themes that emerged from the documentations of the participants.

Table 10.2*: Themes that emerged from definitions of collaboration by participants*

Theme	Sub-theme
Interactive Process	Working together
	Common goal/purpose
	Interpersonal and interactive
Related Terms	Partnership
	Team
	Cooperation
Stakeholders	Nurse educators
	Multi-Disciplinary Team members
	Departments serving Nursing within educational institution

Theme 1: Collaboration as a Process

Most participants perceived collaboration as a process of working together. Below is one of the quotes from their entries:

> *This is a process where individuals or organizations work together for a shared goal and mission. This is an interactive process requiring adequate commitment, collaboration and coordination.*

Another said this:

> *A process of working as a team to ensure proper training and education of student through PBL and collaborators will include nurses and Multi-disciplinary team members (MDT).*

The other said:

> *It is a process of working as a team to teach students and sharing knowledge, skills and ideas.*

This is congruent with Bedwell et al., (2012:130); and Montiel-Overall (2005:4) who perceive collaboration as a process and highlighted it as an essentially emergent process rather than a prescribed state of individuals, teams or organizations.

A process of collaboration in implementing PBL is seen as a series of linked actions and proceedings. As a process, collaboration will likely entail planning, implementation and evaluation.

- **Sub theme 1: Participants were of the opinion that collaboration is working together**

Majority (n=91; 95%) of participants viewed collaboration in implementing PBL as working together or jointly. The following are the quotes from their documentations in the questionnaire:

> *It is when people work together for a specific purpose; joint planning, implementation and evaluation of PBL It means working together with more than one other health professionals like physicians, pharmacists, social workers and psychologist. Also government departments like education, health and labour and information technology.*

Another quote:

> *It refers to togetherness of nurses for a common goal, namely, personal and professional development of students to ensure quality and competence in health care delivery for the benefit of all. It is teamwork and cooperation in the process of educating nurses.*

Additional quote:

> *It refers to jointly working for specific goal attainment. For example in this case, it means the nursing key role players jointly plan, implement and evaluate PBL programme.*

These results support the definitions by Mfum-Mensah (2011:465) and Thomson and Perry (2006:21) who defined collaboration as "joint work" for "joint purposes" in one or more areas of shared concern.

Collaboration in implementing PBL in nursing education will require joint planning, implementation and evaluation. Collaboration in implementing PBL is an on-going and continuous process wherein a common vision and mutual goals and realities are developed and maintained.

- **Sub theme 2: participants were of the opinion that in collaboration there is common or shared goal**

Participants in their definition of collaboration in implementing PBL indicated a common or shared goal. The following are the quotes from their documents.

> *This is a process where individuals or organizations work together for a shared goal and mission. This is an interactive process requiring adequate commitment, collaboration and coordination.*

Another quote:

> *It means working together to achieve a common goal which is educating products to meet the health needs of the communities. The partners share information and skills through joint planning, setting goals, and identifying ways to achieve those goals.*

The results coincide with Bedwell et al., (2012:138), Henneman et al., (1995:105) and Patel et al., (2012:14) who define collaboration as process involving common or shared goal achievement.

This implies that for collaboration to be successful in implementing PBL in nursing education, a shared or common goal is a must. All collaborative partners in implementing PBL in nursing education need to have same objectives in mind.

- **Sub theme 3: Interpersonal and interactive**

Most participants viewed collaboration as an interpersonal and interactive process.

This what one participant said:

> *It is an interactive process where two or more individuals /organizations work together as a team to achieve a common goal and objectives. For example, working together to educate nursing students to ensure achievement of a shared goal.*

These findings support Brinkerhoff (2002:216) and Kinnaman and Bleich (2004:311) and D'Amour et al., (2005:119) who see collaboration as a dynamic, interactive, and interpersonal process, structuring and collective action of achieving common goal. It is evident that for collaboration in implementing PBL, collaborative partners need to interact, communicate and relate harmoniously.

Theme 2: Related Terms

Most participants used the following terms interchangeably with collaboration, partnership, team work and cooperation.

- **Sub-Theme 1: Partnership**

The quotes below reflect documentations from participants:

> *It is partnering as colleagues to offer education and training to students using PBL approach. In this process commitment and communication are essential.*
> *It is a process of partnership where professional of different backgrounds commit themselves to work together for achievement of a goal.*
> *It is team work or partnership whereby the key role players such as nurse educators, clinical practitioners, multidisciplinary team members and other educational institutions come together and jointly plan, implement and evaluate nursing education including PBL teaching.*
> *It is commonly known as partnership process where key role players such as nurse educators, professional staff in the services jointly plan, implement and evaluate PBL curriculum. It is an interpersonal and interactive process requiring healthy human skills and open communication, respect, mutual trust and commitment.*

> *Partnership is where clinical nurses are included in theoretical development of study guide and workbook so that they are able to know the objectives of students from classroom to clinical services.*

These results are in agreement with Henneman et al., (1995:105), Casey (2011:305) and Havarth et al., (2007:29) who report that collaboration is frequently equated with partnership and is characterized by mutual goals and commitment. Collaboration in implementing PBL is likely to be used interchangeably with partnership.

- ***Sub-Theme 2: teamwork***

Majority of participants perceived collaboration in implementing PBL as teamwork. The following are quotes from the documentations by participants

> *It is a process of working as a team to teach students and sharing knowledge, skills and ideas.*

Another said:

> *It is teamwork, partnership in education of students. Nurse educators and other stakeholders such as, MDT, nurse managers and students come together to plan, implement and evaluate training and education.*

The other participant articulated:

> *It is a process of working as a team to ensure proper training and education of student through PBL. Collaborators will include nurses and MDT.*

These results are supported by Bedwell et al., (2012:135) who also perceive teamwork as a related term to collaboration. Collaboration in implementing PBL in nursing education also refers to teamwork of key role players in nursing education.

- **Sub-Theme 3: cooperation**

Other participants were of the opinion that collaboration in implementing PBL is cooperation among key role players and the following are examples of their definitions of collaboration. One nurse manager articulated:

> *It is team work and cooperation for a specific aim and togetherness for a purpose.*

Another manger described collaboration in implementing PBL as:

> *It is teamwork to ensure proper training and education of student through PBL. Collaborators will include nurses and MDT.*

As one educator put it:

> *It is process of working as a team to teach students and sharing knowledge, skills and ideas.*

These results are similar to Bedwell et al., (2012:135) who posited that cooperation is related to collaboration. The author viewed cooperation as an attitudinal concept describing the extent to which collaborators are concerned about the overall goal and to facilitate the achievement of the collaboration goals and objectives

Theme 3: stakeholder

From this theme the following the following sub themes emerged Nurse educators

Multi-disciplinary, team members and departments serving nursing within educational institution

4.2.3 Opinions Regarding the Need for Collaboration in Implementing PBL in Nursing Education

Collaborations are increasingly becoming the format for ways of doing work as the nature of learning and teaching is being dramatically transformed. In this section, the results on the opinion regarding the need for collaboration are outlined:

Opinion 1: Implementation of PBL Requires Collaboration with Other Stakeholders

Almost 90% of participants strongly agreed that implementation of PBL requires collaboration with other stakeholders. The results confirm the statements by Crosby and Bryson (2010:211) who indicate that collaborative work is necessary to address major public problems and challenges. As D'Amour and colleagues put it, our lives are always set in collective interactions with others. According to these authors, these interactions take different forms of which one is collaboration (D'Amour et al., 2008:1). Health

professionals including nursing education institutions are thus confronted with a demand for both inter-professional and inter-institutional collaboration

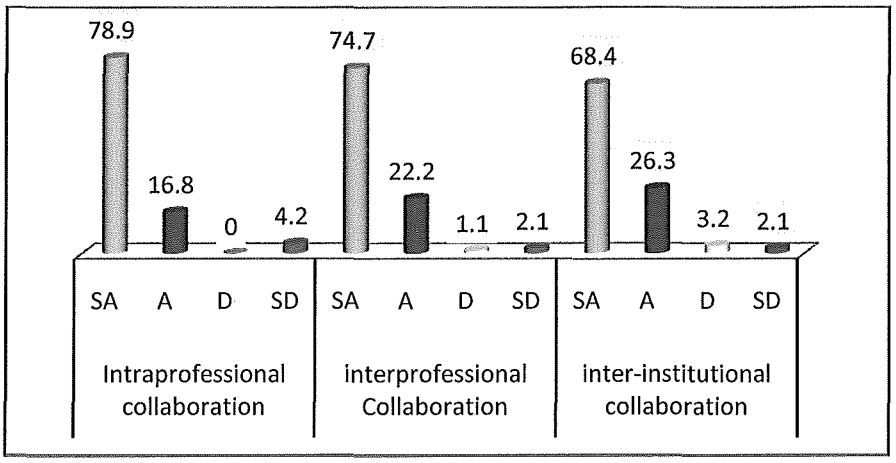
Opinion 2: With collaboration in implementing PBL much can be achieved to educate the nursing student

The majority (n=94; 98%) of participants agree that with collaboration in implementing PBL much can be achieved to educate the nursing student. The results are in agreement with Walter et al., (2003:59) and Montiel-Overall's (2005:1) statement who report that by collaborating with other key role players, nurses in academia and in service settings can directly impact on nursing education and practice, often effecting changes and achieving outcomes that are more extensive and powerful than could be achieved by working alone.

4.2.4 Ways of Implementing PBL Collaboration

Figure 4.1 Participants' opinions regarding ways of implementing PBL in nursing education.

Figure 7.1: *Better Ways of Implementing PBL Collaboration*



- **Intra-professional collaborative work**

The majority (78.9%) of participants strongly agreed that a better way to implementing PBL is through intra-professional collaborative work whilst 16.7% agreed with this statement. This confirms what the participants said in Item 4.5 where participants

verbalized collaboration with clinical nurses. The results coincide with Ehrenberg and Häggblom. (2007:73), Lehna and Bryne (1995:176), and Connolly and Wilson (2008:87) who recommend that collaborations of nurse educator and clinical nurses are increasingly viewed as requisite for the future of nursing and paramount to bridging education preparation and achievement of excellence in professional practice. Intra-professional collaboration in implementing PBL is seen as a key factor in initiatives designed to increase the effectiveness of services currently offered in nursing education.

- **Interdisciplinary collaboration**

Almost seventy-five per cent (74.7%) strongly agree that interdisciplinary collaboration is necessary for implementation of PBL, and 22 % agree with this principle and only 3% disagree with this statement. These findings are consistent with outcomes of the study by Derbyshire and Machin (2011:241) wherein student's value interdisciplinary collaboration in problem based learning. Lapkin, Levett-Jones and Gilligan (2011:1) suggest that the fundamental premise of interdisciplinary collaboration in education is that health professional students learn together and that they will be better prepared for inter-professional collaboration and teamwork, ultimately leading to improved patients health care. Pumar- Mendez et al., (2008:332) warn that premature introduction of interdisciplinary collaboration in education is not only inefficient, but negative as it interferes with establishment of distinct professional identity by preventing individuals from focusing on professional elements of their identity. Interdisciplinary collaboration holds a positive connotation for implementing PBL and collaborating is usually considered a necessary component of successful professional activities in education nursing.

- **Inter-institutional collaboration**

The majority (68%) strongly agree whilst 26% agreed that inter-institutional collaboration is necessary for implementation of PBL in nursing education. The results are in line with Anderson-Butcher, Stelter, and Midle's (2006:155) recommendation that partnerships between school and other organizations are important in alleviation of academic and

non-academic barriers. The results are also in line with those of Brown (2009:52) which found collaboration between two departments seemed logical because of the importance of teaching/learning and service to the community for both departments. In her study Brown, (2009:52) found that collaboration was designed to create an intervention that would improve collegiality and student teaching-learning between the two departments. Inter-institutional collaboration in implementing PBL is viewed as another important way of effectively implementing PBL.

4.2.5 Other Ways in Which Collaboration can be Implemented in PBL

This was an open-ended question and n=30; 32% of participants responded to this item. The themes that emerged from this question included, training and development of collaborators, joint working, memorandum of understanding and exchange programmes for both students and lecturers.

- **Training of collaborators on PBL and collaboration**

Seventeen (n=17; 57%) participants documented that training and development of collaborators on PBL and collaboration as a way of implementing collaborative work in PBL. These findings support results by Williams and Beattie (2008:12), and Dorman et al., (2005:163) who emphasize the need for training of staff on PBL is required for effective implementation thereof. According to Patel et al., (2012:9) training activities are crucial in managing change among the collaborators. Personal and professional development training opportunities on PBL are likely to enhance collaboration and improve productivity and collaborators' satisfaction.

- **Joint working**

Most of participants expressed joint working of collaborators as another way to implement collaboration in implementing PBL. Subthemes that emerged from this include joint working of clinical staff and nurse educators, joint need identification, joint decision making and evaluation. This is how one participant responded:

> *We need joint planning of curriculum, problems or scenarios development and assessment of students.*

Another captured that as:

> *1. Collaborators identify the need together. 2. Set objectives jointly. 3. Identify key strategies and key performance indicators.*

The other articulated:

> *We should jointly do need analysis, strategy design, execution and evaluation.*

- **Memorandum of understanding or written agreement**

The participants indicated that having a memorandum of understanding is a way of implementing collaborative work in PBL. The following are the quotes from the documentations:

> *Signing an agreement by top or executive management is important in collaboration.*

One educator put it this way:

> *We must have MOU stipulating roles and expectations.*

These comments are in agreement with D'Amour et al., (2008:15) and Dorner (2001:135) who view a formal written agreement describing the type and level of collaboration as a necessity and a way of ensuring an effective collaboration. Having a written agreement clearly spelling out the roles and responsibilities of collaborators, is likely to assist coordination of individual and organizational roles, and thus a formal written agreement would be necessary for collaboration in implementing PBL in nursing.

- **Student and staff exchange programmes**

Thirteen (n=13; 43%) of the participants indicated that students' exchange programmes were another way to implement collaborative work in PBL. These findings are in line with Green, Johansson, Rosser, Tengah and Sergott (2008:981), and Keogh and Russel-Roberts (2009:108) results who in their studies found that exchange programmes at the student level, lead to a diffusion of knowledge and skills between

institutions. According to Green et al., (2008:981), student exchange programmes enhance cultural awareness as well as personal and professional development.

The use of student exchange programmes in a collaborative effort of implementing PBL in nursing education is another way of implementing collaboration in implementing PBL. Enskär, Johansson, and Ljusegren, and Widäng (2011:541), in their study results on international lecturer's exchange programme participant, found them beneficial.

4.2.6 Benefits of collaboration in implementing PBL in nursing education

The benefits of collaboration in implementing PBL constitute the positive outcomes. Opinions regarding the benefits of collaboration were measured by the adapted Belief in the Benefits of Collaboration Scale developed by Sicotte et al., (2002:994). This scale had six forced choice benefits and an open ended question. Below are the results from the participants.

Benefit 1: Collaborative Work in Implementing PBL Results in Greater Student Satisfaction

Most participants (n=66; 69.5%) strongly agreed and (n=26; 27.4%) agreed that collaborative work in implementing PBL results in greater student's satisfaction. Table 4.3 displays the opinions of participants regarding this benefit.

Table 11.3: Collaborative work in implementing PBL results in greater student satisfaction

Responses	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
N	66	27	2	1	96
%	68.8	28	2.1	1.0	100

These results are congruent with of Lapkin et al., (2011:2) who reported that interventions that are collaborative in nature improve client outcomes. Collaborative work is purported to enhance partners interpersonal and communication skills and teamwork and thus improvement of intervention outcome for the clients,

Benefit 2: Collaborative Work Provides Better Support during Interventions

The table below depicts the participants' opinions that collaborative work provides support during interventions:

Table 12.4: *Collaborative work provides better support during interventions*

Responses	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
N	65	28	1	2	96
%	67.7	29.2	1.	2.1	100

Over ninety per cent (n= 93; 97%) agreed that collaborative work provides better support during interventions and only 3% disagree with this statement. The results support Lapkin et al.'s (2011:2) results in their systemic review study wherein they reported that in information sharing, determining professional responsibilities, consensus building, and setting of common goals, components of effective communication can be enhanced through collaborative work in education.

Benefit 3: Collaborative Work Improves the Quality of Nursing Education

The table below depicts the participants' opinions that collaborative work improves the quality of nursing education

Table 13.5: *Collaborative work improves the quality of nursing education*

Responses	Strongly Agree	Agree	Strongly Disagree	Total
N	78	16	2	96
%	81.3	16.7	2.1	100

More than eighty per cent (n=78; 81.3%) strongly agreed that collaborative work improves the quality of nursing education, and 16.7% agreed with the statement, while only 2% strongly disagreed with this statement.

According to Pumer-Mendez et al., (2011:329) the main goal of collaborative work in education is to improve teamwork to overcome functional barriers and improves education outcomes. Collaboration in implementing PBL in nursing education seems to have the potential to enhance the outcomes of education.

Benefit 4: Collaborative Work Improves the Quality of Services to Students

Table 4.6 depicts the participants' opinions that collaborative work improves the quality of services to students.

Table 14.6: ***Collaborative work improves the quality of services to students***

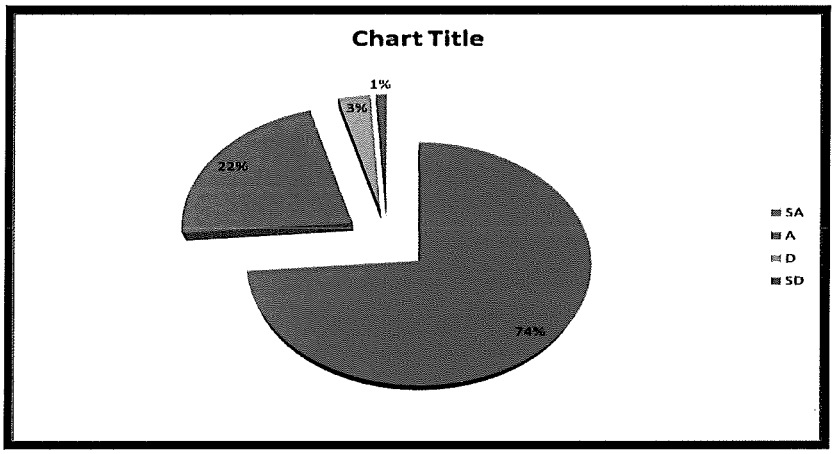
Responses	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
N	75	18	1	2	96
%	78.1	18.8	1.	2.1	100

The majority (at 78%) strongly agreed that collaborative work improve the quality of service to student, and 19% agreed with the statement. These findings are in agreement with Carroll, Albada, Farahani, Lithner,Melanie Neumann Sandhu, and Heather Shepherd (2010:418) findings that indentified positive outcomes of collaboration as improved productivity and client satisfaction in their study.

Benefit 5: Collaborative Work Fosters Integration on Implementing PBL

Cumulative percentage of those who strongly agreed and those who agreed that collaborative work fosters integration in implementing PBL is 96% and only 4% disagreed with this statement. Figure 4.2 depicts the opinions of participants on this item.

Figure 8.2: Collaborative work fosters integration in implementing PBL

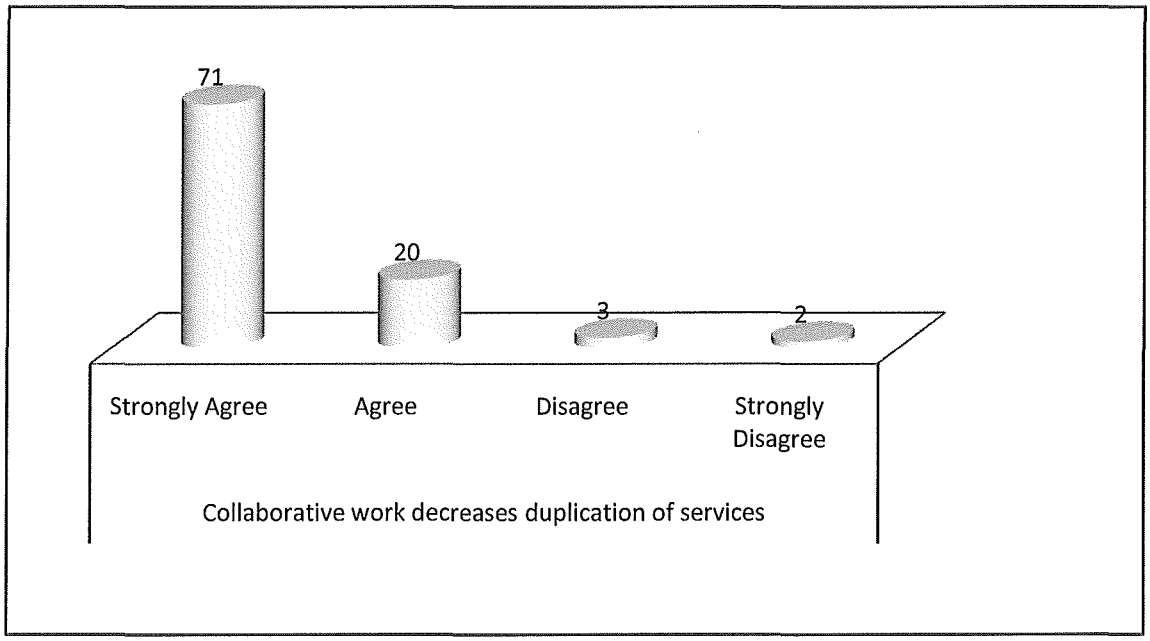


The findings are in agreement with Brown's (2009:56) report that student-centred collaboration can be a functional reality in the delivery of quality education. According to Pumer-Mendez (2008:328), international organizations such as World Health Organization and World Federation of Medical Education recognized the potential for collaborative education and advocated for its worldwide expansion since 1970. Flowing from the above findings and observations collaboration in implementing PBL in nursing education has the potential to foster integration.

Benefit 6: Collaboration Work Decreases Duplicates Services

Figure 4.3: Participants' opinions on Collaborative Work Decreases Duplication of Services

Figure 9.3: *Benefit: Collaboration work decreases duplicates services*



Most of participants (74%) strongly agreed that collaborative work decreases duplication of services and 22% agreed with this statement, whilst only 4% disagreed with this statement. The results are in line with Arnold et al.'s (2004: 62) results that in their study of collaboration in research identified the group cohesion and minimization duplication of services as the benefits of collaboration. The authors also noted that collaboration can increase efficiency as collaborators contribute individual but different expertise to the research problem or findings reducing time required to complete papers, projects, or proposals.

It can be inferred that collaboration in implementing PBL is likely to decrease duplication of services in education of students.

4.2.7 Other Benefits of Collaboration in Implementing PBL in Nursing Education

This item was responded by n=90; 95%% and only n=6; 5% did not attempt this question and themes that emerged from this item are depicted in the table 4.7

Table 15.7: *Themes and Subthemes of Other Benefits of Collaboration*

Theme	Sub-Theme
Student Benefit	Development of students
	Independent learner
	Role-modelling of collaboration
	Quality education
	Supportive & nurturing learning environment
Staff Benefits	Staff development & empowerment
	Sharing of information & knowledge
	Opportunity to contribute to nursing education
	Shared responsibility and accountability of nursing education issues
Patients Benefits	Quality health care
Organizational/Institutional Benefits	Sharing of resources
	Sharing of time & talents
	Effective utilization of resources

The themes that emerged from the participants' documentation include student's benefits, personnel benefits and organizational benefits.

Students benefits

The results indicated that collaboration in implementing PBL in nursing education will benefit the students emerged. The sub-themes that emerged from this theme are discussed below.

- Development of students

Majority of participants indicated the benefits of collaboration in terms of general advantages of PBL as a teaching strategy. The following are the quotes from their documentations

- *Development of independent nursing practitioner during caring of patients.*
- *All students will be confident to work alone due to PBL.*
- *Students will develop to be critical thinkers and will not forget what they have learned.*
- *Students complete the course being independent. 2. Again, they gain confidence as they establish things and not being spoon-fed. 3. They become assertive from the competency of their own work.*

These findings support the results by Biley and Smith (1999:1206); Morales-Mann and Kaitell (2001:14) and Tiwari, Lam, Yuen, Fung and Chan (2005:299) who reported the benefits of PBL as teamwork and effective interaction with peers, supported by collaborative working, improved communication skills, respect for different perspectives, and cognitive skills, motivation to learn; self-direction in learning; active, interactive and student-centred learning, and critical learning. Collaboration in implementing PBL is likely to enhance the benefits of PBL such as self-confidence, assertion and independent learning

- Role-modelling of collaboration

Majority of participants were of the opinion that collaboration in implementing PBL provides an opportunity to role model collaboration for the students. The quotes below demonstrate their opinions:

- *Role modelling of collaboration to students.*
- *Demonstration of collaboration to nursing students.*
- *Collaboration provides opportunity to showcase collaboration to students.*

These findings concur with Ardahan, Akcusy and Engin (2010:354) and Brown (2009:54) whose results on interdisciplinary collaboration with students expressed more

positive attitudes toward collaboration and helped in the development of awareness of team working and roles of each other.

- Quality education

Some participants documented that collaboration in implementing PBL enhance quality education. This is a repetition or reinforcement of item 4.2.4.3, namely, benefit 3 which states that collaborative work improves the quality of nursing education. The following are quotes documentations on quality education from the participants:

- *Production of competent nurses who gained from different experts;*
- *Improves the quality of services to students; and*
- *Effective utilization of expertise in nursing and giving the best to students.*

The findings are in line with Alberto and Hearth's (2009:6) findings that students recognized the many benefits of collaboration and commented that collaboration added another dimension to their learning, enlightening and opened their eyes to different cultures. The results suggest that collaboration in implementing PBL in nursing education enhances the students learning. Collaboration is thus helpful in achieving quality outputs and an increase in productive learning and thus quality education

- Supportive and nurturing learning

The participants indicated that collaboration in implementing PBL promote supportive and nurture learning. These are examples of additional benefits of collaboration as documented by some of the participants:

> *Students benefit from diversity of expertise and provision of better supportive environment.*

Another participant documented this:

> *There will be supportive environment for students and betterment of nursing education.*

Another nurse educator said:

> *A result of collaboration is a supportive and nurturing environment for students.*

These results confirmed the sentiment by Henneman et al., (1995:105); and Arnold et al., (2004:62) who identified the creation of supportive and nurturing environment as one of the critical benefits of collaboration. This implies that collaboration in implementing PBL will enhance supportive and nurturing environment for effective learning of students.

Staff Benefits

The findings revealed that collaboration in implementing PBL will benefit the collaborators both in academia and practice in various ways. The subthemes that emerged from this theme are discussed as follows:

- Staff development & empowerment

The majority of participants documented staff development as a benefit resulting from collaboration in implementing PBL in nursing education. One nurse educator mentioned the following:

- *Development of staff and sharing of knowledge and skills.*
- Joint decision making; and
- problem solving of nursing education issues.

Another documented that:

> *1. Development and empowerment of partners. 2. Sharing of knowledge, skills and talent. 3. Improved contribution to the profession. 4. Teaching students collaboration needed in professional life.*

As one nurse manager puts it thus:

> *1. Development of staff on collaboration skills.2. Sharing of ideas and expertise. 3. Personal and professional development. 4. Training of quality nurse.*

These findings are congruent with Henneman et al., (1995:105) who maintain the benefits as staff development. These are also in line with Lehna and Byrne (1995:180) findings who their study of collaboration between nursing education institution and hospice health care service noted benefits of collaboration including increased

theoretical knowledge and visibility, increased interest and participation, personal growth. he educators will develop awareness of clinical requirements in the various settings (Lehna & Byrne, 1995:181; AACN, 1997:129; and Brinkerhoff, 2002:225).

- Sharing of information and knowledge

Participants viewed collaboration in implementing PBL as an opportunity to share information, knowledge and skills. The following quotes depict the opinions of the participants:

> *1. Information, skill and expertise sharing. 2. Skill development in collaboration. 3. Mentoring and consultative services from institutions that are advanced in PBL.*

The other documented

> *1. Staff development on collaboration. 2. Role modelling of collaboration to students. 3. Sharing ideas, knowledge, skills and expertise. 4. Mentoring form champions of PBL.*

The findings are in support of the findings by Carroll et al., (2010:518) who identified the following benefits of collaboration:

- *First*, collaboration between individuals and organizations can enhance a transfer of knowledge and expertise.
- *Secondly*, it can function as a cross-fertilization of ideas, provide intellectual companionship, and extend one's individual network.

Collaboration in implementing PBL is likely to enhance sharing of information, skills, talents and expertise among the collaborative partners.

- Shared responsibility and accountability of nursing education issues

The participants identified shared responsibility and accountability as a benefit from collaboration in implementing PBL. The following quotes are evidence of the participants' documentations:

Prevention of blaming syndrome (nurse educators and clinical nurses blaming each other.

Another said that:

Sharing of problems and solutions in nursing education, thus sharing responsibility and accountability.

The results are congruent with Carroll et al., (2010:518) who found out that collaboration allows partners to meet and share both setbacks and successes creating a positive energy that is important and useful in all collaborative activities. These findings are also congruent with Brinkerhoff (2002:216) who characterized collaborative partnership by:

- ✓ Willingness to share ideas and resolve conflicts;
- ✓ shared responsibility of decision making; and
- ✓ shared accountability of outcomes

Collaboration in implementing PBL is likely to enhance shared decision making, problem solving and accountability of nursing education issues which result from active participation of collaborators.

Organizational benefits

The results indicated that participating organization in collaboration in implementing PBL are to benefit. As one manager puts it thus:

1). Sharing of resources as PBL is resource intensive. 2) Each member focus on their expertise. 3) Students benefit from variety of expertise. 4) improvement in student output.

According to Bleich, Hewlett, Miller and Bender (2004:289) who are regarded as thought leaders on topic of academic- service collaborative partnerships in nursing, the benefits that are cited by AACN in 1997 remain today. These include maximization of resources and sharing. The findings are in line with the literature on inter-institutional collaboration by Fisher et al., (2009:4) who viewed inter-institutional network as a

possible strategy to draw on and leverage the existing resources of multiple organizations.

Participants' Professional Capabilities and Abilities to Provide Collaborative Work in PBL

This variable was included to assess the capabilities and abilities of participants in relation to collaborative work. The figure below depicts the opinions regarding abilities in collaboration in implementing PBL.

4.2.8 Opinions Regarding Abilities for Collaboration in Implementing PBL

Eighty-two per cent (82%) strongly agreed that the clinical areas have a lot of expertise and can play an important role in implementing PBL in nursing education, whilst 15% agreed with this statement and only 3% disagreed.

The majority of participants (64%) disagreed with the statement that they all know what needs to be done for collaboration in implementing PBL to work. This is evident in item on factors contributing to a successful collaboration where most participants verbalized the need for development and capacity building in PBL and collaboration.

More than 61 % agreed that they have abilities to collaborate in implementing PBL in nursing education.

Opinions Regarding Capabilities for Collaboration in Implementing PBL

Sixty-five per cent (65%) of participants are of the opinion that their professional abilities to provide special services requested collaborative work in PBL are appropriate, whilst 32% agreed with this statement. This make the cumulative percentage of both strongly agree and agree equal to 96.9%.

- **Abilities to Link Resources of Teams Are Appropriate**

The most participants (n=50, 53%) strongly agree that their abilities to link resources of nursing education and teams are appropriate, whilst 40% agreed with the statement.

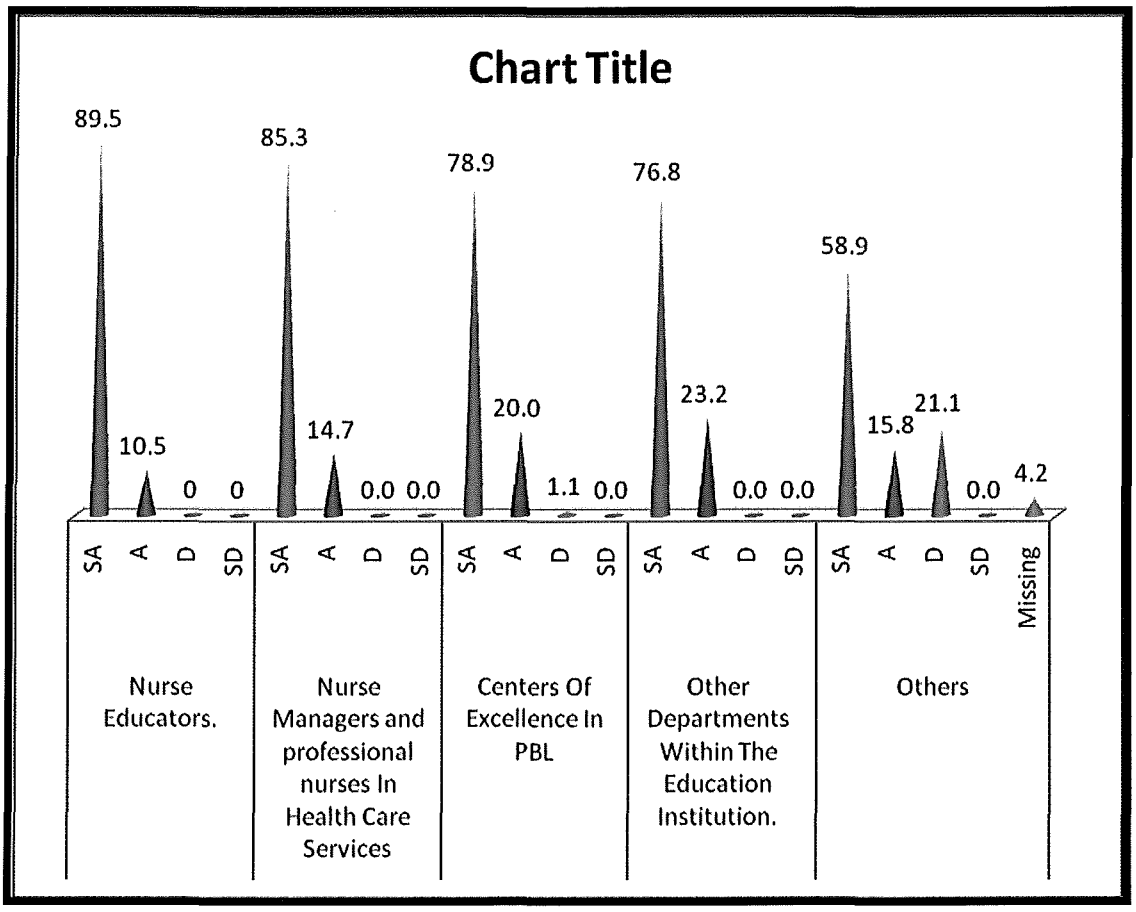
- **Understanding of professional capabilities in collaborative work**

Fifty per cent (51.6%) of participants strongly agreed that they understand the capabilities of their professional collaborative work and 43.2% agreed with the statement whilst only 5% disagree with this statement.

4.2.9 Key Stake-Holders in Collaboration of Implementing PBL

Figure 4.4 depicts the participants' opinions regarding the key stake-holders in collaboration of implementing PBL.

Figure 10.4: *Key Stake-Holders in Collaboration of Implementing PBL*



All (100%) the participants indicated the need of various stakeholders for collaboration in implementing PBL. Nurse educators got highest scores of strongly agree opinion by 89.5 % followed by managers and professional health care services 85.3%, centres of excellence in PBL (78.9%) other departments within the education institutions (76.8%)

and the others with 58.9%. On merging strongly agree and agree, 100% of participants agreed that nurse educators, nurse managers and professional nurses in the health care services should be key role players in this collaboration. This is probably because the nurse educators' core business in higher education institutions is teaching learning. Almost seventy-nine (79%) of participants identified centres of excellence in PBL as other stakeholders for collaboration in implementing PBL

Other Key Stakeholder Identified By Participants

This was an open-ended question. The following are other stakeholders identified by participants: Students (50%), health care user (67%), MDT (80%) and community members (73%).

- **Students as collaborators**

Fifty per cent of those who responded to this aspect are of the opinion that students should be collaborators in implementing PBL.

- **Health care users as collaborators**

Sixty seven (67%) of participants are of the opinion that health care users need to be collaborator in implementing PBL. These findings support the qualitative study by Solomon and her colleagues (2003:257) in Ontario wherein they integrated patients living with HIV in the PBL tutorial and their results revealed that patients or health care consumers significantly contributed to the student learning and can successfully collaborate during PBL tutorials.

- **Community Members as Collaborators**

Community members as part of collaborators were identified by 73% of those who responded to this item.

- **Multidisciplinary Team Members**

Almost 80% of those who responded to this item are of the opinion that MDT members should be key role players in this collaboration. This confirms the qualitative results wherein the participants emphasized collaboration with the multidisciplinary team members in the services. Multidisciplinary collaboration was a strategy selected to provide a comprehensive learning experience for the students. Klein (1990:19) describes interdisciplinary as "movement across disciplinary boundaries". This movement is a collaborative effort to synthesize knowledge by integrating people and ideas from different disciplines, allowing students to learn curriculum content from an alternative point of view.

4.2.10 Factors Contributing To Successful Collaboration in Implementing PBL in Nursing Education

Several preconditions must be in place in order for collaboration to be successful. An eleven item scale was used to measure these constructs.

Factor 1: A Clear Vision That Is Shared By All Parties

Eighty-four per cent strongly agreed that a clear vision is shared by all, whilst 13.7% agree with the statement, as well as strong values that are accepted and understood by all parties. Only three participants disagreed with this statement.

Factor 2: Strong Values That Were Accepted and Understood By All Parties

Only one (1) participant disagreed with this statement. The majority (84.2%) strongly agree that strong values that are accepted and understood by all parties, whilst 15.9% agree with the statement. The cumulative per cent is equal to 98.9 that gives 99% of participants agreeing that strong values that are accepted & understood by all for collaboration to be successful.

Factor 3: Strong Principles that are Accepted and Understood by All Parties

Over three quarter (80%) of participants strongly agreed that strong principles that are accepted by all parties contribute to successful collaboration, whilst 20% agreed with this statement.

Factor 4: Specific Aim and Objectives that must be established for the Collaboration

Every participant agreed that specific aims and objectives are established for the collaboration. Seventy-three per cent (73.7%) strongly agreed, whilst 26.3% agreed with this statement. This is congruent with what participants verbalized in their definition where they started the need for shared or common goal.

Factor 5: The Anticipated Outcomes of Collaborators

Above seventy per cent (71.6%) strongly agreed with this statement, whilst 28.4% agreed that the anticipated outcome of collaboration contribute to the successful collaboration in implementing PBL. Clearly defined goals provide a common ground for communication and structure about collaborative activities (Patel et al., 2012:14).

Factor 6: The reasons why each collaborator is engaged in collaboration are understood and accepted

Hundred per cent (100%) of participants agreed that the reasons why each collaborator is engaged in collaboration are understood and accepted. Eighty per cent (80%) strongly agreed with this statement and 20% were agreeable to the statement.

Factor 7: The areas where early collaboration success is most likely have been identified and agreed

Table 4.8 depicts the participants' opinions regarding the principle that for collaboration to succeed the areas where early collaboration success is most likely have been identified and agreed

Table 16.8: ***The Areas where Early Collaboration Success is Most Likely Have been identified and Agreed***

Responses	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
N	70	24	1	1	96
%	74	25	1.0	1.0	100

Over seventy per cent (n=70; 74%) strongly agreed that areas where early collaboration success is most likely have been identified and must be in place, and (n=24; 25 %) agreed to this statement. Only one participant disagreed with this factor.

Factor 8: A clear commitment to collaboration working from most senior levels of each of the collaborators

Seventy-seven per cent (77%) of participants strongly agreed that there should be clear commitment to collaboration from senior management, whilst 20% agreed and 2.1% disagreed with this principle. This confirms what participants mentioned during qualitative interviews where most indicated that directed commitment from top or executive management. According to Brinkerhoff (2002:221), senior management support contributes to collaborative partnership performance both directly and indirectly. Directly such support translates into resource commitments (e.g., financial, personnel and others) and often entails flexibility and consequently maximizes performance. Indirectly, the participation of and support of senior management symbolizes the organizational commitment to collaboration and contribute to trust building among the collaborators (Brinkerhoff, 2002: 221).

Factor 9: Collaboration Recognizes and Values Each Collaborator's Contribution

Table 4.9 depicts the participants' opinions regarding the principle that collaboration should recognise and value each collaborator's contribution.

Table 17.9: ***Collaboration recognizes and values each collaborator's contribution***

Responses	Strongly Agree	Agree	Strongly Disagree	Total
N	76	79	1	96
%	87.5	20	1.0	100

The majority (87.5%) of participants strongly agreed that collaboration recognizes and values each other's contribution. This is congruent with what participants said in the quantitative component.

Factors 10: Costs and Benefits Arising From the Collaboration Are Fairly Distributed Among Collaborators

Fifty-two per cent (51.6%) strongly agree that costs and benefits arising from the collaboration should be fairly distributed among all the collaborators for success, and 25.3% agree with these principles, and 23.2% disagreed with this principle.

Factor 11: Levels of Trust within the Collaboration are high enough to Encourage Risk –Taking

The majority of participants (n=68; 71%) strongly believe that levels of trust within the collaboration are high enough to encourage risk taking, whilst n=23; 24% agree with this principle. The results support Patel et al., (2012:13) findings who advocated abundance of trust for effective collaboration to occur. These responses are in line with the studies by D'Amour et al., (2008:5), Casey (2011:305, Owen and Grealish (2006:16), Kinnaman and Bleich (2004:311); and Carnwell and Carson (nd:11) wherein, according to the participants, collaboration is possible only when they have trust in each other's competencies.

Factors 12: There is zero tolerance of individuals and/or agencies who fail to work constructively within the collaborating

Most participants (45%) strongly agreed and 25% agreed that zero tolerance of individuals or agencies failing to work constructively within collaboration should be emphasized or applied.

4.2.11 Other Factors that may contribute To a Successful Collaboration

This aspect was answered by 100% of participants. Themes and subthemes that emerged from this item are displayed in the Table 4.10

Table 18.10: ***Other Factors That May Contribute To a Successful Collaboration***

Theme	Subthemes
1. Governance	Buying in by top management
	Commitment and willingness from management
	Shared governance
	Visionary leadership
	Memorandum of understanding and role clarifications
	Flattened organizational structures
	Acknowledgement of other's status
	Training of all collaborators on PBL
	Monitoring & evaluation
2. Human skills	Mutual trust and respect
	Effective communication
	Cooperation
	Team work

Governance of Collaboration in Implementing PBL in Nursing Education Stakeholders are Represented in the Collaboration Governance Arrangements. Table 4.11 depicts the participants' opinions regarding the principle that for successful collaboration stakeholders should be represented in the collaboration governance arrangements.

Table 19.11: *All Stakeholders Are Represented In the Collaboration Governance Arrangements*

Responses	Strongly Agree	Agree	Disagree	Total
N	67	26	3	96
k%	69.8	27.1	3.1	100

Over seventy per cent (n=68; 70.8%) strongly agree that all stakeholders should be represents in the collaboration governance structures, whilst (n= 26; 27%) agrees with this statement, and only (n=3; 3%) disagree with this statement.

Each Collaborator's Area of Responsibilities must be clear and understood

The majority of participants (n=80; 83%) strongly agree that each collaborator's areas of responsibilities must be clear and understood, followed by (n=15; 16%) agree with this.

Table 20.12: Each Collaborator's Area of Responsibilities must be clear and understood

Responses	Strongly Agree	Agree	Disagree	Total
N	80	15	1	96
%	83.3	15.6	1.0	100

Collaboration is conducted openly and fairly

Eighty-three per cent strongly agreed that collaboration should be conducted openly and fairly, whilst 16% agrees to that. This makes a cumulative per cent of 98.9% of participants agreeing to this principle.

Table 21.13: Collaboration Is Conducted Open and Fairly

Responses	Strongly Agree	Agree	Disagree	Total
N	80	15	1	96
%	83.3	15.6	1.0	100

Clarity of what Resources each Collaborator Brings to the Collaboration

Table 4.14 depicts the participants' opinion that it should be clear what the resources each collaborator brings to the collaboration.

Table 22.14: *It Is Clear What Resources (Both Financial and Non-Financial) Each Collaborator Brings To the Collaboration*

Responses	Strongly Agree	Agree	Disagree	Strongly Disagree	Total
N	57	28	10	1	96
%	59.4	29.2	10.4	1.0	100

Above 50% strongly agreed that it should be clear what resources (both financial and non-financial) each collaborator brings to the collaboration, whilst 29.2% agreed with the statement and only 11% disagreed with this principle.

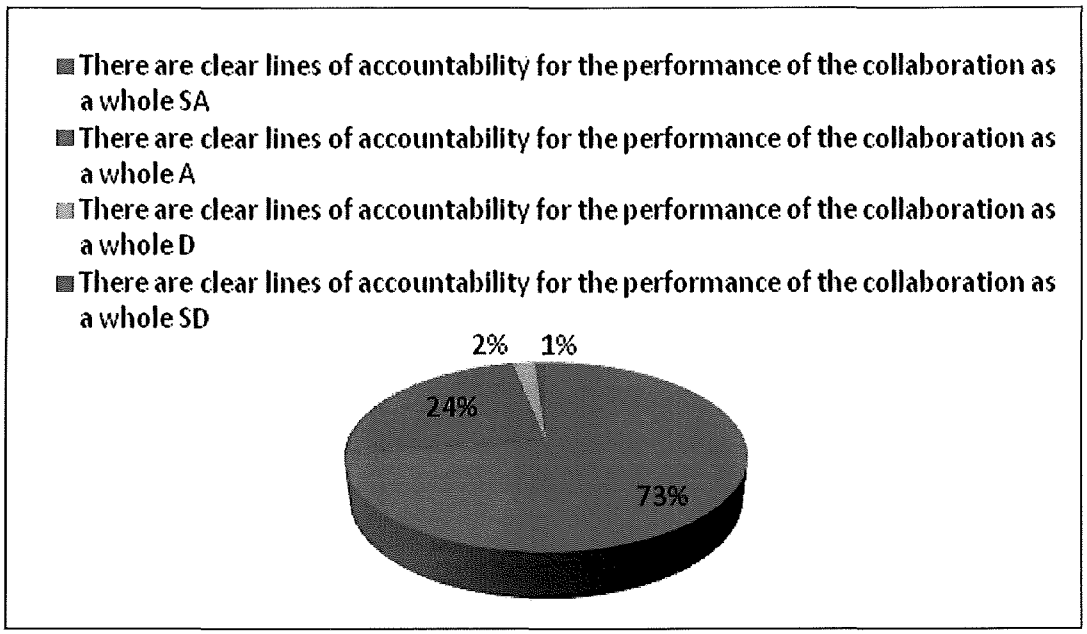
Collaboration Has Dedicated Staff to Support Its Working Arrangement

More than seventy per cent (70.5%) strongly believe that collaboration needs a dedicated staff to support the collaboration arrangement, 25.3% agrees with the statement, and only 4.2% disagrees with this.

Clear lines of accountability for the performance of collaboration as a whole

Seventy-three (73%) strongly believed that clear lines of accountability for the performance of collaboration are very important, whilst 24% agreed with this statement and only 3% disagreed with the statement.

Figure 11.5: *Clear lines of accountability in Collaboration*



4.2.12 Ways in Which Governance Could Improve

Sixty-five participants (74%) responded to this item. The themes that emerged from this open-ended question included the following:

Table 23.15: Ways in Which Governance Could Improve

THEME	SUBTHEME
Participation Leadership	1. Shared decision making 2. Flattened or non-hierarchical relations 3. Regular meetings & information sharing 4. Dynamic & flexible leadership 5. Have a structure responsible for collaboration

Collaboration Has Appropriate Proceedings in Place for Monitoring Its Progress

The majority of nurses indicated the need for collaboration to have appropriate procedures in place for monitoring progress. The highest score was strongly agree (n=66, 69%) followed by agree with 30%, and both disagree and strongly disagree was

only 1%. The table below depicts the opinions regarding appropriate proceedings in place for monitoring collaboration and its progress.

Table 24.16: ***Collaboration has appropriate proceedings in place for monitoring its progress***

Responses	Strongly Agree	Agree	Disagree	missing System	Total
N	66	27	1	1	96
%	68.8	28.1.	1	1	100

A Clear Criteria to Judge Extent to which Collaboration Goals are Achieved

Most participants (67%) strongly agree that a clear criteria to judge extent to which collaboration goals are achieved, and 28.4% agrees with this principle. Only 4.5% disagrees with this.

Communication of collaboration achievements amongst collaborators agencies & beyond

About 97% agrees that communication of collaboration achieved amongst collaborating agencies and beyond is very critical, 69% strongly agreed, whilst 28% agreed.

Table 25.17: ***Communication of collaboration achievement amongst collaborating agencies and beyond is very critical***

Responses	Strongly Agree	Agree	Disagree	Total
N	66	27	3	96
%	69	28	3	100

The key measure of success is the effect the collaboration has upon service users.

The majority of participants (71.6%) strongly agree that with the statement that the key measure of success is the effect the collaboration has upon service users, and 26% agreed with this principle, whilst only 2% disagrees with this statement

The collaboration shows evidence of learning & changing in the light of experience

Most participants (77%) are of the view that the collaboration should show evidence of learning and changing in the light of experience.

Table 26.18: ***The collaboration shows evidence of learning and changing in the light of experience***

Responses	Strongly Agree	Agree	Disagree	Total
N	74	20	2	96
%	77.1	20.8	2.	100

There are other ways in which performance on monitoring and evaluation and learning could be improved. Only twelve participants did not respond to this question. Themes that emerged are displayed in Table 4.18

Table 27.19: ***Other Ways in Which Performance on Monitoring, Evaluation and Learning Could Be Improved***

Theme	Subtheme
Feedback and client satisfaction surveys	1. Used to correct the situation 2. Communicated to all collaborators 3. Giving praise/credit where is due

4.2.13 Opinions Regarding Barriers in Collaboration in Implementing PBL in Nursing Education

Seventy-five per cent (75%) participants strongly agrees that lack of funding can be a barrier to effective collaboration in implementing PBL, and 19.5% agree with this statement. Only 5.2% disagrees that funding can be a barrier.

The results are in line with Barnette et al., (2010:18) who identified finances as significant barrier in collaboration in education as budget holders in education are responsible for funding their own professional group.

Collaboration in implementing PBL in nursing education is likely to be a challenge if funding is not available. Most participants (79.2%) strongly agree that lack of resources can create barriers in collaboration in implementing PBL, whilst 18.5% agrees with this statement. PBL is a resource-intense learning strategy and should be carefully and critically appraised in the decision making process (Gwee, 2009:231). Implementation of PBL alone can be a daunting task and will require detailed and careful planning, together with a significant commitment on the part of collaborative partners.

Health human relationships are necessary for an effective collaboration. The majority of participants (82.3%) strongly agree that poor human skills can hamper collaboration, and 18.7% agree with this statement. Only 1% disagrees with this statement.

4.2.14 Other Barriers That May Hamper Collaboration in Implementing PBL in Nursing Education

This was an open-ended question wherein ninety-seven per cent (n=93; 97%) responded to this question. The following were themes that emerged as barriers that may hamper collaboration:

- Negative attitudes to PBL;
- lack of knowledge of PBL;
- lack of commitment and support from management;
- poor communication;
- lack of respect;
- lack of cooperation;
- distance between collaborators; and
- resistance to change.

4.5 Summary

In this chapter, the results of the questionnaire were presented with minimal discussions as these just expanded the qualitative results. The questionnaire covered opinions regarding definition of collaboration in implementing, abilities and capabilities of participants, types, benefits and barriers of collaboration. The analysis revealed strong and positive opinions and views of nurse educators, nurse managers and preceptors regarding collaboration in implementing PBL in nursing education. The data also revealed suggestions regarding leadership, governance, monitoring and evaluation of collaboration in implementing PBL. These results are merged with those from the core component as presented in Chapter 5, and form the basis for model development.

CHAPTER 5

DISCUSSIONS OF MERGED RESULTS

5.1 Introduction

This chapter integrates the qualitative and quantitative data and reports the findings of the opinions of nurse educator, nurse managers and preceptors regarding collaboration in implementing PBL in nursing education. Using the mixed methods format, the study was divided into two stages, qualitative interviews and descriptive surveys using self-administered questionnaires. Findings generated from the qualitative (N=33) component and literature review informed development of a survey instrument that was used to collect data from a large sample (N=96). It is important to note that the qualitative results constitute the core component and only major themes and categories are detailed and quantitative findings are used to supplement the core component. Subsequently, the *N* changes in this chapter to reflect the mixed samples.

5.2 Results

Table 5.1 depicts participants in the two components of the mixed method

Table 28.1: Number of participants

Qualitative Component	Quantitative Component	Integrated findings
Individual interviews N = 11, and FGD N=33 (44)	N = 96	Total participants N =140 44 (qualitative participants+96 quantitative participants

Individual semi-structured interviews and focus group discussions were conducted from June 2011 to May 2012, whilst the descriptive surveys were conducted from June to July 2012. Participants in the qualitative component of the study were purposively chosen, whilst convenient sampling technique was used to recruit participants for the

descriptive survey. Realization of the qualitative sample was achieved after interviewing eleven (n=11) participants and five FGD (n=33). The distributions by position were as follows: seven (n=7) nurse managers and four (n=4) nurse educators individually. From the quantitative component, 120 questionnaires were personally delivered and also sent through emails to the participants. Overall, 96 were returned, representing 80% return rate.

5.2.1 Characteristics of the participants

Table 5.2: shows the characteristics of the participants in both core (qualitative) and supplementary (supplementary) components

Table 29.2: *Characteristics of participants in both components*

Variable	Qualitative Component	Quantitative Component	Merged Results
Age	Minimum = 31yrs Maximum = 64 years	Minimum = 25 Maximum = 62 years Mean = 49 SD = +- 14	Minimum = 25 Maximum = 64 years
Gender	Female: n= 38 Male :n= 6	Female n= 85 Male n= 11	Female = 123 Male = 17
Position	Nurse Educators = 22 Nurse Managers n= 22 Preceptors n= 0	Nurse Educators =51 Nurse Manages = 30 Preceptors =17	Nurse educators n= 73 Nurse Managers n= 52 Preceptors n= 17
Experience in current position	Maximum experience is 30 years and the minimum years is 5 years	Thirty-nine (44.2 %) participants have more than ten years' experience in the current position, (31.6 %) had 6-9 years and 23.2% had 2-5 years' experience in the current position.	The difference in the years of experience in both designed emanated from the fact that the survey instrument was ranked. However, the majority of participants had more 10 years' experience in current position. This is attributed to the purposive and convenient sampling used.
Highest Qualification	PhD = 8 Masters = 10 Post Basic Diploma = 21 Degree in nursing =5	PhD = 4 Master's Degree = 30 Post-Basic Diploma = 45 Degree in Nursing = 17	PhD, = 12 Master's Degree, = 40 Post Basic Diploma, = 66 Degree in Nursing, = 22

The demography of the participants in both designs is analysed as follows:

Age: There is no significant difference because the maximum ages of the participants in both designs are nearly the same, i.e., for qualitative and 62 for

quantitative. The minimum ages 31 for qualitative and 25 for quantitative, respectively.

Gender: Males are in the minority compared to the females. Therefore, there is no significant impact because of their numbers.

Position: In qualitative design, the participants were purposively recruited to provide rich descriptive data whilst in quantitative participants were conveniently recruited and data saturation was reached after eleven individual interviews and n=33 focus group discussion. The numbers are even; all 22. In quantitative design the participants were conveniently recruited and 51% nurse educator; 32% nurse manager and 17% preceptors returned the questionnaires which were delivered personally and by e-mail.

Qualification: The highest qualification in both designs is PHD and the lowest degree in nursing. The majority of the participants have a post-basic degree nursing diploma.

Like with position, participants were purposely recruited and this makes the difference in the two designs insignificant because in this sampling method, the researcher purposefully selected those that would give the researcher the needed information.

Their qualifications, positions and experience are good for the results because their positions give a better mixture of the key-role players in nursing education. Their experience likewise, gives the researcher a better opinion, view of collaboration. More than 76% of the participants have above six (6) years of experience.

5.2.2 Opinions Regarding Collaboration in Implementing PBL

To reiterate the purpose of stage 1, as described earlier, the six questions that guided this stage of the study were:

1) What are your opinions regarding collaboration in implementing PBL in nursing education?

2) What are your opinions regarding the needs of collaboration in implementing PBL in education?
3) What are your opinions regarding the key role players in collaboration in implementing PBL in nursing education?
4) What are your opinions regarding the benefits of collaboration in implementing PBL in nursing education?
5) What are your opinions regarding the factors contributing to a successful collaboration in implementing PBL?
6) What are your opinions regarding barriers to collaboration in implementing PBL?

The themes that emerged from the interviews provided the basis for the questionnaire which was used to collect the quantitative data. The following were the themes that emerged from the interviews from the first question of the qualitative component and the results of Section 2 of the questionnaire.

Table 30.3: ***Themes from the opinions regarding the importance of various types of collaboration***

Qualitative Themes	Quantitative Results	Interpretation
The importance of different form of collaboration. From this theme, the following categories emerged: intra-professional, inter-disciplinary and inter-institutional collaborations.	N=96; 100% responded to this question and agreed that the different types of collaboration are necessary for implementation of PBL.	The themes that emerged from qualitative results are supported by the quantitative results. With more than 70% supporting these results educational and healthcare benefits following the implementation of inter-professional education are seen as the long-term payback derived from achieving greater collaboration amongst professionals (Pumar Mendez et al., 2008:328). Thus, by encouraging professionals to share knowledge and work collaboratively, intra-disciplinary, inter-professional and inter-institutional collaboration in implementing PBL has the potential to lay down solid foundations on which to integrate professional expertise in order to provide quality education and holistic care, which can then result in improved health outcomes (Pumar Mendez et al., 2008:328; Walsh et al., 2005:231). It can therefore be concluded that the three types of collaboration in implementing PBL are beneficial.
Intra-professional collaboration.	79% participants indicated the importance of Intra-professional collaboration,	
Interdisciplinary collaboration.	75% participants indicated the importance of inter-professional collaboration.	
Inter-institutional collaboration.	69% participants indicated the importance of inter-institutional collaboration.	

Theme 1: Participants verbalized the importance of different forms of collaboration

The categories that emerged from this theme were of the opinion that intra-professional, inter-professional and inter-institutional collaborations are vital in implementing PBL in nursing education. These results were congruent with those from the quantitative component were 79% participants indicated the importance of Intra-professional collaboration, 75% for inter-professional, and 69% for inter-institutional collaboration.

Category 1: Intra-professional collaboration

The sub-categories that emerged from this category include: collaboration between nurse-educators and clinical staff, and collaboration of different nursing disciplines: The section below describes the subcategories that emerged from this categories.

Collaboration between nurse-educators and clinical staff

All the participants from the interviews verbalized the need for collaboration between the nurse educators and clinical personnel. This is supported by 100% of participants who identified nurse educators, and 100% of participants who identified nurse managers and professional staff as the key collaborators in implementing PBL.

Conclusions: Academic-practice collaborations are requisites for effective implementation of implementing PBL and paramount to bridging education preparation as well as achievement of excellence in professional practice.

- *Collaboration between the different nursing disciplines*

During the interviews most participants expressed the need for collaboration between disciplines of nursing both at theoretical PBL classes and clinical areas. This is how one nurse educator said it thus:

> *I also think as educators within the university we should collaborate. Midwifery, community nursing and mental health educators as well as general nursing facilitators we need to collaborate in designing scenarios and*

evaluating learning of students. This will benefit us in effective use of time resources, talents and expertise. I am saying this because at times we work in isolation as mental health and midwifery lecturers. This is evident at times of OSCE assessments when each team schedules their assessment separately. OSCE assessments can be time and human resource consuming. Intra-professional collaboration is important both at the educational institutions and clinical services.

On the contrary, this was not indicated in the quantitative component. However, collaboration requires team work at all aspects of PBL implementation including teamwork by the nurse educators from different disciplines such as midwifery, community nursing and psychiatric nursing. This is because the closed-ended question in the quantitative component addressed only the construct of intra-professional collaboration. This is where the qualitative component benefited this study because it gave complete and detailed description of the phenomenon (De Vos et al., 2011:299). The aim of the qualitative component was to explore in more depth the opinions which came out very clearer when participant gave different types of intra-professional collaboration.

Category 2: Interdisciplinary collaboration

Inter-professional collaboration in implementing PBL in nursing education has been voiced by most participants. This was said by one participant thus:

With me, I am not talking about solutions, but my opinion regarding collaboration in PBL. I think if students from only one subject within the university are using PBL and other teachers from other departments are using traditional methods, it becomes a problem. Collaboration in use of PBL in all the subjects is needed. Collaboration of teachers of all subjects in the nursing programme is a must, especially the non-nursing lecturers. Teachers within the institution should collaborate in teaching the students. Lecturers from department such as sociology, psychology, biology and social work may be very useful as partners in implementing PBL. I believe this will constitute interdisciplinary or inter-professional collaboration. Collaboration will stimulate the students' critical thinking; stimulate students' creativity. I think collaboration with other departments, will make students see the benefits of PBL and the students will enjoy the whole process.

This sentiment have been guaranteed by 100% of participants who were of the opinion that other departments like sociology, psychology, biology and social work should have be collaborative partners in implementing PBL.

Conclusion: Inter-professional or interdisciplinary collaboration is likely to enhance effective implementation of PBL, especially from those departments that are offering non-nursing modules or course such as anatomy and physiology, and social sciences. This was common in both components of this study, namely, qualitative and quantitative component.

Inter-disciplinary collaboration in the clinical services

Most nurse managers indicated the need to collaborate with other multidisciplinary team members in the clinical services where PBL students are placed for clinical learning. This is supported by almost 80% of the participants who responded to an open-ended question on other collaborators indicated that the members of the MTD should be the key role-players in this collaboration.

Conclusion: Involvement of members of the MDT members as collaborators is likely to enrich PBL clinical learning and promote nurturing clinical environment. Multidisciplinary collaboration as a movement across disciplinary boarders in implementing PBL may provide an opportunity to other professionals in health care services to contribute meaningfully to nursing profession and education.

- **Category 3: Inter-institutional collaboration**

Inter-institutional or inter-organizational collaboration as Fisher et al., (2009:4) put it "inter-institutional network can draw on and leverage organizations. The sub-categories that merged from this theme include:

- ✓ collaboration with centres of Excellence in PBL,
- ✓ collaboration of educational institutions with clinical settings,

- ✓ collaboration with other nursing education institutions offering PBL in the country; and
- ✓ collaboration with colleges affiliated to universities offering PBL.

Opinions Regarding Inter-Institutional Collaboration

Table 5.4 depicts the results of opinions regarding inter-institutional collaboration.

Table 31.4: *Opinions Regarding Inter-Institutional Collaboration*

Qualitative Results	Quantitative Results	Interpretation
Collaboration with centre of Excellence in PBL.	N=95, 99% of participants indicated the need for collaboration with centres of Excellence.	The results from both designs reflected the need to collaborate with Centres of Excellence in PBL.
Collaboration of Education institutions and clinical setting.	N=95, 99% of participants also reiterated the need for collaboration of academia and clinical settings.	Participants from both designs indicated the need of collaboration between nurse educators & service people.
Collaboration with other nursing education institutions offering PBL in the country.	This was not indicated in the quantitative component.	On the contrary no-one indicated the need to collaborate with colleges and other universities offering PBL in the qualitative paradigm instead the participants indicated collaboration with students, health care consumers and communities. This was attributed to the difference in the two designs wherein qualitative is explorative and descriptive and seek to obtain rich data.
Collaboration with Nursing colleges affiliated to Universities offering PBL	This was not indicated in the quantitative component.	

Conclusions: Collaboration with Centres of Excellence or champion of PBL is likely to promote mentoring and guidance on PBL curriculum development implementation and evaluation. This type of collaboration is also likely to promote sharing of knowledge, skills and talents. Collaboration in implementing PBL has the potential of bridging the gap between nursing practice and academia is a necessary prerequisite for assuring a qualified nursing workforce for the future and for positioning nurses to address emerging

healthcare needs. Thus, this collaboration is vital for effective implementation of PBL especially that nurse leaders in academia and practice settings have a long history of collaborating with one another for the purposes of enhancing nursing education, care, and practice (Kirscling & Erickson, 2010:286).

Theme 2: Participants perceived benefits in collaboration

Collaboration as a dynamic, interactive and beneficial process of working together has positive outcomes. Most participants in qualitative phase expressed that collaboration is of the benefits, student benefits, organizational benefits and benefits for the health care consumers. Table 5.5 depicts opinions regarding the benefits in collaboration.

Table 32.5: *Opinions regarding benefits in collaboration*

Qualitative Results	Quantitative Results	Interpretation
Staff benefits • Information and expertise sharing • Personal and professional development and mentoring	• Staff development and empowerment of staff • Sharing development on collaboration skills, • Mentoring from champions of PBL • Sharing of responsibilities and accountability of nursing education issues	The results from both components indicated staff benefits of collaboration to both academic and clinical staff. Information sharing, professional and human capital development was found to be common between designs.
Students Benefits • Professional socialization • Obtaining the best from experience of collaborators • Quality education	Most participants (n=92; 96%) agreed that collaborative work in implementing PBL results in greater student's satisfaction. Over ninety per cent (n= 93; 97%) agreed that collaborative work provides better support during interventions and only 3% disagree with this statement More than eighty per cent (98%)	From both results it is evident that the students as clients of nursing education are the beneficiaries of collaboration. multiple benefits of collaboration to students included:

• Competent graduate	agreed that collaborative work improves the quality of nursing education. The majority (97%) agreed that collaborative work improve the quality of service to student. • Development of students • Independent learner • Role modelling of collaboration • Quality education • Supportive and nurturing learning environment	• quality education • improved interventions, and • students' satisfaction
Health care consumers benefits • Quality patient care • Team approach	• Quality patient care	Similar outcome was found.
Organizational benefits • resource sharing, • effective utilization of resources	96% of participants who agreed that collaborative work in implementing PBL decrease duplication of services	Effective and economic use of resource was reported in both designs. More importantly, given that inter-professional education provides practitioners with a broader knowledge base, professionals are better able to cope with a wider number of tasks. This, in turn, leads to a more flexible workforce, maximization of human resources and alleviation of workforce shortages (Pumar Mendez et al., 2008:328; and Walsh et al., 2005:231)

Category: Staff benefits

According to participants, collaboration in implementing PBL is beneficial to both academic and clinical staff:

The identified staff benefits included:

- Information and expertise sharing
- personal and professional development and mentoring

These were also supported by comments endorsed in the open-ended question of the data collection instead of the supplementary component where participants documented:

- Staff development and empowerment of staff;
- sharing development on collaboration skills;
- mentoring from champions of PBL; and
- Sharing of responsibilities and accountability of nursing education issues.

Category: Students Benefits

Students were identified as the beneficiaries of collaboration in implementing PBL. PBL is a strategy to assist student to develop critical thinking, problem solving, information search skills, communication and collaboration skills. Participants invoiced that students will benefit from collaboration in implementing PBL in the following ways:

The student benefits included:

- Professional socialization;
- obtaining the best from experience of collaborators;
- quality education; and

- compete graduate;

This was reiterated by the quantitative results wherein participants documented the following benefits in the open ended question:

- Development of students;
- independent learner;
- role modelling of collaboration;
- quality education; and
- supportive and nurturing learning environment.

Conclusion: With collaboration in implementing PBL with different key-role players such as clinical practitioners, MDT and Centres of Excellence in PBL nursing students are likely to benefit more in addition to the spin-off benefits of collaboration.

- **Health care consumers benefits**

Nursing education is all about training future health care human resource to provide health care services to the individuals, families, groups and communities. Most participants verbalized the following health care consumer's benefits:

- ✓ Quality patient care; and
- ✓ team approach.

The theme that merged from an open ended item in the questionnaire is quality health care. This supports the qualitative results.

Conclusion: Collaboration in implementing PBL is likely to promote production to a competent graduate who will be able to solve problems, work independently, work effectively within the MDT, and that contribute to quality health care.

- **Organizational benefits**

Participants voiced the following organizational benefits: resource sharing, and effective utilization of resources. The responses from the participants in the qualitative components yielded similar results. Themes that emerged from an open ended of other benefits of collaboration included:

- ✓ Sharing of resources;
- ✓ sharing of time and talents; and
- ✓ effective utilization of resources.

This is also supported by 96% of participants who agreed that collaborative work in implementing PBL decrease duplication of services.

Conclusion: Collaboration in implementing PBL promotes group cohesion and minimizes duplication of services, thus promote effective utilization of resources, sharing of information, time and talents. This collaboration can also increase efficiently as collaborations contribute individual but different expertise to scenario development, PBL facilitation in both clinical and theoretical institutions. Collaborative and interdisciplinary teamwork is a way to overcome limited financial and human resources and to ensure that PBL programme and knowledge development are responsive to health care consumer's needs.

Theme 3: Factors contributing to a successful collaboration

Several pre-conditions must be in place in order for collaboration in implementing PBL to be a success. Participants perceived the following as factors that contribute to success in collaboration: Governance and leadership, communication, and active participations of collaborative partners. See Table 5.6

Table 33.6: ***Governance and Leadership as Factors contributing to a successful collaboration***

Qualitative Results (categories)	**Quantitative Results**	**Interpretation**
Governance and Leadership Commitment from strategic management	97% participants agreed that a clear commitment to collaboration working from most senior levels of management	Supporting collaborative groups by allowing time to adapt and foster the skills required for collaboration is important (Heatley & Kruske, 2011:54). Therefore, it is important that there is a commitment at the organizational level to allow time and resources to develop and maintain collaborative skills of individuals.
Common goal	98% agreed that a clear vision is shared by all, as well as strong values that are accepted and understood by all parties. Hundred per cent (100%) of participants agreed that the reasons why each collaborator is engaged in collaboration are understood and accepted	Having a common goal can focus a non-cohesive group to cooperate in collaborative practice the identification and sharing of common goals is an essential point of departure for a collaborative undertaking. A clear, common organizational and objectives can provide a framework within which to define collaboration strategies and goals; and determine the success of collaborative projects. Clearly defined goals provide a common ground for communication and structure about collaborative activities (Patel et al., 2012:14).
Contract and agreement • memorandum of understanding, • level service agreement	Ninety-five (95) per cent (%) of participants agreed with this principle by agreeing that each collaborators area of responsibility must be clear and understood	Formalization of collaboration through contractual agreement is crucial in this collaboration.

• interagency agreement		
Continuous development of collaborators on PBL	Training and development of collaborators emerged as recurrent in most of the open-ended question at the end of every principle of collaboration	For effective collaboration, personnel need training and development on PBL in order to assist undergraduate health professionals Dorman, Scherpbier, King, and Boshuizen (2005:163) confirm the need for development of academic and clinical professionals on PBL as PBL methods did not automatically transfer in clinical teaching.
Monitoring and evaluation collaboration	The highest score was strongly agree (n=66, 69%) followed by agree with 30%, and both disagree and strongly disagree was only 1%. the table below depicts the opinions regarding appropriate proceedings in place for monitoring collaboration and its progress	From both designs, for a successful collaboration a continuous monitoring and evaluation to assess the progress and success of the collaborative partnerships in implementing PBL is necessary.

Category 1: Governance and Leadership

Governance and leadership are critical in collaboration to give direction to and support collaborative partners as the implement interdisciplinary and inter-institutional collaborative practices in the implementation of PBL in nursing education. Participants verbalized the importance of the following for the successful collaboration:

- Commitment from strategic management;
- common goal;

- contract and agreement; and
- continuous development of collaborators on PBL.

Commitment from strategic management

These results are confirmed by qualitative results wherein 97% participants agreed that a clear commitment to collaboration working from most senior levels of management. Senior management support contributes both directly and indirectly to collaboration performance (Brinkerhoff, 2002:24). Direct support translates into resource commitment, namely, finance, personnel and time. Indirectly, participation and support of senior or executive management symbolizes institutional commitment to collaboration and contribute to trust building among collaborators (Brinkerhoff, 2002:221).

Conclusion: Collaboration in implementing PBL in nursing education cannot succeed without senior management support and commitment of resources such as time, staff, materials and facilities. Collaboration is likely to succeed if it has commitment leadership and governance as well as effective mentoring to provide both formal and informal leadership.

- **Common goal**

Most participants verbalized common or shared goal as a prerequisite for a successful collaboration in implementing PBL. As one puts it:

> *Common goal in collaboration is very important in any collaboration. In this instance, our common goal will be training a nurse through PBL implementation. If we have share mission and goals, our collaboration will be in the right direction. We must see the same hill and move toward it. This, I mean we must have a common goal as collaborators.*

These results are supported by 98% of participants in the quantitative who agreed that a clear goal and vision shared by all is critical for a successful collaboration in implementing PBL in nursing education.

Conclusion: Shared goals and vision as indicators of collaboration are related to professional values in the form of common goals, thus identifying and sharing goals are essential points of departure for any collaboration in implementing PBL.

- **Contract and Agreement**

Formalization of collaboration through contractual agreement is crucial in this collaboration. Most participants voice this in different ways, namely, memorandum of understanding, level service agreement and interagency agreement. Those are quotes from a nurse manager and educator. This what the nurse manager said:

> *Generally, your collaboration is to be formalized. It's basically for people to come together either coming together or engaging new issues of LSA. LSA or level service agreement is where we would then understand as we work together, this is what I am expecting from this partner, and this is what I should be giving that particular partner. So that then they understand what is it that we are sharing, what is it that they are giving each other, and then how are they taking the process forward. LSA entails the goal for collaboration, type, duration of the collaboration roles and responsibilities.*

The nurse educator said this:

> *Yes...I think the collaboration should be formalized. There should be formalization at the level of maybe district or hospital. I am not sure...but I don't think it should not be formalized at a lower level, but maybe at a higher level like district or hospital level. I think they should formalize it (collaboration) per district by use of memorandum of understanding. This MOU will stipulate roles and responsibilities of each collaborator and will also be used to evaluate the progress.*

Ninety-five per cent (95%) of participants agree with this principle by indicating that each collaborators area of responsibility must be clear and understood. This is possible in a contractual agreement where the roles, responsibilities and tasks of each collaborating individual's, teams or institutions are detailed.

***Conclusion*:** Formalization through MOU is an important means of clarifying the various partners' responsibilities and negotiating how responsibilities are shared in collaboration. A memorandum of understanding stipulating the type and duration of collaboration, roles, responsibilities and tasks of collaboration partners is necessary for

collaboration in implementing PBL to succeed. This formal agreement has an advantage of supporting accountability.

- **Continuous Development of all collaborators on PBL strategies.**

The collaborators were of strong opinion that all collaborators need development on PBL. This statement depicts what the participant voiced:

> *Like I said earlier, our top management should know about this collaboration. If possible, they should also be trained on PBL. They should be informed about PBL so that they know and be able to offer support at operational level. Education and training on PBL will empower all collaborators to effectively implement PBL at both clinical and classroom setting.*

The survey participants were asked to suggest other ways in which collaboration can be made successful, training and development of collaborators emerged as recurrent in most of the open-ended question at the end of every principle of collaboration.

Conclusion: Training and development of collaboration partners in PBL is required for task completion and the act of collaboration itself. Personal and professional development training opportunities on PBL are associated with improved productivity and collaborators satisfaction. It is also likely to provide opportunities for collaborators to acquire new skills or improve existing skills and shared mental modules.

- **Monitoring and Evaluation(M &E) of collaboration**

For many times collaboration in projects and activities are hampered because little attention is given to monitoring and evaluation. Participant clearly articulated that M&E is a vital component for a successful collaboration. This is what one nurse educator articulated:

> *Another critical aspect for a successful collaboration is a continuous monitoring and evaluation to assess the progress and success of the collaborative partnerships in implementing PBL. The collaboration can be assessed regularly by the collaborators including the recipient of collaboration, namely, the students, clients' satisfaction interview, and self-evaluation using partnership tool.*

In support of these findings, 99% of participants agreed with the statement that monitoring and evaluation is required for a successful collaboration.

Conclusion: Monitoring and evaluation of collaboration to ensure that decisions agreed upon are honoured within the scope and parameters are another contributing factor to success. Collaboration in implementing PBL is more likely to create a great value if leaders engage in regular assessment, monitoring and evaluation to highlight successes and failures. Monitoring and evaluation will highlight areas requiring corrective or remedial actions.

Category 2: Communication

Table 5.7 depicts communication as a factor that contributes to successful collaboration and what D'amour et al., (2008:8) describe as internalization dimension of collaboration.

Table 34.7: *Communication and collaboration success*

Qualitative Results (categories)	Quantitative Results	Interpretation
Communication • Open communication • Regular meetings • Mutual understanding and respect • Collegial relations and mutual trust	Participants in quantitative survey reiterated the following themes in the open ended sections:- • Mutual trust and respect • Effective communications • Cooperation and • Teamwork	Giving opportunity for unstructured and spontaneous communication and information sharing also enhances inter-professional collaboration (Heatley & Kruske, 2011:54). Interpersonal and process skills are relied on heavily in collaboration. Therefore, collaboration is possible when mutual trust, respect and knowledge of each other's contributions are developed. Healthy interpersonal skills have a potential to enhance an effective collaboration in implementing PBL.

Participants indicated that a successful collaboration is characterized by client communication. The following are the sub-categories that emerged from this category:

- Open communication;
- regular meetings;
- mutual understanding and respect; and
- collegial relations and mutual trust

These results were reiterated by participants in qualitative survey wherein the following themes recurrently emerged in the open ended sections:-

- Mutual trust and respect;
- effective communications;
- cooperation; and
- teamwork.

Conclusion: Communication in collaboration in implementing PBL need to be open, honest, respectful and purposeful. Communication in collaboration underpins how people understand each other and how knowledge is transferred.

- **Mutual understanding and respect**

Requisite to effective collaboration include mutual understanding and respect that is characterized by tolerance for sharing power and willingness to adapt operations. Participants viewed mutual trust and respect as necessary for collaboration in implementing PBL to work. One participant articulated that:

> *I think mutual understanding and respect are very vital for the collaboration to succeed. If we do not respect each other as nurse managers and educators, problems will erupt and students may pick that up and use it as excuses not to do their work. We should at all times protect the integrity of each other and*

make efforts to understand each other. When conflicts arise we should resolve those amicably and effectively.

The variable on mutual understanding and respect was not evaluated in the descriptive survey. However, Kinnaman and Bleich (2004:311) and Brikerhoff (2002:225) emphasize that mutual understanding and respect are key components in collaboration.

Conclusion: Mutual understanding and respect as components of collaboration in implementing PBL are critical, and have the potential to reduce uncertainty.

- **Non-hierarchical relationship characterized by mutual trust and respect**

Participants indicated the need for a non-hierarchal relationship that is characterized by mutuality for collaboration in implementing PBL to succeed. This is what was articulated by one nurse educator:

Eh...I think first of all recognition of status of each person and flatted hierarchy. People should not assume MBCH is the person on the upper position rather recognize the actual expertise and the most experience in that area. No one should view himself as superior to the other, but relate collegially as partners. Eh...eh... I think that is probably critical to the success of inter-disciplinary and intra-professional collaboration in implementing problem-based learning. Eh...eh...so far in our dealings, I think it is probably going to be ok. So we will see, but I think that is the core to collaboration.

The results are supported in the quantitative component wherein the theme flattened structure appeared recurrently.

Conclusion: Success of collaboration in implementing PBL is probably dependent on team oriented environment with non-hierarchical or collegial relations that are characterized by mutual trust and respect. Equality or flattened hierarchical relations are likely to be another conscious strategy to nurture and strengthen collaboration in implementing PBL in nursing education context.

Category 3: Active participation of collaborators

Collaboration cannot be one-sided; it requires active, mutual engagement in the collaborative process at some level from all the involved parties (Longoria, 2005:125).

The participants verbalized that for collaboration to succeed, it is critical that the involved individuals, teams or institutions participate actively.

Theme 4: Barriers to collaboration

Participants voiced lack of funds and interpersonal skills as impediments to collaboration in implementing PBL. Table 5.8 depicts the barriers to collaboration from both qualitative and quantitative components.

Table 35.8: ***Barriers to collaboration in implementing PBL***

Qualitative Results (categories)	Quantitative Results	Interpretation
Lack of funding	Seventy five per cent (75%) participants strongly agree that lack of funding can be a barrier to effective collaboration in implementing PBL, and 20% agree with this statement. Only 5% disagree that funding can be a barrier.	Collaborative models are often not sustained when there is a lack of funding. Most significant barrier to collaboration is financial. PBL is a resource intense learning strategy and should be carefully and critically appraised in the decision making process.
Poor interpersonal relationships • **poor communication** • **lack of cooperation** • **lack of trust and respect**	The majority of participants (99%) agree that poor human skills can hamper collaboration and only 1% disagrees with this statement.	Quantitative results are in line with those from qualitative component. Health human relationships are necessary for an effective collaboration.

Conclusion: When collaborative practice occurs, several barriers may be encountered. From the results, it is evident that the significant barrier to collaboration is financial. This is congruent with Barnette et al., (2010:18) and Kirschling and Erickson (2010:287) who reported that the most significant barrier to collaboration in education is financial. Thus strategic management commitment and support are crucial in collaboration in implementing PBL in nursing education. Lack of funding can be an impediment to collaboration in implementing PBL in nursing education and prevent the collaborative partnership from moving forward or limit its dissemination.

Another common break down in collaborative practice is lack of communication. If the collaborative partners are not communicating with each other, there will not be consistency and continuity in collaboration in implementing PBL. As stated previously, collaboration can only be successful if the team works together. Working together requires communication.

Lack of mutual trust and respect can be a potential barrier to collaborative partnership. If there is not respect and trust for each discipline in the collaborative team, the team will not effectively work together, putting the students at risk. It also puts the students in the position of feeling unsafe. Students will pick up on the lack of trust among the team. Thus, factors contributing to a successful collaboration in implementing PBL were reiterated in both designs. Collaborative practice, when properly orchestrated, has a potential for amazing results.

5.3 Summary

This chapter reported the mixed findings of the exploratory sequential study and it was evident that the quantitative results supplemented the qualitative components on the major themes and categories that emerged from the qualitative interviews. Both designed indicated congruency in the following;

- The need for various types of collaboration; namely intra-professional, interdisciplinary and inter-institutional collaboration;

- Benefits of collaboration; namely staff , students, organizational and health care consumers' benefits;
- Factors contributing to a successful collaboration; and
- Barriers to collaboration.

The difference in the results is when the qualitative results further provided rich descriptive data which could not be measured by use of the questionnaire. From both designs, the collaboration is the significant concept and need analysis. The next chapter deals with concept analysis for the development of a tentative structure for a model to develop collaboration in implementing PBL in nursing education.

CHAPTER 6

DESCRIPTION OF CONCEPT ANALYSIS, CLASSIFICATION AND MODEL DEVELOPMENT

6.1 Introduction

This chapter deals with concept analysis and classification as well as the development of a model of collaboration in implementing PBL in nursing education. Concept analysis deals with the use of words that reveal the characteristics or attributes of a phenomenon (Petri, 2010:73). The evolutionary view of concept analysis focuses on the clarification of the concept and its use, uncovering the attributes of the concept as a basis for further development (Rodgers & Knalf, 2000:83). The concept collaboration is classified within a practice model as prescribed by Dickloff, James and Wiedenbach (1968:434–435) using the elements of practice theory. The model description is based on Chinn and Kramer's (2011:184-196) method consists of the following componetnts: Overview of the model, the purpose of the model, the structure consisting of assuptions on which the model is based, relationship statements and the nature of the structure.

6.2 Objectives of the Chapter

The objectives of this chapter include:

- Analysis of the concept collaboration using Rodgers and Knalf's (2000:83) evolutionary view of concept analysis; and
- Classify the activities according to Dickoff et al.'s Survey List; and
- Develop the collaboration model in implementing PBL.

6.3 Concept Analysis and Classification

Concept analysis was done according to Rodgers and Knalf (2000:83) framework and classified within a practice model as prescribed by Dickoff, James and Wiedenbach (1968:434–435) using the elements of practice theory. Subsequent to this, the model

was developed according to Chinn and Kramer (2011:184-196). The following sections describe concept analysis, classification and model development.

6.3.1 Concept Analysis

The evolutionary view of concept analysis focuses on the clarification of the concept and its use, uncovering the attributes of the concept as a basis for further development (Rodgers & Knalf, 2000:83). This framework was used to clarify the critical attributes of collaboration, identify elements needed to be present (antecedents) for the concept to occur, distinguish the concept from the multitude of related terms; and to assist in development of a comprehensive definition to facilitate the application of the concept in nursing education practice (Petri, 2010:73).

The following activities of Rodgers and Knalf's (2000:85) framework were used to guide the analysis of the concept "collaboration":

- Definition of the concept of interest;
- Identification and selection of appropriate realm (setting and sample) for data collection;
- Data collection relevant to identify the attributes of the concepts along with surrogate terms, references, and antecedents;
- Data analysis regarding the above characteristics of the concept; and
- Identification of model case.

6.3.1.1 Concept Definition

Concept analysis was conducted from a theoretical perspective of Rodgers and Knalf (2000:83) and from the opinions of the nurses regarding collaboration in implementing PBL in nursing education. Below is identification of the concept of interest. The discussion that follows is about identification of the concept.

- **Identification of the concept of interest**

Concept identification is a process of identifying a concept that accurately describes the participants' opinions emergent from the findings. The concept of interest in this study

which was identified from interviews with nurse educators', managers' and preceptors' opinions and views. Collaboration in implementing PBL has been shown to be useful in disciplines such as social work, medicine, information technology, management and business.

In order to define and describe the concept "collaboration" in implementing PBL to its attributes, each word is defined in a general way from the dictionary, after which it was defined using subject specific literature to place it in the proper context.

- **Definition of Concept Collaboration**

Collaboration is an intricate concept with multiple attributes. It is defined in a variety of ways, many of them explicitly referring to interdisciplinary collaboration. Collaboration maybe succinctly defined as "the act of working jointly" (*Collins Dictionary*, 2009:146). In general, in business dictionary collaboration is described as a cooperative arrangement in which two or more parties (which may or may not have any previous relationship) work jointly towards a common goal (http:// www.businessdictionary.com/ definition/work.html).

Webster's online dictionary (http://www.webster-online-dictionary.org/definitions/ collaborations notes three uses of the term collaboration, namely; (1) to work jointly, especially with one or limited others in a project; (2) to cooperate with or assist willing fully with an enemy of one's country; (3) to willing fully cooperate with an agency. Dorner, Taylor and Hodson-Carlton (2001:135) defined collaboration as a process of shared creation. Individuals with complementary skills interact to "create a shared understanding that none had previously possessed or could have come to on their own". These authors also indicate that collaboration require that all parties work towards a common goal. In this case, the goal of collaboration is effective implementation of PBL in nursing education.

Jenerette, Funk, Ruff, Grey, Adderly-Kelly and McCorke (2008:18) define collaboration as working together so that the needs of each individual or organization in a situation are considered and every collaborator affected by a decision participate in it. The

authors also regard collaboration as a process leading to increased cooperation. It is further regarded as a cooperative venture based on shared power and authority. It is non-hierarchical in nature. It is assumed power base, shared goals and objectives; knowledge and experience with the change process, strong leadership, and highly efficient work and student involvement. Brinkerhoff (2002:216) explains collaboration as a dynamic relationship among diverse actors, based on mutually agreed objectives, pursued through shared understanding of the most rational division of labour. Collaboration encompasses mutual influence, with careful balance of synergy and respective autonomy, which incorporated mutual respect, equal participation in decision making, mutual accountability and transparency.

Pre requisite and success factors of collaborative relations include:

- Tolerance for sharing power; and
- Willingness to adapt operations and procedures to facilitate the collaboration performance (Brinkerhoff, 2002:216).

According to Brinkerhoff (2002:216), characteristics of collaborative partnership include:

- Willingness to share ideas and resolve conflicts
- shared responsibility of decision making;
- achievement and mutual and individual goals; and
- shared accountability of outcomes.

Larson (2003), as cited in Jenerette (2008:18), describes components of successful collaboration as structural, process and outcomes. Characteristics of structural component include standardized methods of communication, convening meetings and decision making. It also includes formal agreement for sharing information and other collaborative activities. The process component includes clear and explicit shared goals and objectives, knowledge and experience with change process; strong and clear leadership and highly efficient work processes. The outcomes components are characterized by measureable work products such as students' results and competencies.

In business management, collaboration can be found both inter- and intra-organizationally (Eisingerich & Bell, 2008:496) and ranges from the simplicity of a partnership and crowd funding to the complexity of a multinational corporation. Collaboration between team members allows better communication within organization and throughout the supply chains. It is a way of coordinating different ideas from numerous people to generate a wide variety of knowledge (Eisinrich, Rubera & Seifert, 2009:358).

From the management context, Gray (1989:15) explored collaboration as a process by framing it in three phases:(1) problem setting; (2) directing setting; and (3) structuring. During problem setting collaborators negotiate the right and need to participate. Agreement on the need and what actions and resources are needed to address the problem or need are established during the direction setting phase. During the structuring phase, those agreements are implemented by allocating roles, responsibilities and resources (Gray, 1989:15).

Collaboration is both a process and an outcome in which shared interest or conflict that cannot be addressed by any single individual is addressed by key stakeholders (Hendrix et al., 2011:150). A key stakeholder is any party directly influenced by the actions others take to solve a complex problem. The collaborative process involves a synthesis of different perspectives to better understand complex problems. A collaborative outcome is the development of integrative solutions that goes beyond an individual vision to a productive resolution that could not be accomplished by any single person or organization.

Webster's online–dictionary (http://www.webster-online-dictionary.org/definitions/collaborations) defined educational collaboration as on-going involvement between institutions and service/ business/ industry/ community organization. Educational collaborative partnership are established by a mutual agreement between two or more parties working together on projects and activities that will enhance quality of education of students while improving skills critical to success in the workplace (http://www.webster-online-dictionary.org/definitions/collaborations).

Collaboration is identified within the supply chain management discipline as a strategy that helps to link inter-institutional business research operations in order to achieve a shared market opportunity (Cao & Zhang, 2011:165). Through collaboration, institutions should aim at maintaining a competitive advantage in their core areas of operation.

In Human Resource Management, collaboration is defined by Bedwell, Wildman, Diaz-Granados, Salaza, Kramer and Sala (2012:138) as "an evolving process where two or more social entities actively and reciprocally engage in joint activities aimed at achieving at least one shared goal". The definition gives the most critical attributes of collaboration.

Collaboration in Education – two or more co equal individuals voluntarily bring their knowledge and experience together by interacting toward a common goal in the best interest of students for the betterment of their educational success (Mfum-Mensah, 2011:465). Students achieve team building and communication skills meeting many curricular standards. Students have the ability to practice real-world communication experiences. Students gain leadership through collaboration and empower peer to peer learning (Mfum-Mensah, 2011:465).

Mfum-Mensah (2011:465) defined collaboration as "joint work" for "joint purposes" in one or more areas of shared concern, promoting mutual survival of member institutions. It is a condition that occurs when two or more people or organizations join forces over a long period of time to produce something which cannot be achieved alone (Mfum-Mensah, 2011:465).

In the field of education, collaboration is viewed as a transformative process for policy reforms and classroom teaching. According to Mfum-Mensah (2011:465), collaboration leads to:

- Complementary knowledge for educational programme
- creativity and improved thinking; and
- bringing of diverse people and organizations together for new perspective to conceptualization and problem solving.

The review of the definitions provided in dictionaries and subject related literature has now been completed. The next step is to list the attributes of the concept, so that they can be reduced to essential and related criteria.

Identification and selection of an appropriate setting

A setting refers to the time period to be examined and the discipline or type of literature to be included (Rodgers & Knalf, 2000:93). The literature search for this analysis was performed utilizing electronic databases. The sample was selected from English language literature with a human subjects focus. To gain an understanding of the current meaning of collaboration, the search period was designated as from 1990 through 2012. The keywords for the searches included *collaboration* and *partnership in nursing education and in health care, interdisciplinary collaboration and inter-professional collaboration.* The search was also performed in the CINAHL, Medline, and PsycINFO databases, respectively. The sample for analysis was drawn after the relevant literature on collaboration was studied. Two (2) articles, namely, D'Armour et al., (2005:116) and Henneman et al., (1995:105) frequently cited in this random sample were also included in the literature review. The data collected from the articles were reviewed for trends that would reflect the current state of knowledge for collaboration as a concept.

6.3.1.2 Data Collection regarding attributes of the concepts along with surrogate terms, references, antecedents and consequences

In evolutionary method of concept analysis, data collection is an inductive, discovery approach focusing on identification of relevant aspects of the concept (Rodgers & Knalf, 2000:90). In this study, the researcher reviewed the literature to identify data relevant to the attributes of collaboration in implementing PBL in nursing, its contextual features (antecedents, consequences, surrogate and related terms and referents). The sources consulted include: dictionaries, books, and professional literature and web searches. Both primary and secondary sources were utilized to identify relevant aspects of collaboration and to get comprehensive understanding of collaboration. The search term "**collaboration**" was directed towards nursing education and problem based learning.

The section that follows describes the attributes of collaboration.

a. Identification of defining attributes

Attributes are the 'defining characteristics or salient features of a concept that assist in identifying its occurrence" (Chen, Shilling & Courtney, 2001:125). According to Rodgers and Knalf (2000:85), attributes of the concept constitute a real definition, as opposed to a nominal or dictionary definitions that merely substitute one synonym expression. According to Hendrix et al., (2011:150) attributes of successful collaboration vary according to the original purpose of the collaborative partnership. Typically, those attributes involve a mixture of domains such as clinical, educational, business and metrics (both process and outcome oriented).

In reviewing the literature, it was noted that a formal definition of collaboration in implementing PBL in nursing education was not provided. Instead, collaboration was placed on nursing education, practice, clinical learning and research. However, various attributes of collaboration in health care practice and education were consistently noted in literature from nursing, medicine, management and business and education.

The critical underlying assumptions regarding collaborations drawn from literature are discussed hereunder.

- **Collaboration is an evolving process**

The literature has conceptualized collaboration as a process (Bedwell et al., 2012:130; and Patel et al., 2012:1). Gray (1989:15) states that: collaboration is essentially an emergent process rather than a prescribed state of organization. By conceptualizing collaboration as a process that involves parties interacting together, this definition retains the dynamic and evolving nature pervasive in definitions across disciplines (D'Armour et al., 2005: 117). Collaboration is not static but dynamic and changes over time. Furthermore, collaboration is an active process involving interpersonal interactions and relationships that change over time (Bedwell et al., 2012:130; and Patel et al, 2012:5). Collaboration is viewed as a process that can evolve, improve, and change over the course of its life cycle.

- **Collaboration is transformational**

Collaboration is transforming in the sense that you do not leave the same way you came in:

a. There's some sort of change;
b. you give up part of yourself;
c. something new has to be created; and
d. something happens differently because of the process (Thomson & Perry, 2006:20).

- **Collaboration requires two or more social entities**

A significant attribute of collaboration is that two or more individuals must be involved in a joint venture, typically one of an intellectual nature. Collaboration is seen by scholars in organizational behaviour, sociology, and anthropology as a process that involves interaction among social units, including people and organizations (Longoria, 2005:125). For both social interaction and working together, two or more entities are required. Moreover, collaboration can occur between a variety of entities, including "individuals, groups, organizations, or even societies" (Longoria, 2005:125). The term entity is used to refer to individuals, teams, units, departments, functional areas, organizations (Bedwell et al., 2012:130). Collaboration is not limited to just the same level of entities (i.e., two organizations or two teams), but rather it can also occur across-levels. Collaboration can occur (1) between individuals and organizations (2) across levels of analysis and involve any combination of individuals and organizations.

- **Collaboration is reciprocal**

Henneman et al., (1995:105) have described collaboration as distinctly reciprocal. Collaboration cannot be one-sided; rather, it requires active, mutual engagement in the collaborative process at some level from all involved parties (Longoria, 2005:125). More simply stated, one party dictating and controlling another party cannot be considered

collaboration as this type of interaction would be better defined as delegation of work, or even as coercion. It is critical that all involved entities work interdependently and contribute sufficiently towards reaching their joint aim (Bedwell et al., 2012:132). In essence, collaboration is a back-and-forth reciprocal process that requires each involved party to actively contribute in some way across the lifecycle of collaborative effort.

- **Collaboration requires sharing**

The attribute of sharing is used liberally in the literature to describe characteristics (AACN, 1995:131; Patel et al., 2012:5; D'Amour et al., 2005:127; and Dorner et al., 2001:135). Most notably attributes are, namely, sharing a goal objectives, responsibility, decision making and power. The presence of shared goals, objectives or vision is necessary to ensure that collaborators are united and working towards a common outcome.

Sharing of power, resources and expertise are important in the quest for improving the quality of nursing care (AACN, 1997:131). Shared planning and decision making, a team approach, shared responsibility and shared power, are all requisites of collaboration in clinical learning. As an attribute for collaboration in implementing PBL in nursing education, sharing implies equal participation of all collaborators. Sharing of responsibility implies that involved partners cooperate in the process of collaboration and have accountability (D'Amour et al., 2005:124; and Henneman et al., 1995:105).

Shared decision making ensures that the perspectives of all collaborators are taken into consideration during the planning and implementation of PBL in nursing education. Collaborative partners in implementing PBL need sharing of power, resources and expertise in quest of improving nursing education. Shared planning and decision making, team approach, shared responsibility and shared power are all characteristics of collaboration (Bedwell et al., 2012:135).

- **Collaboration requires communication**

Communication in collaborative work underpins how people understand each other and how knowledge is transferred (Patel et al., 2012:9). Communication should be open to enable informal and formal exchange of tasks and contextual information to support collaboration (Lehna & Byrne, 1995:177; Dorner et al., 2001:135; and Quiknless et al., 1997:305). Overriding ingredient for collaboration in implementing PBL in nursing education is communication, communication and more communication. For example, routine information calls, calls for help, helps for proactive assistance and other similar calls are crucial for success. According to Quinless et al. (1997:306), such calls engender true "jointness" to address challenges. Open, frequent, balanced, two-way, multilevel communication is generally an indication of close collaboration (Cao & Zhang, 2011:166). Establishment of effective communications one-on-one, among subgroups, web-based, telephonic, and with printed information (quantitative and qualitative) contributes to a successful collaboration.

- **Trust is a must in collaboration**

Good collaborative efforts are characterized by mutual trust and respect and these should be established early in collaboration. According to Patel et al., (2012:13), people are more likely to trust those who are similar to themselves (e.g., in age, status, cultural, professional and educational background). Trust, willingness to communicate and sharing information openly indicate individual and organizational readiness to collaborate in any endeavour including implementing PBL (Patel et al., 2012:13).

- **Equality in relation**

American Association of Colleges of Nursing (1997:130) viewed equality among the collaborators as an indicator of collaboration. Collaborative efforts should focus on becoming peers. Collaboration requires partners to see themselves as peers and to share sense of ownership. Carnwell and Carson (nd: 15) refer to this as non-hierarchical relationship.

These views highlight the common attributes that emerged from the literature review on collaboration. Defining attributes that emerged in the literature in relation with collaboration include:

1) Commitment;

2) Intellectual and cooperative endeavour;

3) Joint venture;

4) Participation in planning and decision making;

5) Equality or non- hierarchical relationships;

6) Willingness to work together towards agreed purpose; and

7) Trust and respect for collaborators (Carnwell & Carson, nd:11; Henneman et al., 1995:105; Barnett et al., 2010:18; McWhirter, Courage, Yearwood–Dixon, 2003:135; Mfum-Mensah, 2011:465-471; Kinnmann & Bleich, 2005:310-315; and Sullivan et al., 2001:139-150).

b. Identification of surrogate terms

Surrogate terms are words or phrases that serve as manifestations of the concept and often used interchangeably. Rodgers and Knafl (2000: 83) describe surrogate terms as means of expressing the concept other than the word or expression selected by the researcher, meaning that the concept can be expressed in many ways. Collaboration is frequently equated with (1) an alliance, (2) association or (3) partnership, characterized by mutual goals and commitments (Henneman et al., *1995:105*). This section describes the surrogate terms for collaboration in implementing PBL.

- **Association:** *Collins Dictionary* (2009:39) defines an association as a group of people with a common interest. In this context, collaboration in implementation of PBL is viewed as a group of collaborative partners with a common interest.
- **Alliance**: This refers to an association of two or more people for a common goal (*Collins Dictionary*, 2009:888)

- **Partnership**: This is defined by *Collins Dictionary* (2009:575) as a relationship in which two or more people or organizations work together in business venture. Casey (2011:305) is of the opinion that successful partnerships are non-hierarchical and partner share decision making and common ownership of the resolution of challenges. There is agreement in literature that collaboration is a relationship that involves commitment to improvement of performance, efficiency and consideration of partners' rights in the context of major decisions (Casey 2011:305; and Harvath et al., 2007:20).

c. Identification of related concepts

Coordination, cooperation, teamwork, and collaboration: more often than not, these words are used interchangeably in the literature (Bedwell et al., 2012:135).

- **Teamwork**

Teamwork is described as cooperative work done by a team (*Collins Dictionary*, 2009:828). "Cooperative or coordinated effort on the part of a group of persons acting together as a team or in the interests of a common cause" (Dictionary.com, n.d.). Marks, Mathieu and Zaccaro (2001:358) are of the opinion that "teamwork processes describe interdependent team activities that orchestrate task work in employees' pursuit of goals. Teamwork is multidimensional and represents processes that involve two or more entities actively and reciprocally working towards achievement of a shared goal (Bedwell et al., 2012:135). It is therefore necessary for collaborators in implementing PBL in nursing education to have teamwork.

- **Coordination**

Collins Dictionary (2009) defines coordination as a process of bringing together and cause to work together efficiently. Bedwell et al., (2012:135) describe coordination as another concept frequently used to describe collaboration (often at the team level). This concept refers to the sequencing of interdependencies to most efficiently accomplish work tasks (Marks et al., 2001:363). Marks et al., (2001:363) describe coordination as a dynamic interaction to "orchestrate the sequence and timing of interdependent actions."

It is a process by which team resources, activities and responses are organized to ensure that tasks are integrated, synchronized and completed within established temporal constraints. Similar to collaboration, coordination can involve two or more social entities; however, it can also describe two or more resources that are non-social in nature. This means that collaborative partners need coordination in implementing PBL in nursing education.

- **Cooperation**

Cooperation is another concept used interchangeable with collaboration. It is defined as a process of working or acting together or willingly to assist. This concept is derived from Latin words, namely: *co* meaning *with*, and *operati,* meaning, *to work* (*Collins Dictionary*, 2009:168). Thus, cooperation means working together with others. Bedwell et al., (2012:135) view cooperation as wilful contribution of employee effort to the successful completion of interdependent organizational tasks". Bedwell et al., (2012:135) view cooperation as an attitudinal concept describing the extent to which entities are concerned about the overall goal rather than individual goal thus helps to facilitate the process of collaboration. In collaboration in implementing PBL in nursing education, cooperation is necessary for success.

d. Identification of references

The reference indicates the actual setting to which the concept collaboration is applied. Referents or context, are helpful to determine how the concept is used differently in different situations. References also aid in identifying the scope of the concept to enhance clarity and effective application thereof. Various collaboration models were explored in the literature including also collaboration process which was adapted according to the management principles of planning, organization implementation and control. Collaboration as a process requires a planning process whereby mission, goal and objectives of collaboration in implementing PBL are set jointly, strategies to achieve those goals are identified and key performance indicators are defined including, implementation of those strategies and evaluation of the effectiveness and performance of collaboration.

e. Identification of antecedents

Antecedents are situations that must occur prior to the occurrence of a concept. Rodgers and Knalf (2000:85) suggest that concepts have antecedents which are events or circumstances that happen or exist prior to the concept occurring. In literature review, more antecedents than attributes were offered for concept collaboration. It was also noted that several terms cited as antecedents for collaboration were noted as attributes by others. Below are antecedents that emerged from analysis of collaboration as a concept in implementing PBL.

- **Commitment and support**

The critical antecedent condition is recognition of the importance of individual and organizational commitment to ensure that collaboration is a success (McWirther et al., 2003:136; Lehna & Byrne, 1995:177; Patel et al., 2012:5; and Barnett et al., 2010:18). Elements necessary for collaboration to succeed are commitment of time, energy and resources. Leadership and commitment are basic to the success of any collaborative endeavour including the implementation of PBL in nursing education. Clear and unequivocal supports from institutional authorities and uniform alignment to achievement of a common goal are critical for success of collaboration in implementing PBL.

Two levels of support and commitment are discussed as important for collaboration to be successful: organizational or managerial commitment and support is recognized in the form of education, resources and rewards (Petri, 2010:78). In individual commitment and support, each individual must have the desire to participate or believe in the interdisciplinary collaboration (Petri, 2010:78). With commitment, support and encouragement from management levels of collaborating organization, success in collaboration is possible (Barnett et al., 2010:18).

- **Common goal**

A shared mission and common goal should guide the collaboration. Patel et al., (2012:15) state that a clear, common vision and objectives can provide a framework

within which collaboration strategies and goals determine the success of collaborative project. Good collaboration requires participants to have a clear understanding of tasks and collaboration goals and objectives. For collaboration in implementing PBL, a well-defined common goal will provide a common ground and understanding of tasks, roles and responsibilities of collaboration.

- **Formal agreement**

The other antecedent condition is a formal written agreement describing the type and level of collaboration and various roles as well as the responsibilities of collaborators (D'Armour et al., 2008:5;& Dorner, 2001:135). A memorandum of understanding should be in place stating type and level of collaboration; roles and responsibilities of each collaborator; time frame of collaboration as well as the process to be followed to achieve the goal. Collaboration is aided when individuals and organizations roles are coordinated. Individual and inter organizational collaboration require particular effort for participating members to have understanding of roles and responsibilities in the different organization (Patel et al., 2012:7). Therefore, a formal agreement is mandatory for a successful collaboration in implementing PBL in nursing education.

- **Active participation**

Active participation in decision making, design and implementation of collaborative venture is basic to collaboration in implementing PBL. The more people participate in these processes, the more likely each will feel ownership and therefore on-going commitment to the collaboration (Mfum-Mensah, 2011:415; & McWhirter et al., 2003:135). Willingness of partners to participate in formal, structured, joint working to the extent that they do not rely on reciprocation in order to ensure that each contribute to shared vision (Carnwell & Carson, nd:15;& Hendrix, Matters, West, Stewart, & McConnel, 2011:150).

- **Training and development**

Training and development is required for task completion, collaboration tools and collaboration itself (Patel et al., 2012:7). These authors are of the opinion that personal

training and development are associated with improved productivity and collaborator satisfaction. Training and development of collaborators for implementation of PBL provides opportunities for the team members to acquire new skills or improve the existing skills and develop shared mental models and this can improve institutional performance. It therefore appears that for the success of this collaboration, institutions should be aware of skills and behaviours required to perform particular collaborative tasks or functions and base.

- **Monitoring and evaluation**

Monitoring and evaluation of collaboration is required to assess the success and take corrective measures where flaws are identified. Evaluating collaboration effectiveness involves assessing how the partners work together to achieve outcomes and whether the collaborators are able to work together in future (Patel et al., 2012:15). For collaboration in implementing PBL, monitoring and evaluation involve assessing individuals as well as collective efforts, depending on the type of task and responsibility as both can have important influence of the overall performance of collaboration. Commitment to on-going evaluation of evidence-based performance improvement is a requirement for effective collaboration.

In summary, antecedents to collaboration can be classified under personnel and organizational or environmental factors. *Personnel factors* include the following:

1. Sufficient educational preparation;
2. maturity and experience to ensure readiness to engage in collaboration;
3. clear understanding and acceptance of their role and expertise;
4. confidence and ability to recognize disciplinary boundaries;
5. effective communication;
6. respect for and understanding of other's role;
7. sharing knowledge, values; responsibility, vision, and outcomes; and
8. Talent, tact and trust have been identified as essential ingredients for effective collaborative partnerships (Carnwell & Carson, nd: 15; & Hendrix et al., 2011:150).

Organizational/ environmental factors: Environmental factors include the elements that lie outside the collaborators. The first antecedent condition in this category is recognition of the importance of organizational commitment to ensure that the loss of individuals would not affect the viability of the partnership. Other factors include the following:

1. Shared mission and goal;
2. Equality or non-hierarchical relationships wherein collaborators can act autonomously;
3. Recognition of group rather than individual achievements;
4. Formalization of agreements; and
5. Allocation of time as a resource (Carnwell & Carson, nd:15; & Hendrix et al., 2011:150).

f. Identification of consequences

These are situations that must result from an occurrence of the concept. Collins Dictionary (2009:161) defines consequence as a logical result or effect of something. According to Walker and Avant (1995:55), consequences are defined as events occurring following a concept. Carnwell and Carson (nd:16) are of the opinion that consequences of collaboration can be explained in terms of benefits and barriers.

According to the authors, these benefits include:

1. More effective use of staff as they utilize their skills cooperatively rather than competitively (Henneman et al., 1995:105);
2. Demystifying of education with the bridging of gaps between fragmented services;
3. Cross pollination of ideas; and
4. Sharing of efforts (El Ansari, Phillips & Zwi, 2001:152).

Henneman et al., (1995:105); and Arnold et al., (2004: 62) further identified the following benefits of collaboration:

1. Creation of supportive and nurturing environment;

2. reinforces confidence, self-worth and importance;
3. promotes 'win-win' attitude and sense of success and accomplishment in collaborators;
4. inter-professional cohesiveness;
5. improved productivity and effective use of personnel;
6. increased employee satisfaction; and
7. Improved student's outcomes.

Carroll et al., (2010:518) identify the following reasons for positive outcomes due to collaboration:

- *First*, collaboration between individuals and organizations can enhance a transfer of knowledge and expertise.
- *Second*, it can increase efficiency as collaborators contribute individual but different expertise to collaboration.
- *Third*, it can function as a cross-fertilization of ideas, provide intellectual companionship, and extend one's individual network.
- *Fourth,* in collaborations one can also learn how to manage social and management skills in a team.
- Finally, collaboration allows partners to meet and share both setbacks and successes creating a positive energy that is important and useful in all research.

There are also barriers to closer collaboration and those included are:

- Increased requirements for time and communication;
- lack of clarity leadership, need to share resources and revenue; and
- the problems of partners who do not fulfil their commitments (Jenerette et al., 2008:18).

g. Identification of related concepts

Coordination, cooperation, teamwork, and collaboration: more often than not, these words are used interchangeably in the literature (Bedwell et al., 2012:135).

- **Teamwork**

Teamwork is described as cooperative work done by a team (*Collins Dictionary*, 2009:828). "Cooperative or coordinated effort on the part of a group of persons acting together as a team or in the interests of a common cause" (Dictionary.com, nd). Marks, Mathieu, & Zaccaro (2001: 358) are of the opinion that "teamwork processes describe interdependent team activities that orchestrate task work in employees' pursuit of goals. Teamwork is multidimensional and represents processes that involve two or more entities actively and reciprocally working towards achievement of a shared goal (Bedwell et al., 2012: 135). It is therefore necessary for collaborators in implementing PBL in nursing education to have teamwork.

- **Coordination**

Collins Dictionary (2009) defines coordination as a process of bringing together and cause to work together efficiently. Bedwell et al., (2012:135) describe coordination as another concept frequently used to describe collaboration (often at the team level). This concept refers to the sequencing of interdependencies to most efficiently accomplish work tasks (Marks et al., 2001:363). Marks et al., (2001:363) describe coordination as a dynamic interaction to "orchestrate the sequence and timing of interdependent actions." It is a process by which team resources, activities and responses are organized to ensure that tasks are integrated, synchronized and completed within established temporal constraints. Similar to collaboration, coordination can involve two or more social entities; however, it can also describe two or more resources that are non-social in nature. This means that collaborative partners need coordination in implementing PBL in nursing education.

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The review of literature to identify data relevant to the attributes of collaboration and its contextual features (antecedents, consequences, surrogate and related terms and referents) has been completed. The next step is to describe the analysis regarding characteristics of the concept.

6.1.3.3 Data Analysis Regarding Characteristics of the Concept "Collaboration"

Consistent with the evolutionary approach to Concept Analysis (Rodgers & Knalf, 2000:97), an inductive process was implemented to identify relevant aspects of collaboration. An inductive approach was used to analyse the empirical data from the opinions of nurses regarding collaboration in implementing PBL in nursing education (Rodgers & Knalf, 2000:97). In addition, the following reasoning strategies were used for concept analysis in this study: analysis, synthesis, deduction, inferences and derivation as suggested by Chinn and Kramer (2011:67).

In this study, essential attributes of collaboration were organized and reduced by developing categories and subcategories that would be used to define collaboration in implementing PBL in nursing education.

- **Reduction process of identified attributes**

The purpose of reducing the attributes to essential and related criteria is to ensure that all important criteria are included in the final definition of the concept collaboration. Essential criteria are the criteria that must be present in order for the concept to exist; related criteria explain these in more details. These criteria were then used as the basis for the model case and form the final conceptual definition. Table 6.1 depicts the essential attributes of collaboration reduced according to categories and sub categories.

Table 36.1: ***The essential attribute from empirical data and those emanating from literature***

Category	*Sub Category*	*Attributes*
Antecedents	Personnel	• Trust and respect; • mutual understanding; • tact and talent, knowledge; • skills and positive attitude; • personal commitment and cooperation; and • Willingness to work together towards agreed purpose.
	Organizational Environment	• Managerial commitment and support,; • shared governance and decision making, shared goal and objectives; • shared responsibility and accountability; • formal agreement contract; • clear roles and responsibilities; • equality or non- hierarchical relations; and • evaluation.
Process	Planning	• Need analysis; • shared planning and decision making; • training and development of collaborators; and • identification of resources needed for collaboration.
	Implementation	• Shared implementation and problem solving • flexibility and transcending of boundaries.
	Monitoring And Evaluation	• Standardized tools and procedures; • evaluation of collaboration effectiveness and performance; and • Feedback and remedial actions.
Results.	Partners	• Development and growth; • information and expertise sharing; • formal and informal learning; • increased collegiality; and • mentoring;
	Service Consumers	• Supportive and nurturing environment; • quality service; • professional socialization; and • improved student's outcomes;
	Organization	• Improved productivity and effective use of personnel; • increased employee satisfaction; and • inter-professional cohesiveness.

This concept analysis, collaboration process in implementing PBL is framed in terms The concept collaboration has been reduced to its essential attributes to ensure that all the important criteria are included in the final definition of the concept collaboration. A model case will now be described, before the final conceptual definition is given.

- **Collaboration Process**

From of antecedents - process – outcome model (Thomson & Perry, 2006:20), the antecedents constitute the input, the process component is the "doing" of collaboration, whilst outcome component entails the results and the consequences of collaboration (Jenerette et al., 2008:15 Thomson &and Perry, 2006:20).

6.3.1.4 Description of a Model Case

A model case containing the essential and related attributes of the concept will assist to illustrate an example of an ideal example of collaboration in implementing PBL in nursing education (Avant, 1993:55). The model cases were identified in the interviews and data were collected in order to understand the meaning of collaboration in implementing PBL in nursing education. The model case identified in this study is given below with criteria related concepts highlighted.

PARTICIPANT: *Oh ------ The collaboration is long overdue. Training of nursing students in any form* ***requires collaboration.*** *Even, in Tswana expression it is said "Ngwana ke sejo se a tlhakanelwa" which literally means "Bringing up a child is like food and requires collaborative efforts". Training of nursing students is like bringing up a child it actually requires collaborative efforts. Nursing education institutions, normally the college and the university* ***need to collaborate*** *with clinical* ***services*** *in implementation of problem based learning. Collaborative partnerships are in line with government policies which require inter-sectoral collaboration. If the clinical services are taken as partners in implementation of PBL, the students will benefit. I know, there is collaboration between the university, the college and the clinical services for education of students but this needs to be revitalized for the implementation of this much valued PBL.*

"Our current or present president is always saying on TV working together you get more. Even the former President was always saying eh---eh---- We must work together as a nation to build a better South Africa. From these two scenario or examples really show that we ***need to work with other people*** *to ensure that this problem based learning is a success."*

MMG: *: " I think firstly the **heads of institutions**, namely the CEO of the hospital, the district manager, the nursing college principal and the head of department of nursing should **agree to collaborate** and kind of formalize this agreement ----- silence ------- silence.*

*The nurse managers, especially at strategic positions should be **involved** from the planning phase of problem based learning curriculum. They should be part and parcel of planning, implementation and evaluation of problem based learning."*

TMM: *"I did talk about **collaboration strengthening theory and practice**. In other words, it will **assist in ensuring that students** are able to integrate theory into practice. I also think we as managers will be able to learn more about the subject. We will also learn more about new developments in health care service. I think if we collaborate, we will be able **to share information and expertise**. For example in Midwifery, there are new guidelines which are developed. With collaboration, we (the nurse managers) can be **able to share** with you. We also have different midwives with different expertise which will be able to **share such expertise** with you as nurse educators. The advanced midwives can collaborate **or work hand in hand** with nurse educators in designing case studies or scenario. They can also be of help in teaching critical midwifery skills and evaluation of students. Those advanced midwives can be also be invited to do presentation in class settings."*

PMG: *"My opinion is that with collaboration, **information will be shared**, even decision making. People will **decide together**, also eh.. eh... eh.... They will also copy something that is good from others. This is what I mean by **sharing information."***

SAL: *" For example, I think we need -----eh---- eh------ First people to use this PBL, We need to now and then go to those people. We must **establish a good relationship** with them. I mean we must go to them to learn and they must come to us and other **things like workshops, seminars and conferences** for us to **learn more about this PBL**-------to ensure that we are doing it correctly."*

LAS: *"Yes, with collaboration, we are actually going to **have quality in our service** of training future professional nurses. It is going to help our **students to solve problems** by the time they complete we will have sisters or professional nurse who know something about collaboration. This will help us to **improve the status of nursing** especially when the managers from the services and nurse educators work together. The patients will also benefit, especially if they are nursed by **people who know that roles**, who know how to solve problems, I think they will receive quality care . And eh---- eh----"* silence.

*"We are also going to be able to **assess ourselves** if we are doing things wrongly or rightly by collaborating with other people. Collaboration will help to examine ourselves and do introspection."*

PK: *"eh .. eh.. I assume that different departments or institutions will experience different problems or challenges in implementing PBL. So if we collaborate, we will*

share information *about challenges in implementing PBL, and we will be able to* ***find solutions together.***"

PMG: "*My opinion is that with collaboration, information will be shared, even decision making. People will decide together, also eh.. eh... eh.... They will also* ***copy something that is good from others****. This is what I mean by sharing information.*"

PMC: "*I have a different opinion not related to the challenges. I am looking at this collaboration as a process towards growth and development. Well, before collaboration, we were implementing PBL after having orientation by different people regarding PBL. Until we had this collaboration, which I look at it as a* ***process of development*** *where now it has brought more light into PBL..... This has given us an opportunity to explore more of PBL. Maybe in future we will follow this route of the researcher and* search more about certain aspects of PBL. This is how I see it."

With ***collaboration*** *in implementing PBL particularly* ***with Centres of Excellence*** *like University X, we are being mentored. Remember, we are new comers in PBL thus we benefit from this university which is regarded as a master in PBL. They* ***act as consultants to us*** *and we* ***learn a lot*** *and* ***grow.*** *Valuable information* is being shared and professional **development** is taking place."

PMTS: "*With me, I am not talking about solutions, but my opinion regarding collaboration in PBL. I think if students from only one subject within the university are using PBL and other teachers from other departments are using traditional methods, it becomes a problem. Collaboration in use* ***of PBL in all the subjects is needed****. Collaboration of teachers of all subjects in the nursing programme is a must, especially the non-nursing lecturers. Teachers within the* ***institution should collaborate*** *in teaching the students.*"

PJM: "*To add to what she has already said the staff will also know what is expected of them, if they visit those centres of excellence in problem based learning institutions that have. They would already have started to know how to implement it and how to run it.* ***Also mentoring*** *will be* ***offered*** *by these centres of excellence in problem based learning if we collaborate" ... silence ..*

PUR: "*I should think in this collaboration, the most important thing is changing the mind set of people. Changing mindsets to say we are here for a* ***common goal****. Maybe for* ***the betterment of our students****..... It is not that a person is looking for her own benefit, but we are trying to look at the interest of the students. Therefore we all have to bring our* ***expertise and knowledge together*** *towards helping the students.*"

PARTICIPANT: "*I think collaboration is* ***a must in training*** *students via problem based learning. Nurse educators and managers as well as professional clinical staff need to work together to produce a quality professional. In this collaboration, I expect involvement of collaborators from planning to evaluation of the PBL. Firstly, we*

*need to agree on the need to collaborate or partner. The **need** should be **clearly identified** by the collaborators or partners."*

*"The managers need to agree and be **committed** to the collaboration by signing MOU. I mean, there should be **memorandum of understanding** to ensure managerial willingness and commitment.*

PARTICIPANT: *I see collaboration as an **interactive process**, and **communication** is vital. As collaborators, let us communicate frequently and regularly. We need an open communication that is transparent. Communication can be through scheduled meetings, e-mails and faxes."*

*"The university must also ensure that all partners understand this PBL by **continuously training and developing** the collaborator on this strategy. I mean PBL. It is not everybody who understands it and we are not all educators in the services. But we have a lot of expertise regarding clinical nursing and we can contribute a lot to the education of students."*

PARTICIPANT: "As said earlier, we can **participate** in planning curriculum, developing *scenario and triggers, facilitating in class and clinical learning and evaluation of students during OSCE'S and other projects. As long as we have **trust and respect** of each other as collaborators, I think implementation of PBL can be a success."*

The model case illustrated the essential criteria of the concept of collaboration. The next step is to formulate a conceptual definition of the concept.

6.3.1.5 Theoretical Definition

Based on this analysis and clarification of the concept of collaboration as well as correlation of theoretical and empirical meanings of collaboration, the following definition is offered in the context of nursing education: collaboration in implementing PBL is a dynamic, interpersonal, interactive, developmental and beneficial process whereby individuals or institutions work jointly to achieve a shared goal through shared governance, decision making, and power for a specific period.

6.3.2 Classification of Concept

The successful goal attainment requires the implementation of the course of action. The next step of the model development to operationalize the defined concept is to translate the concept into actions specific to the study (Dickoff et al., 1968:422). The survey list or thinking map was used as a tool to assist the researcher to operationalize

the concept. This survey list consists of six aspects of activity, which are depicted in Table 6.2

Table 37.2: *Elements of Dickoff et al., Survey List*

Element	*Description of the Element according to Dickoff et al., (1968:422)*	*Element in the study*
Agents	Who performs the activity?	• Centres of Excellence or Champions in PBL
Recipient	Who is the recipient of the activity?	• Universality initiating PBL • Other universities offering PBL in the region • Colleges affiliated to PBL universities • Clinical Services • Students • Health Care Consumers
Context	In which context is the activity occurring?	• Higher Education Setting • Nursing Education • Clinical Health Services
Process	What procedure does the activity follow?	• Need Analysis • Planning and Design • Implementation • Monitoring and Evaluation
Dynamics	What are the energy sources or catalyst for the activity?	• Commitment • Communication • Collaboration • Respect and • Trust
Terminus	What is the end goal of the activity?	• Effective implementation of PBL

6.3.2.1 Context / Framework

The context is viewed as the framework and multipurpose environment in which collaboration in implementing PBL will take place. This enables the activity to be viewed in relation with other things. As the model will be operationalized within the context of higher education, nursing education and clinical settings, the realities of those environments must be taken into consideration by participants when collaboration is planned or designed.

The following section describes the context within which collaboration will take place, namely, higher education, nursing education and clinical contexts.

a) Higher Education Context

Higher education, as the context, is a dynamic, multipurpose environment wherein the educational programs and qualifications take place. The dynamism of higher education is influenced by transformational and legal changes in the country in general, and the education system in particular. Partners need to plan, implement and evaluate collaboration within the legal, moral and ethical and professional boundaries. Nursing education is regarded as belonging to this context and higher education is critical because it influences nursing education for pre-registration education and how nursing education as a post-registration program should be conducted. The following acts are very important in regulating higher education as a context in this study:

- **Higher Education Act, 1997 (Act 101 of 1997)**

This Act regulates Higher Education Qualification and programs by making provisions for quality assurance and promotion. This aspect of higher education is very important as its intention is to pursue excellence, and promote the full realization of the potential of every student and employee and appreciation of diversity (South Africa, 1997:1). Collaboration in implementing PBL also focuses on effective learning of students to reach their full potential through self-directed activities, and be able to function effectively with a team or group. Universities and Nursing Colleges form part of that Higher Education (HE) context and management of these organizations has to provide commitment and support for this collaboration.

- **National Qualification framework Act, 2008 (Act 67 of 2008)**

This Act has been developed to establish the South African Qualification Authority (SAQA) and to provide for Quality Councils which constitute higher Education and Training Quality Assurers (ETQA) (South Africa 2008:1).

SAQA has set standards of the educational outcomes in the country, and also designed Critical Cross Field Outcome (CCFO) that form a foundation for description of more specific outcomes in all the learning outcomes. These Critical Outcomes describe the qualities which the National Qualifications Framework (NQF) identifies for development in students within the education and training system, regardless of the specific area or content of learning; i.e., those outcomes that are deemed critical for the development of the capacity for life-long learning. These outcomes are intended to direct the thinking of policy makers, curriculum designers, and facilitators of learning as well as the learners themselves. Included are:

1. identifying and solving problems in which responses display that responsible decisions using critical and creative thinking have been made;
2. working effectively with others as a member of a team, group, organization, community;
3. organizing and managing oneself and one's activities responsibly and effectively;
4. collecting, analysing, organizing and critically evaluating information;
5. communicating effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation;
6. using science and technology effectively and critically, showing responsibility towards the environment and health of others; and
7. demonstrating an understanding of the world as a set of related systems by recognizing that problem-solving contexts do not exist in isolation.

- **The Higher Education Qualifications Framework**

The Higher Education Qualifications Framework has been designed to meet demanding challenges facing the higher education system in the 21st century. It guides higher education institutions in the development of programmes and qualifications that provide graduates with intellectual capabilities and skills that can both enrich society and empower themselves and enhance economic and social development.

The framework established common parameters and criteria for qualifications design and facilitates the comparability of qualifications across the system. Within such common parameters programme diversity and innovation are encouraged. Higher education institutions will *have* ample scope to design educational offerings to realise their different visions, missions and plans and to meet the varying needs of the clients and communities they serve.

b) Nursing Education Context

Nursing education context is another critical context which is dynamic and multipurpose environment wherein the collaboration in implementing PBL will occur. This context is where the theoretical and practical components of PBL curriculum are planned, implemented and evaluated. This context is influenced by legal, social economic and physical changes that are occurring in the country as well as disease patterns of the country. All this influence design, execution and reviews of nursing programmes as well as learning and teaching strategies. One critical act that influences this context is the Nursing Act no. of 2005 (Act no.33 of 2005).

- **Nursing Act 2005 (Act 33 of 2005)**

This act is a very important aspect of the nursing education context because it regulates the nursing profession, and provides for matters related to nursing education and practice as well as South African Nursing Council (South Africa, 2005:1). South African Nursing Council (SANC) is charged with accountability for setting standards of nursing care to the citizens of South Africa. SANC regulates nursing education and practice through its rules and regulations. It provides for quality promotion in all nursing education institutions, by prescribing program guidelines regarding theoretical and practical learning of pre-registration programs and also mandating professional nurses to be part of teaching and learning of students. In this way, it advocates for collaborative work between educational institutions and clinical services.

SANC is an accredited ETQA for nursing and its main responsibility is quality education and service delivery. The key responsibilities of SANC as an ETQA include the following:

1. Accreditation of nursing programmes and qualification;
2. Promotion of quality among the key role players in education including clinical facilities;
3. Registration and certification of students;
4. Maintenance of data base of students and providers;
5. Submission of reports to SAQA; and
6. Collaboration with Higher Education Quality Council (HEQC) in accrediting and evaluating professional and work based programmes (South Africa, 2005:12).

In collaboration in implementing PBL, partners need to take this environment into consideration in order to alter collaboration within legal, ethical and moral framework of the nursing education and profession.

c) Clinical Learning Context

Clinical setting as a context provides learning opportunities to PBL nursing students. It is an environment where in the theoretical components of PBL in nursing education are integrated into practice. It provides the nursing students with meaningful, authentic and human experiences. The clinical context provides an environment where in the collaboration in implementing PBL has to occur. Clinical context include National, Provincial, District health care facilities where PBL students are placed for clinical learning. Strategic leaders and managers from these facilities need to provide support and commitment for this collaboration to occur. The academic or higher education institutions train and educate students for provisions of the health care work-force. The National Health Department obligates the Provincial and District health care services to participate in the training of nursing students as future health care human resources through the National Health Act 2003 (Act 67 of 2003).

- **National Health Act 2003 (Act 67 of 2003)**

The Act make provisions for clinical services practitioners in intersectional and interdepartmental collaboration (SA, 2003:30) to participate and make provisions for human resource planning and training (SA, 2003:32). Strategic managers, leaders as well as professional staff need to provide commitment and support for collaboration to be successful.

- **The Nursing Strategy for South Africa 2008**

The strategy articulates how nursing education and training, practice, resources, social positioning, regulation and leadership are planned and linked together with prescripts of professionalism to support the nation's health system. The goal of the Nursing Strategy for South Africa is, therefore, to achieve and maintain an adequate supply of nursing professionals who are appropriately educated, distributed and deployed to meet the health needs of all South Africans (Department of Health, 2008:18).

The Nursing Strategy for South Africa is based upon the principles of the Human Resources for Health Planning Framework as mandated by the National Health Act 2003 (Act No. 67 of 2003). The following principles are central to this strategy:

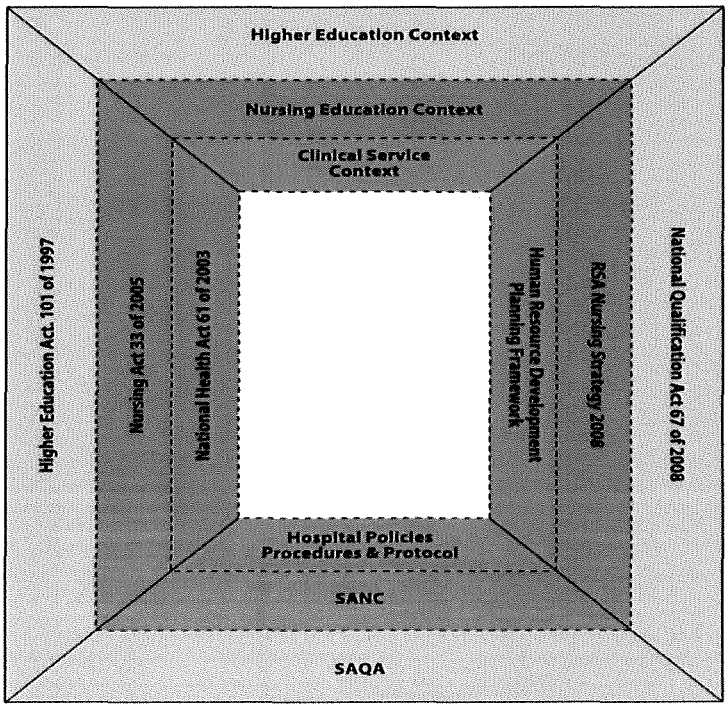
1. Good quality education and training;
2. provision of an enabling environment for nursing;
3. accessibility of nursing to all South Africans;
4. good leadership in all aspects of nursing;
5. better image and social positioning of nursing;
6. maintain a high standard and quality of nursing practice;
7. promote and maintain a high standard of nursing education;
8. enhance and maintain professionalism amongst members of the nursing profession; and
9. ensure that there is strong leadership that provides appropriate guidance and direction to nurses.

- **Hospital Policies, Protocol and Procedures**

The hospital and clinics with the policies, protocols and procedures play a crucial role in the provision of appropriate community driven clinical opportunities for the future health care human resource, namely, professional nurses. These policies guide the members of multidisciplinary team to plan, coordinate, support, supervise and evaluate services based on the national and provincial policies, protocols; norms and standards, Inter-sectoral collaboration and partnerships are also the norms if clinical education of PBL is to be successful. This is very vital because collaborators are to come from this context.

The realities of this context are that there is disjuncture in using PBL for nursing education especially between clinical and theoretical instruction. Collaboration among the key role players is not evident. For this collaboration, commitment, cooperation and collegiality need to be evident, thus collaborators from this context needs to be trained in PBL. They need to participate in PBL curriculum development, implementation and evaluation. Figure 6.1 depicts the context within which collaboration in implementing PBL occurs.

Figure 12.1: *Context of collaboration in implementing PBL*



Boundaries from the outside of the inside constitute higher education, nursing education and clinical services contexts, respectively.

The importance of these areas cannot be overemphasized. They are the most important aspects of nursing education that provides for teaching and learning of students to occur, and the integration of PBL theory into practice. Collaborative decision making and accountability form the context, as well as managerial support and commitment of time and resources for effective implementation of PBL.

6.3.2.2 Agents

Agent refers to someone who causes an effect. In this study, it refers to someone who will carry out the activity. The agents of collaboration in this study are strategic leaders from Centres of Excellence in PBL. Centres of Excellence have experience in PBL education, have researched and published on PBL. In other words, they have evidence based practices in PBL. They are champions in PBL and would mentor and develop the new comers to PBL by informing them and sharing ideas. They would share their experiences, successes and failures. It is therefore envisaged that the agents will be involved in developing and empowering the novices in PBL on PBL curriculum development, implementation and evaluation.

6.3.2.3 Recipients

People who are at the receiving end collaboration are novice institutions in PBL other Universities in the regions offering PBL, colleges affiliated to PBL universities, nurse educators, clinical services (nurse managers and preceptors) and the Colleges affiliated to a PBL University, the students as well as health care users or clients. In collaboration, educators, managers and preceptors benefit through the following:

- Development and capacity building on PBL and collaboration skills;
- Exchange of information, skills and talents;
- Mentoring from champions of PBL; and
- Contributing to the nursing education.

The students as principal recipient of collaboration in implementing PBL benefit from:

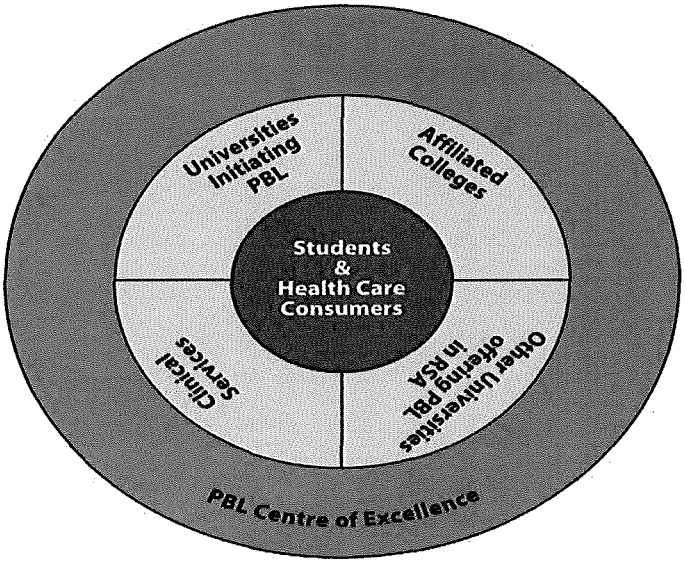
(1) Supportive and nurturing environment from diverse experts in academia and practice;

(2) Professional socialization on collaboration by learning through imitation; and

(3) Interdisciplinary education and sharing of knowledge, skills and expertise.

Collaboration will enhance quality education of students who will be competent to provide care. Health care consumers or clients will ultimately obtain quality care. The agent and recipients can be schematically represented as follows:

Figure 13.2: *Agent and Recipients*



All recipients of collaboration should have a common purpose and joint planning in implementing PBL for the students. They should participate in decision making and problem solving of student education. Share accountability and responsibility of collaborators. From the recipients intra-professional, inter-institutional and interdisciplinary collaboration is likely to occur. The interdisciplinary collaboration would be taking place with the Nursing Education institutions and clinical services.

6.3.2.4 Dynamics

Dynamics are the energy sources of the activity, namely, the sources that initiate and sustain collaboration in implementing PBL. They can be physical, psychological, chemical or biological sources affecting the agent, recipient or process of the realization of the goal (Dickoff, 1968:426). In this study, the dynamics of collaboration include commitment, communication, cooperation, respect and trust.

a. Commitment

This refers to dedication to a cause or principle. For collaboration in implementing PBL to succeed, commitment from individuals and organizational partners is critical leaders and managerial commitments are basic to collaborative endeavour. Elements necessary are commitment of time, energy and resources. To protect the collaboration in implementing PBL, you need buy-in from all that are involved with the process. In other words, if people in the institutions and clinical services take a negative view they could sabotage the process. Organizational and individual commitment in the collaboration in implementing PBL is vital; that is commitment at strategic and operational level of collaboration.

b. Communication

Communication in collaboration in implementing PBL underpins how people understand each other and how knowledge and information is transferred. In this collaboration, communication should be open and adequate to enable informal and formal exchange of tasks and contextual information to support collaboration. Overriding ingredient in collaboration in implementing PBL is communication, communication and communication among the partners or participants.

c. Trust

This refers to expecting and having confidence in the worth of somebody. Trust is a must in collaboration. Good collaborative efforts are characterized by mutual trust, and that should be established early in this collaboration. Trust and willingness to

communicate and share information openly would indicate individual and organizational readiness to collaborate in implementing PBL. Mutual trust in the relationships of collaborators should prevail for collaboration to success.

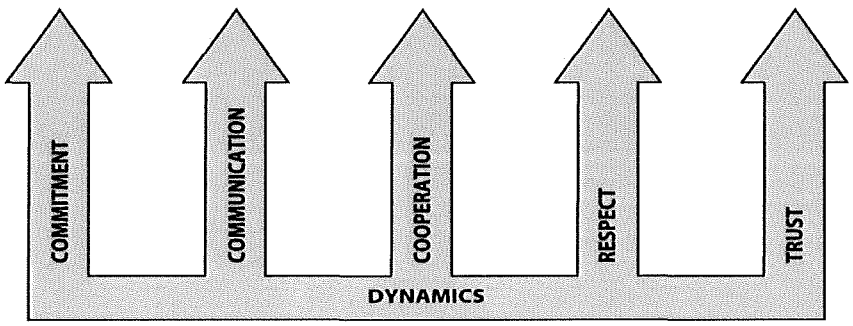
d. Cooperation

This refers to the process of working or acting together or willing to assist. Cooperation means working together with collaboration in implementing PBL. Cooperation requires wilful contribution of collaborator to the completion of interdependent organizational and team tasks. As Bedwell et al., (2012:135) view it; cooperation is an attitudinal concept describing the extent to which individuals, teams and organization are concerned with about overall goal/terminus and to facilitate the process of collaboration in implementing PBL in nursing education.

e. Respect

This is another dynamic that is crucial in the achievement of a beneficial collaboration in implementing PBL. There should be mutual respect among the collaborators for this collaborative endeavour to be successful. Mutual respect is a pre-requisite for effective collaboration in implementing PBL and includes collaborators tolerances for sharing power and willingness to adapt their operations and procedures to facilitate cooperation performance. Mutual respect rests on an explicit recognition of the indispensability of each collaborator and their contributions (Kinnaman & Bleich, 2004:311). In this study, the dynamics of collaboration are schematically represented as follows:

Figure 14.3: Dynamics of collaboration



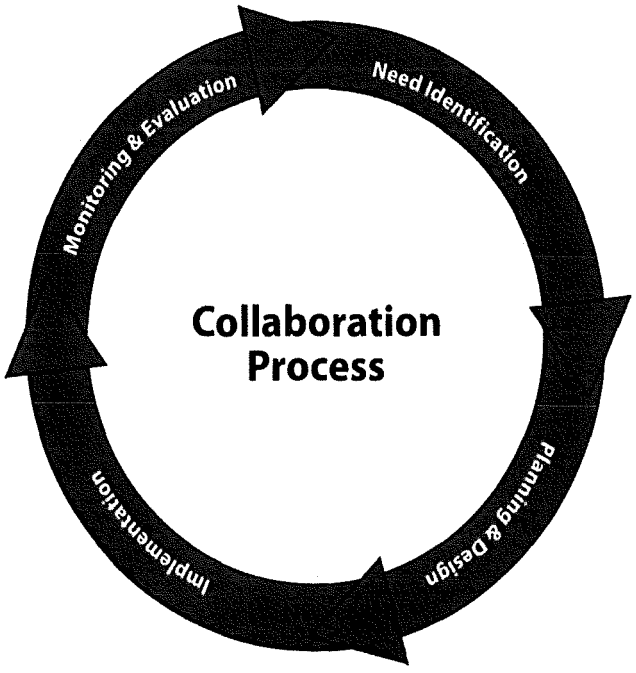
6.3.2.5 Procedure / Process

The procedure outlines the activities that should be performed in order to reach the terminus. The procedure of collaboration emphasizes the path steps and patterns according to which the activity is performed (Dickoff et al., 1968:426). The activities that are requisite for collaboration in implementing PBL include a:

- need analysis;
- joint planning and design;
- execution/ implementation; and
- monitoring and evaluation.

The process is hereby schematically presented as follows:

Figure 15.4: *Procedure*



In this model, a sequential process which is cyclical is proposed. This is a four-staged process which includes need identification, strategy planning and design, implementation and monitoring and evaluation.

The collaboration process develops in phases that each requires the presence of specific conditions to ensure success. At each phase, the collaboration procedure

evolves in such a way as to ensure a need analysis/ strategy design or planning/ implementation/ and evaluation process that takes into account the degree, nature and purpose of collaboration and the evolution of relationships among participants.

Step 1: Need identification

In this stage, the necessity for collaboration in implementing PBL is analysed. Need analysis and identification should commence with institutional internal and external analysis by doing strength, weaknesses, opportunities and threat analysis. This will result in need identification. A need ignites people to act. Thus, once the collaboration need is identified, individuals, teams and institutions will take action to collaborate. Once a decision to act is made, potential partners must be chosen, recruited, and brought to the table. Basically, anyone who has a stake or role in the call for action, or who can be part of the solution, is a potential partner. In this study, champions of PBL, universities offering PBL in the region and affiliated college, clinical services and students are the key role players in collaboration for implementing PBL.

Step 2: Planning and Design

This is direction setting for identifying who, why and how the collaboration is going to happen. Having a clear articulated strategy lays the foundation upon which successful collaboration is build. The strategy itself must be established at a high level within educational and clinical institutions. Discussing and sharing what is going on within an institution, setting out what the collaborators are trying to accomplish and how to go about achieving those aims will allow a thorough and true assessment of the prospects of a successful collaboration and how collaborators can work together to achieve synchronicity. In planning a shared vision is a must. A shared vision is a clear picture of what you hope to create; it is essential to sustain collaboration in implementing PBL (Patel et al 2012:1; and Jenerette, 2008:18). Shared decision making, problem solving and accountability are essential at this phase. The most notable attribute is sharing goal objectives, responsibility, decision making and power. The presence of shared goals, objectives or vision is necessary to ensure that collaborators are united and working towards a common outcome.

Stage 3: Implementation

In this phase, it is important to have the presence of a Centre of Excellence or "champion"; support and commitment of strategic leadership and management; implementation team or structure, its members, expertise, roles and powers and effective communication among participants or collaborative partners as well as training of collaborators on PBL and collaboration. During this phase, those agreements are implemented by allocating roles, responsibilities and resources. Sharing of power, resources and expertise are important in the quest for improving the collaboration in implementing in nursing education.

Stage 4: Monitoring and Evaluation

On-going evaluation tells the partners how well they and their collaborators are working and guides decisions on changes or modifications to the collaborative effort. Evaluation can be a relatively simple process, with collaborators measuring effort, effectiveness, and efficiency. Monitoring the effectiveness of collaborative initiatives is central to collaboration in implementing PBL. Internally, careful evaluation of the extent to which the collaboration is achieving desired outcomes will promote continuous learning and feedback. This, in turn, allows collaborators to adapt mission, goals, and actions to exploit emerging opportunities. Externally, effectiveness monitoring will provide supporting educational and clinical institutions with a measure of accountability for the technical, human, and national resources provided to the collaboration.

In monitoring collaboration, the following are critical and are based on the quantitative results:

1. That the collaboration should have appropriate procedures in place for monitoring its progress;
2. Clear criteria to judge the extent to which collaboration goals are achieved;
3. Clear criteria to judge the way in which the collaboration itself is working; and
4. Communication of collaboration achievements amongst the collaborator agencies and beyond.

6.3.2.6 Terminus

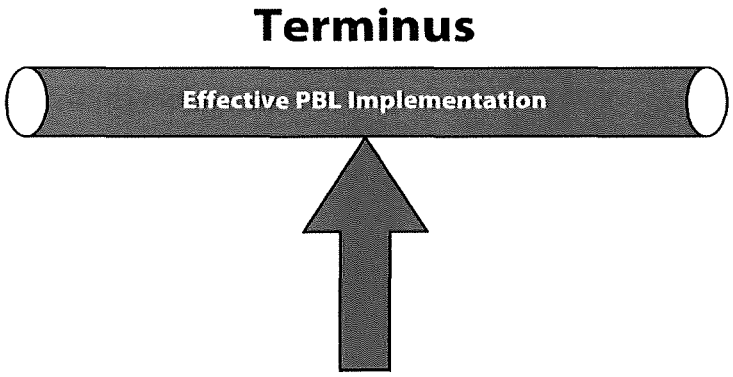
Terminus or end goal of collaboration is effective implementation of PBL within the nursing education. Though the principal aim of collaboration is effective implementation of PBL, but other positive outcomes of collaboration can be summarized in Table 6.3

Table 38.3: Other positive outcomes of collaboration

Outcomes	Beneficiaries
• Supportive and nurturing environment from experts • Professional socialization on collaboration • Good quality education and training • Improved student's outcomes	Students
• Inter-professional cohesiveness • Improved productivity and effective use of personnel • More effective use of staff as they utilize their skills cooperatively rather than competitively • Sharing of efforts	Institutions (Universities, Affiliated Colleges and Clinical Services)
• A transfer of knowledge and expertise • Cross-fertilization of ideas, provision of intellectual companionship, and extension one's individual network • Demystifying of education with the bridging of gaps between fragmented services	Personnel (Nurse educators, managers, preceptors and other members of interdisciplinary team)

The terminus of the activity is schematically presented as follows:

Figure 16.5: *Terminus*



6.4 Model Development

The model description is based on Chinn and Kramer's (2011:184-196) method consists of the following components: Overview of the model, the purpose of the model, the

structure consisting of assuptions on which the model is based, relation statements and the nature of the structure. Subsequently, the process of the model and evaluation are described, and guidelines for operationalization are provided.

6.4.1 Model Overview

A schematic representation in Figure 7.6 depicts a model of collaboration for effective implementation of PBL. The model is based on the premise that collaboration is necessary and beneficial to all stakeholders in implementing PBL in nursing education (made apparent from the research). The data collected from the sequential exploratory mixed method study indicate that nurse educators in PBL universities, nurse managers and preceptors from clinical settings where PBL students are placed indicates the need and benefits for collaboration in implemetning PBL in nursing education.

Addition to this is the fact that there is a great pressure of Nursing Education Institutions (NEIs) by authorities to produce nurse graduate that are competent to:

- Function effectively within a multidisciplinary team, organization and community;
- solve problems appropriately using critical and lateral thinking;
- communicate effectively;
- collect, analyze and critically evaluate information; and
- explore educational and career opportunities and be lifelong learners.

PBL education institutions provide an environment for promoting achievement of these skills. To ensure that these skills do not remain visionary benchmarks, attempts should be made by educational institutions to operationalize them by embedding the outcomes in curricular activities. Thus, the model of collaboration for effective implemetation of PBL is deemed necessary.

The model propose the collaborative activities that occur through four sequential stages, namely; need analysis, planning and design; monitoring and evaluation. This four processes feed on each other and overlap. During the course of the processes, the collaborators will learn how to fuction more adequately on behavioural, cognitive and affective levels of collaboration.

6.4.2 Purpose of the model

The best way to describe the purpose of the model is to consider who will implement it, under which conditions, situations and circumstances (Chinn & Kramer, 2011:185). This proposed model will be used as a frame of reference to facilitate the design of collaboration intevention to benefit the participants to effectively implement PBL in nursing education. The guidelines for operationalisatin of the model will reflect this purpose.

6.4.3 The structure of the model

The structure of the model gives overall form of the conceptual relationships within it (Chinn & Kramer, 2011:191). The structural form of a model aids in understanding the central relationships between concepts, their order of occurrence and how they interact. This model was based on the following elements: assumptions, concept definition, relation statements, and the nature of the structure.

- Assumptions of the model

Assumptions are the accepted truths on which the model is based (Chinn & Kramer, 2011:185). They are closely related to relationship statements, but also reflect the values underlying the model, for this reason, it is important to make them explicit, so that they can be understood on their own terms, from the perspective of the model that the researcher intended. It will also enable critique of the model by those who hold different views. The assumptions underlying the main concept (Collaboration) and other concepts used in the model are explained hereunder:

- ✓ Collaborators in PBL implementation bring different skills, knowledge and talents.
- ✓ Participants in collaboration are driven by same goal, vision and mission, and this need to be carefully crafted to align the activities.
- ✓ Organizational climate and culture of the PBL institutions can influence the collaboration activities.
- ✓ Collaboration in implementing PBL is dynamic and brings up changes in the collaborative partners and their clientele, namely students and health care consumers.

- **Concept definition**

The identification and definition of the key related concept are here given to clarify the structure of the model. The concepts were identified through the process of concept analysis, opinions of the participants and were classified and clarified through six elements of Dickoff et al., (1968:435). These concepts include the following:

- ✓ Higher education, nursing education and clinical context (***context/framework***);
- ✓ centres of Excellence in PBL (***agent***);
- ✓ universities initiating PBL, other universities offering PBL in the region, affiliated colleges, clinical services, students and health care users/consumers (***recipients***);
- ✓ collaboration process which is dynamic, transformational and beneficial consisting of need analysis, joint planning and design, execution/implementation and monitoring and evaluation (***procedure***);
- ✓ the outcome of collaboration which was effecting implementation of PBL (***terminus***) and;
- ✓ dynamics or underlying powers of collaboration include commitment, communication, cooperation, respect and trust ***(dynamics***).

Context: **The higher education** is the environment that is dynamic and multidimensional in which nursing education is located and regulated. Norms and standards in this context influence nursing education. This context is made up of the following different discipline groups:

Nursing education is the context wherein PBL education occurs. This context consist regulatory body of SANC and legal framework which ensures the highest standards of nursing education and service delivery. Nursing education institutions such as PBL Universities and affiliated colleges are within this context. The Universities affiliated with specific colleges are charged with the responsibility to maintain nursing education standards as stipulated by SANC. Therefore, in collaboration in implementing PBL, creation of an environment conducive to effective implementation is to occur within the boundaries of Universities and the SANC guidelines and regulations.

Clinical Health Care: As a context, clinical health care context is a dynamic multipurpose environment which provides opportunities for PBL students to integrate theoretical components into practices. It provides PBL students with meaningful and authentic learning opportunities and experiences. In this context, multidisciplinary team members participate in education and training of PBL students in collaboration and this is to be created within the legal, moral, ethical and professional boundaries of health care services.

Agents: Agents are collaborators who are expected to lead the collaboration through mentoring, development and capacity building in PBL activities. In this context, the agents are Centres of Excellence in PBL who have advanced knowledge, skills and expertise in PBL and collaboration.

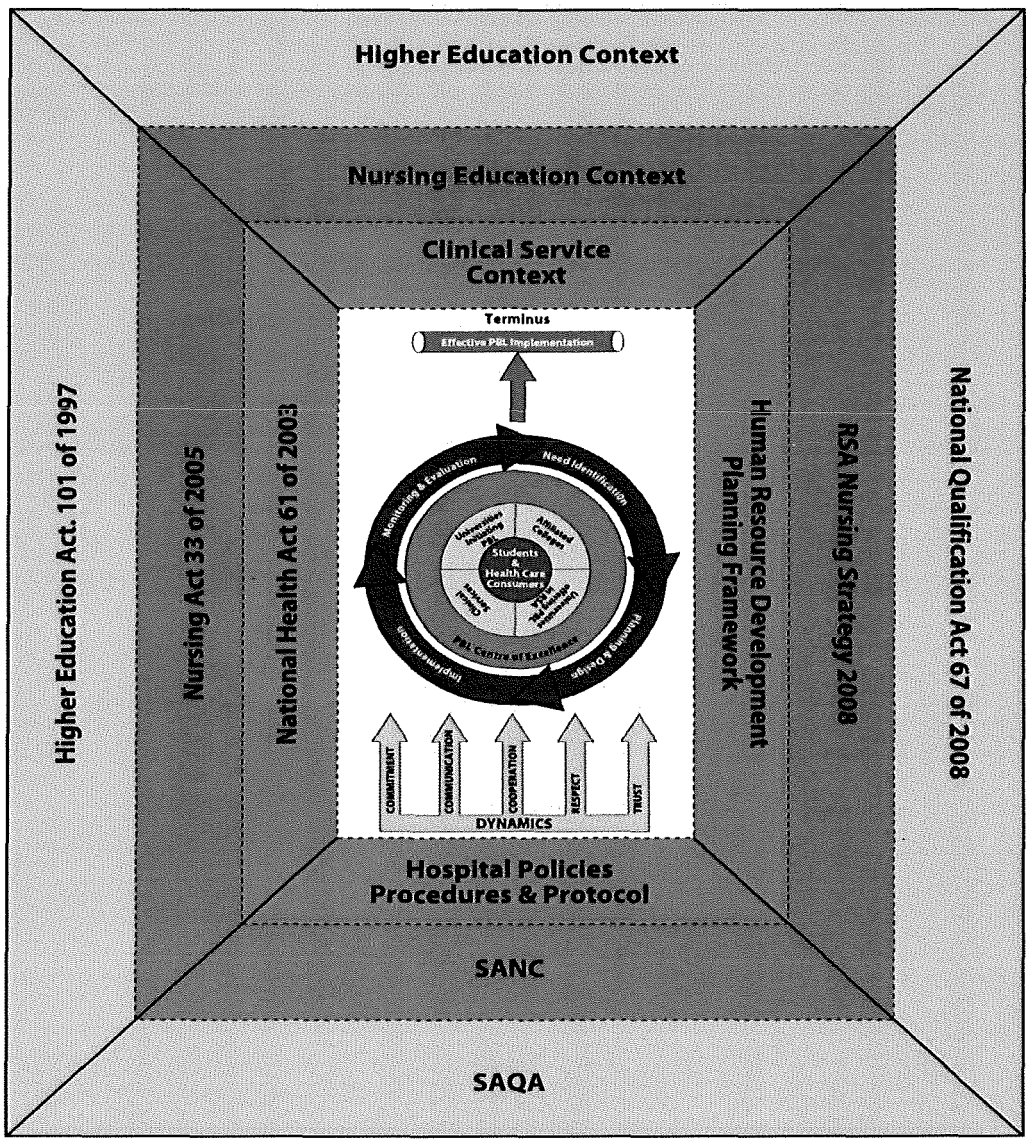
Recipients: These are the following groupings that are to be monitored, developed and empowered on PBL, namely, universities that are novices in PBL and affiliated colleges, other Universities offering PBL, clinical services, students and health care users. Within the University where PBL education is initiated, it is where intra-professional, inter-professional and inter-institutional collaboration occur.

Dynamics: Dynamics are the underlying powers and sources that initiate and maintain collaboration in implementing PBL, and include commitment, communication, cooperation, respect and trust.

Process: It is a dynamic, cyclical, interactive and beneficial process consisting of need analysis, planning and design, implementation and monitoring and evaluation.

Effective implementation of PBL: This is the ultimate outcome or end point of collaboration to facilitate effective PBL implementation which will benefit the nursing students and ultimately nursing education in nursing education. Figure 6.6 shows the schematic representation of the model.

Figure 17.6: *Schematic Representations of a model of Collaboration in implementation of PBL in nursing education*



6.4.4 Relationship Statements

Relationships are linkages among and between the concepts (Chinn & Kramer 2011: 190). Relationships between concepts form the "skeleton of the theory" and "show how concepts hang together" (Walter and Avant 1995:82). The relationships can be associational or casual and must be identified in order to organize the concepts into the model system. The relationship statements formulated for this model of collaboration in implementing PBL are given below:

- Collaboration in implementing PBL is influenced by the context wherein PBL in education is occurring, namely higher education, nursing education and clinical health care context. These boundaries represented these contexts.
- Successful collaboration in implementing PBL is dependent on dynamics such as commitment (Managerial, organizational and individual); communication (formal and informal); cooperation; respect and trust both at organizational and individual levels.
- Collaboration is an interactive, dynamic and beneficial process occurring in phases.
- This dynamic process of collaboration leads to effective PBL implementation.
- Students and health care users or consumers are at the core of this collaboration in implementing PBL as they are the ultimate recipients of PBL in nursing education. Having identified the benefits of PBL, the students and health care service consumers are also the ultimate beneficiaries of collaboration in implementing PBL in nursing education.
- Collaboration has a lot of spin-off benefits for the participating institutions and individuals.

6.4.5 Nature of the structure

The model for collaboration in implementation of PBL has six main elements, namely. the Higher education; nursing education and clinical services (Context), institutions initiating PBL, clinic services, colleges affiliated to Universities, students and health care users (recipients), Centre's of Excellence in PBL (Agents), effective implementation of PBL (terminus) collaboration (process), commitment, communication, cooperation, trust and respect (dynamics).

The symbolic meanings of the schematic presentation are as follows:-

1. The frames around the model represent the context in which collaboration will be taking place, namely, higher education, nursing education and clinical context.

2. The figure in the centre represents all what occurs in collaboration in implementing PBL.

3. The circle represents the agents and recipients of the activity (collaboration).The outer circle represent the agents, the middle and inner circle represent the recipients. The outer circular arrows represent the procedure or the process of collaboration which are cyclical and imply that if the objectives of collaboration are not achieved, the process should be repeated, starting with analysis.

4. The arrow from the process to the terminus indicates the direction of the process to the goal or end point.

5. The pointed arrows at the bottom indicate the dynamics that maintain or sustain the activity, namely commitment, communication, collegiality, trust and respect. These are critical forces that influence the process, agents and recipients, and goal or outcome of the process.

6.5 Evaluation of the model

The model was not evaluated in this project and will be done as post doctoral study. The critical reflection of this model was done according to Chinn and Kramer (2011:196-205) to help to clarify how well it relates to theory, research or practice. These authors suggest ingredients for evaluation purposes are: clarity, simplicity, generality, and accessibility and importance (Chinn & Kramer 2011:205).

The above five critical components that the researcher used to evaluate the model are discussed below:

6.5.1 Clarity

Clarity is concerned with both semantic and structural aspects of the model (Chinn & Kramer 2011: 205). Semantic clarity and consistency were attained by using the same concept definitions in same order throughout the model description. Clarity of the model was attained through concept analysis and empiric data from the participants' opinions. Attributes and connotation of collaboration were identified through Rodgers and Knaff Evolutionary Review (2000:85) and literature search.

Structural clarity was achieved through Dickoff et al (1968:426) survey list and the six elements were used as the basis for describing the model.

6.5.2 Simplicity

Simplicity refers to the complexity of structural components and the relationships between categories (Chinn & Kramer 2011:205). The structure of the model is not too complex, in that it is easy to ascertain the relationships between the concepts and the intended outcomes of the model are also clearly indicated. The relationships between the concepts are clearly explained and straight forward.

6.5.3 Generality

Generality refers to the scope in which the model can be applied (Chinn &Kramer 2011:205). The model was designed for the establishment of collaboration in implementing PBL for nursing education in nursing education institutions. However, it can also be applied for the development of collaborative initiatives in nursing education and practice.

The model can be used in any educational situation where there is a need for collaboration with adaptation.

6.5.4 Accessibility

Chinn and Kramer (2011:203) describe accessibility as how easily the entire indicators for the concept are identified and how the intended outcomes of the model are. The model will be made available to nursing education institutions initiating and offering PBL

and clinical settings where data was collected through workshops and research conducted by the researcher.

The model will also be made accessible through publication in accredited journals and through presentation at seminars and workshops.

6.5.5 Importance

According to Chinn and Kramer (2011:205) the importance of the model refers to the extent to which the model leads to valued nursing goals of practice, research and education. The importance of the model in nursing education relates to its practical value in the teaching arena. This model is deemed to be useful, since it aims to address current shortages of skills, expertise and talents in PBL. The model will also promote effective utilization of resources, namely, sharing of decision making processes, problem solving and accountability in nursing education or student issues.

6.6 Summary

In this chapter Rodgers' evolutionary view of concept analysis was used to clarify the critical attributes of collaboration, identify elements needed to be present for the concept to occur, distinguish the concept from a multitude of related terms, and assist in the development of a comprehensive definition to facilitate the application of the concept in practice. The concept "collaboration" was defined using both theoretical and empirical data. Dictionary and subject definitions of the concept were given. Themes that emerged from analysis gave clarity on characteristics of an effective collaboration and factors necessary for a successful collaboration in implementing PBL. The theoretical definition of the concept collaboration emanated from the identified attributes.

The concept was also classified into six elements of Dickoff et al. The model of collaboration in implementing PBL in nursing education was displayed in a diagram and described following a logical format of overview, purpose, context, assumptions, concept definition, relationship statement, structural description and evaluation.

The assessment criteria set out by Chinn and Kramer (2011: was used to evaluate the model. In the next chapter, the guidelines to operationalize the model, evaluation of its

applicability will be described. The limitations, justification, recommendation and conclusion of the study will be discussed.

CHAPTER 7

GUIDELINES TO OPERATIONALIZE THE MODEL

7.1 Introduction

The previous chapter discussed in details the model developed for collaboration in implementing PBL in nursing education. This chapter will focus on the guidelines to operationalize the model.

7.2 Guidelines

Model development is followed by its application. The application of the model entails a description of the guidelines on how the model is to be operationalized. The guidelines are described according to the elements of the practice theory, namely, guidelines pertaining to the context, followed by agents and recipients, the purpose and the dynamics, and guidelines pertaining to the procedure as described in Chapter 6.

7.2.1 Guidelines for Higher Education Context

The aspects deducted from the national legislation that will form guidelines to assist and direct the collaboration in implementing PBL. These guidelines were also derived from the data analysis and concept analysis where collaboration is to take place in nursing education. The context where collaboration in implementing PBL include higher education setting, nursing education and clinical health care context.

The higher educational framework provides the legal and professional structures for education of competent graduates to address the health care needs of population of South Africa. The aspects deducted from the national legislation that guide key role-players in collaboration include:-

- All education and training programmes should focus on competencies such as appropriate problem solving using critical and lateral decision making, working effectively within a team, group and community. SAQA's CCFO's should guide collaborators to develop education programs & teaching learning strategies.

- The education and training programs should provide opportunities in accordance with the national norms and standards.

- Provision of resources for all aspects of education and training, namely, finances, human, time and facilities.

- Regulatory structures, such as HEQF, SAQA should establish structural process and outcome standards, and advise the ministries of Health and Education on development of nursing education programmes.

- Nurse educators should be charged with the responsibility of creating learning teaching environments and opportunities that are coordinated, integrated and reflecting intersectional collaboration.

7.2.2 Guidelines on Nursing Education Context

Nursing education is where the PBL theoretical and clinical education is planned, implemented and evaluated. Guidelines are as follows:-

- Collaborators in PBL must ensure that the professional, ethical and moral standards and regulations of SANC and university statutes are taken into account; and

- Universities form part of that Higher Education (HE) context and management of these organizations has to provide commitment and support for this collaboration.

7.2.3 Guidelines on Clinical Health Care Settings

Clinical health care setting is where PBL theory is integrated into practices at various health care settings in accordance with different modules that constitute the whole PBL programme. Guidelines are as follows:-

- The strategic management and leadership should be committed to the collaboration by offering support and commitment of time, energy and resources. Leadership and commitment are basic to success of collaboration.

- SANC as a legal and regulatory body must ensure highest standards of accredited services for clinical learning.
- The universities and affiliated colleges should create an environment conducive to effective collaboration to occur within the boundaries of university statutes and SANC regulations.
- The National Nursing Strategy which is renewed on five years basis should focus on producing competent graduates and diplomats who are critical thinkers, and effective decision makers.
- SANC should obligate the professional nurses to be involved and collaborate in education of nursing students especially in clinical services.
- Good interpersonal relationships and communication skills should be maintained between academic institutions and clinical health services to promote participation in the collaboration.
- Health care authorities should provide authentic learning opportunities for PBL nursing students through its policies, procedure and protocols.
- The policies and procedures must guide the multidisciplinary teams in teaching and learning of future health professionals within the norms and standards of Human Resource Planning and Development.
- Nurses in the health care settings must be trained on PBL and collaboration skills.
- Clinical staff must participate in PBL curriculum planning, implementation and evaluation.
- Roles, responsibilities and tasks of clinical individuals, teams and institutions should be clearly detailed in the MOU of collaboration to ensure shared accountability and ownership.

- Guidelines and procedures should indicate how to establish MOU for collaboration.

7.2.4 Guidelines Regarding Agents and Recipients

The agents

The agents are Centre's of excellence or champions in PBL. Guidelines with regard to agents require that:-

- Centre of excellence should have best-practices in PBL evidenced by research and publications in PBL;
- These champions must be prepared to share their knowledge, skills and talents with individuals and teams from the PBL institutions who are still at developmental stage (Hendrix et al 2011:150);
- Agents should be able to mentor the collaborating institution in accordance with mentoring principles;
- Collaboration and partnership be defined; and
- MOU to be signed defining each others' roles and responsibilities.

The guiding characteristics of the mentoring institution or Centres of Excellence include the following:

- Sufficient educational preparation;
- commitment and cooperation;
- team building and communication skills;
- integrity and honesty;
- mutual respect and understanding;
- cultural sensitivity and flexibility;
- talent, fact and trust; and
- non-hierarchical or equality in relations.

The recipients

The developing nursing education institution in PBL as a recipient, and other recipients such as other institutions offering PBL, clinical services and affiliated colleges require:-

- establishment of teams that will take responsibility of collaboration in implementing PBL;
- orientation and development of tams on PBL and collaboration;
- developmental empowerment on PBL and collaboration skills;
- maturing and experience to ensure readiness to engage in collaboration;
- clear understanding and acceptance of their roles and expertise;
- effective communication;
- respect for and understanding of others role;
- sharing knowledge, values, responsibility, vision and outcomes;
- formalization of agreement documents through MOU; and
- allocation of time as a resource;

Students as recipients of collaboration need to change to:

- Individually and collectively assume responsibility of own learning;
- act as information seekers;
- participate actively in collaborative learning process;
- engage in a self directed search of knowledge;
- share knowledge effectively so that the whole group hears information;
- reflect on what has been learnt and the process of learning (Price 2003:34 & Wolcott 2000:312); and
- as a group prioritizes the learning needs, set learning goals and objectives, allocate resources and members identity which task they will do.

In addition students in PBL, need to be:

1. Oriented and inducted on PBL process; and
2. Trained and developed on team-building, conflict resolutions, group dynamics, peer and self-assessments.

7.2.5 Guidelines regarding dynamics of collaboration

The dynamics that initiate and sustain collaboration are commitment, communication cooperation, respect and trust. The dynamics can either influence collaboration positively or negatively. The following are the guidelines for the dynamics of collaboration in implementing PBL.

Commitment

- Commitment and support both from organization and individual level is very critical for the success of the collaboration.
- Commitment of time, energy and resources, as well as clear and unequivocal support from institutional authorities are crucial.
- In individual commitment and support for each individual so that they must have the desire to participate in the collaboration in implementing PBL.

Communication

Communication in collaborative work underpins how people understand each other and how knowledge is transferred (Patel et al 2012:9).The following are guidelines for communication in this model:

- Collaborating individuals, teams and institutions should have standardized ways of communication.
- Communication should be open to enable formal and informal exchange of tasks and contextual information to support collaboration. For example, information calls, calls for help (Owen & Grealish 2006:16; Jenerette et al 2008:18).
- Communication should be frequent, balanced and multilevel, and this can be telephonic, printed information, electronic, and face-to-face (Meunie- FitzHugh & Piercy 2010: 295).
- Communication should be clear and characterized by true dialogue, active listening, awareness and appreciation of differences and ability to negotiate options (Lehna & Byrne, 1995:177; and Dorner et al., 2001:135).

- Communication in collaboration must be honest, respectful and purposeful.
- Formal communication through meetings and conferences promote and nurture collaboration in implementing PBL (Harvath et al., 2007:20).

Cooperation

Guidelines for cooperation include:

- Willingness to contribute maximally to the shared goal, namely collaboration for effective implementation of PBL.
- Promotion of a team oriented environment with collegial non-hierarchical relations.
- Shared decision making, problem solving and accountability regarding PBL student issues, especially in clinical settings.

Respect

- Respect should be mutual and be displayed in all types of communication during collaboration (Mfum-Mensah, 2011:465-571; Kinnman & Bleich, 2005: 310-315; and Sullivan et al., 2001:139-150).
- Mutual respect rests on an explicit recognition of the indispensability of each collaborator and its contribution.
- Respect for each other's knowledge, skills and expertise should be evident at all times (Hendrix et al., 2011:150).

Trust

Good collaborative efforts are characterized by mutual trust. The following are guidelines for trust in collaboration in implementing PBL:

- Mutual trust should be established early in the collaboration especially in the planning or initiation phase of collaboration by being honest and open to each other as collaborating individuals, teams and institutions (Carnwell & Carson, nd:11; and Henneman et al., 1995:105).

- A climate of trust should be established early and be mutual to enable collaborators to engage with each other.
- Trust should include integrity, honesty and reliability and based on respect.
- All negotiations and agreements should be made in good faith implying full disclosure of collaborators specific objective.

7.2.6 Guidelines on process of collaboration

The process of collaboration needs to be purposeful and objective, interactive, beneficial and time-framed. The following are guidelines on the process of collaboration.

Need identification

- The process should commence with planning by identifying the need, purpose and objectives of collaboration, strategies to achieve those objectives, and key collaborators as well as key performance indicators of collaboration.

Design and development

This is direction setting for identifying who, why and how the collaboration is going to happen.

- Having a clear articulated strategy lays the foundation upon which successful collaboration is build.
- The strategy itself must be established at a high level within educational and clinical institutions.
- Joint planning which is interactive is a must.
- Formalization of agreements documents with clear goals, roles, responsibilities and task should be in places.
- Communication processes and techniques need to be standardized during this stage.
- Development of collaborators on PBL.
- Collaboration skills to enhance performance are critical.

Implementation

- Implement agreed collaboration activities according to allocated roles, responsibilities and resources.
- Leadership and management authorities must be willing to participate in the roles and responsibilities.

Monitoring and evaluation (M&E)

On-going M&E inform collaborative partners on effectiveness and efficiency of the collaboration and guides decisions on changes or modifications to the collaboration. The following are guidelines for M&E of collaboration in implementing PBL:

- Monitoring and evaluation must be purposive, continual and be planned jointly.
- Appropriate procedures must be in place with clear assessment criteria.
- Communication of collaboration results to collaborative individuals, teams and institution is important.
- Remedial or corrective actions should be taken based on the outcome of M&E.
- Use of peer, self and consumer assessment is necessary for effective M&E.
- M&E should be done with the legal and ethical framework and integrity.

7.2.7 Guidelines related to the cyclical nature of the process

In this model, a sequential process, which is cyclical, is proposed. This is a four-staged process that includes need identification; strategy planning and design; implementation; and monitoring and evaluation. The guidelines include:

- Repetition of the process if the outcome is not satisfactory for initiation and strengthening of the existing collaboration.
- Data or information from each phase of collaboration should provide input for the next phase. Findings from M&E feedback into need analysis and identification. Hence, the collaboration process is a regularly repeated event or sequence of events **(cyclical)** that is continuously changing **(dynamic)** rather than staying the same **(static)**.

- At the end of the first cycle, collaboration may be terminated if shared goal is achieved, and may continue with reassessment or need review or the plan may be modified.

- Furthermore, collaboration is an active process involving interpersonal interactions and relationships that change over time (Bedwell et al., 2012:130; and Patel et al., 2012:5). It requires collaborators to communicate directly and consistently.

7.2.8 Guidelines related to purpose and outcome of the model

The purposes or outcome is to facilitate effective implementation of PBL in the nursing context to produce competent graduates who will be able to offer quality health care. In addition to effective implementation of PBL, the model of collaboration should be beneficial to collaborators. Guidelines of these aspects are outlined below:

- Effective implementation of PBL;
- the collaborators should actively participate in joint need identification planning, design and evaluation of PBL curriculum;
- participants should share decision making, problem-solving and accountability;
- strategic managers must commit resources, time & energy for the collaboration;
- all key role-players must be developed and empowered on PBL and collaboration skills;
- students obtain supportive and nurturing learning environment both in clinical and theoretical environment;
- interdisciplinary cohesiveness must be evident;
- visible knowledge, skill and talent transfer among the collaborators;
- students are competent to solve problems appropriately using critical thinking;
- work collaboratively within the MDT, groups and communities;
- collecting, analysing and organizing and critically evaluating information;
- communicating effectively using visual & language skills of oral and written persuasion; and
- exploring education and career opportunities becoming a lifelong leaner.

7.3 Summary

The chapter dealt with the guidelines to operationalize the model, and those were described in accordance with the elements of the practice model as described by (Dickoff et al., 1968:423). The elements of the practice model included: context, agents, recipients, process, dynamics and outcome or end point. The next chapter focuses on conclusions, limitations, justification and recommendations.

CHAPTER 8

EVALUATION OF THE MODEL, JUSTIFICATION, LIMITATIONS, CONCLUSIONS AND RECOMMENDATIONS

8.1 Introduction

In the previous chapter, the guidelines for operationalization of the model were provided. In this chapter, the entire study is reviewed so as to establish whether the objectives of the study have been met. The limitations and recommendation with reference to collaboration for effective implementation of PBL in nursing education, nursing practice and research is presented.

8.2 Evaluation and Conclusions

The evaluation of the study focused on the rationale of the study, the overall purpose and objectives, the justification of the original contribution to the body of knowledge of nursing, the limitation of the study and recommendations with reference to nursing education, practice and research.

8.2.1 Rationale of the study

Globally, leaders in the government, private sector, and education agree that the entire nursing educational system is in need of reform. The driving force behind this reform is the realization that successful employment and citizenship require different knowledge and skills than in the past (Duch, Allen & White, 1998:1). Thus, in addition to their traditional role as purveyors of discipline of a specific knowledge, nurse educators are being urged to adopt classroom methods that help students to develop the competencies identified as necessary for success including, the ability to:

- Critically think, analyse and solve complex real world problems;
- find, evaluate and use appropriate learning resources and evidence for best clinical practices;
- work cooperatively in teams and small groups;

- demonstrate effective verbal and written communication; and
- use content knowledge and intellectual skills to become life-long learners.

Problem based learning provides an environment for promoting these skills (Duch et al., 1998:I; Rideout 2001:125; and Rideout et al., 2001:14). Problem-based learning is an educational approach that organizes curriculum and instruction around carefully crafted "ill-structured" problems (Haith-Cooper, 2000:278). Students gather and apply knowledge from multiple disciplines in their quest for solutions. Guided by teachers acting as cognitive coaches, they develop critical thinking, problem solving, and collaborative skills as they identify problems, formulate hypotheses, conduct data searches, perform experiments, formulate solutions and determine the best "fit of solutions to the conditions of the problem" (Haith-Cooper, 2000:278). Problem-based learning enables students to embrace complexity, find relevance and joy in their learning, and enhance their capacity for creative and responsible real-world problem-solving (Haith-Cooper, 2000:269; and Delva et al., 2000:168).

This approach in contrast to a traditional teacher centred approach wherein the key facts and concepts are presented to the students with PBL the students engage in self-directed learning. Alessio (2004:26) identified the following key features:

1. Learning in context, where real life problems are presented;
2. Elaboration of knowledge through social interaction, where the students work together in small groups; and
3. Meta-cognitive reasoning and self-directed learning with independent thinking and long-life learning. In the process of solving problems, students develop knowledge of theory, practice and facts, concepts and appropriate inquiry strategies related to the initial problem.

Having adopted PBL, the Department of Nursing Sciences (DNS) at the Mafikeng campus of North-West University (NWU) require a paradigm shift in undergraduate education and emphasise that a collaborative effort is required for effective implementation of PBL. Thus, the need for development of a collaboration model for

effective implementation based on the opinions of nurse educators, nurse managers and preceptors is important.

The benefits of implementing PBL reinforce the importance of the DNS resolve of strengthening the North West University resources base by developing a collaborative model with other Institutions of Higher Learning. For example, collaboration with Nursing Education Department is seen as one of the critical mechanisms for effective implementation of PBL in nursing education. The needed collaboration is influenced by both changes occurring in the health care system and limited availability of resources, namely, financial and human.

Collaboration with key stakeholders, as well as Centres of Excellence in PBL and health care service providers, especially where students are placed for clinical learning, will enhance the mentoring and empowerment of the both the students and nurse educators as well as nurse managers and other preceptors in PBL. For this reason, development of a collaborative model for the implementation of PBL based on the nurse educators, nurse managers and preceptors' opinions regarding collaboration in PBL implementation is necessary. In a collaborative model, partners share knowledge, expertise and resources. Thus, nurse educators need not remain in isolation while learning to use PBL. Collaborative efforts and sharing of resources and success are mandatory in educating nurses for the 21st century (Medley & Horne, 2005:33).

8.2.2 The purpose of the study

The overall purpose of the study was to develop a model of collaboration in implementing PBL in nursing education. To attain this, an explorative sequential mixed method for theory generation was employed. A qualitative dominant mixed method was used for exploration and description of the opinions of nurse educators, nurse managers and preceptors. This was followed by supplementary quantitative survey to measure and describe the opinions of the participants. The opinions of the participants were explored, described and compared with relevant literature. This process formed the basis of identification and conceptualization of the concept.

Concept Analysis, following Rodgers and Knalf's (2000:80-99), evolutionary review steps was applied. Conceptualization within the elements of the practice theory of Dickoff et al., (1968:426) was used to form basis of the model. The model was described according to Chinn and Kramer (2011:91).

8.2.3 Objectives of the research study

In Chapter 1, the objectives were set and in this section, these objectives are evaluated separately as follow:

***Objective 1**: To explore and describe the opinions of the nurse educators nurse managers and preceptors regarding collaboration in implementing PBL in nursing education*

The first objective was met during phase one (1) of the study. The opinions of the nurse educators, nurse managers and preceptors were explored through semi-structured individuals interviews and focus group discussion. Open-ended questions related to the needs of collaboration, the key role players, the consequences or benefits and barriers of collaboration as well as factors contributing to successful collaboration were asked.

The opinions were analysed using themes, categories and sub-categories. central to the results from participants it was identified that collaboration was regarded by most participants as dynamic, interpersonal, interactive and developmental and beneficial process whereby individuals, teams and organizations worked jointly to achieve shared goals through shared governance, decision making and power for a separate goal. It was identified that for collaboration to succeed, communication, commitment and cooperation as well as trust and respect are critical. The results also indicated that lack of funding and poor human skills maybe an impendent to collaboration in implementing PBL.

Additionally, contractual agreement with detailed roles and responsibilities of key collaborators are essential for a successful collaboration. PBL knowledge and competence was also found to be limited and as a result, most participants voiced the need of training and development of all collaborators on PBL and Collaboration.

Objective 2: *Measurement and description of opinions of nurse educators', managers' and preceptors' opinions regarding collaboration*

This objective was met during the second stage of phase one through administration of a questionnaire developed from the results of the qualitative component and literature review. The results from this supplementary component of the sequential exploratory mixed methods were congruent with these from the core component. The results indicated the importance of Intra-professional, inter-professional and inter-institutional collaboration. The data from this process formed the basis for Concept Analysis and model development.

Objective 3: *Conceptualization*

This was the first step of phase 2 (two) of model development. The objective was met using adapted Rodgers and Knalf's (2000:83-99) evolutionary review approach, to explore and describe meaning of collaboration was identified as process of working together to achieve a shared goal and requires active participation of clinical services, nursing education institutions and multi-disciplinary, interdisciplinary and inter-institution collaborations are necessary for effective implementation of PBL. The following attributes were identified as critical in collaboration:

- Collaboration requires two or more individuals to be involved in joint ventures.
- Collaboration requires sharing of goals and objectives, responsibility, decision making and power, expertise and knowledge.
- Collaboration requires communication which is open, adequate and frequent to enable format and formal exchange of tasks and contextual information to support collaboration;
- Trust is a must in collaboration. Open, frequent, balanced, multilevel communication should be evident to reflect a close collaboration; and
- Mutual trust and respect that are established early in collaboration

The sample of data about collaboration was derived and selected from dictionaries, books and journals. A theoretical definition was derived from literature and the description was used to direct the model development.

Attributes of the concept were used to identify the occurrence. Other uses of the concept surrogate terms, antecedents and consequences of the concept were described as used to clarify the concept. Related concepts such as teamwork, cooperation and coordination were described.

Objective 4: *Model development and description*

The results obtained from objectives 1, 2, and 3 formed the basis for describing the collaboration model for effective implementation of PBL in nursing education. Conceptualization of the identified concept was made by using the elements of the practice theory as described by Dickoff et al., (1968:426), namely; context, agents, recipients, dynamics, process and purpose. Description of the model was in accordance with Chinn and Kramer (2011:195-196) in terms of:

- Purpose and context;
- underlying assumptions;
- related concept definitions;
- relationship statements; and
- structure and process of collaboration in implementing PBL in nursing education.

The model was evaluated by using the five criteria for model development of Chinn and Kramer (2011:205). The conclusions reached were that:

- The model is clear, simple, general and accessible and important to nursing education; and
- The aims and objectives of the study as described in Chapter 1 have been met. A sequential explorative mixed method has been conducted to explore, measure and describe the opinions of the nurse educators, managers and preceptors regarding collaboration in implementing PBL in nursing education.

The guidelines will assist nursing education institutions and departments in initiating and sustaining collaboration in implementing PBL. The collaborating partners, individuals, teams and institutions will be expected to benefit from the collaboration and be competent to provide quality health care services to individuals and communities. The students benefit from collaborative PBL programme to be competent in solving problem using critical thinking and decision making, working effectively within groups, teams and communities, able to practice independently and autonomously to improve clinical. Through this collaborative PBL programme, the students will develop lifelong learning

8.3 Justification of the Original Contribution of the Study to Body of Knowledge in Nursing Sciences

The study is an original contribution to the body of knowledge in general and to nursing education in particular for the following reasons:

The opinions of the nurse educators, nurse managers and preceptors were explored measured and described using sequential and explorative mixed methods. Data were analysed sequentially and controlled with relevant literature. The results were utilized to form the basis for the development of the concept "collaboration". The concept analysis of collaboration was done systematically based on Rodgers and Knalf (2000:83). The results demonstrated that collaboration in implementing PBL is a dynamic, interpersonal, interactive, developmental and beneficial process whereby individuals or organizations work jointly to achieve a shared goal through shared governance, decision making, and power for a specific period. The results also demonstrated that collaboration in implementing PBL requires managerial commitment and support (Mfum-Mensah, 2011:415; and McWhirter et al., 2005:135), common or shared goal, formal agreement (D'Armour et al., 2008:15; and Domer et al., 2001:135), active participation from all collaborators, training and development of collaborator on PBL (Patel et al., 2012:15) and collaboration, communication, mutual trust and respect (Hendrix et al., 2011:150). Collaboration is also perceived as beneficial to collaborative partners as it promote personal and professional development as well as sharing of efforts and

knowledge cross pollination of ideas (El Ansari & Phillips, 2002:152); more effective use of staff as they utilize their skills cooperatively rather than competitively (Henneman et al., 1995:105) and inter-professional cohesiveness. For students, collaboration increases students' satisfaction; improves students' outcomes and creation of supportive and nurturing learning environment (Arnold et al., 2004:62). Collaboration in implementing PBL collaboration between individuals and organizations can enhance a transfer of knowledge and expertise and it can increase efficiency as collaborators contribute individual but different expertise to the PBL programme reducing time required to complete PBL activities.

There are also barriers to closer collaboration and those included are: increased requirements for time and communication; lack of clarity leadership, need to share resources and revenue; the problems of partners who do not fulfil their commitments (Jenerette et al., 2008:18).

The results were presented in doctoral seminars and faculty research forums and refined from the constructive feedback. The results of concept analysis gave direction to development and description of the model of collaboration in implementing PBL in nursing education. Dickoff et al.'s (1968:426) Survey List was used as a framework for the model development whilst Chinn and Kramer's elements (2011:196-205) were used to describe and evaluate the model of collaboration in implementing PBL. The goal was to assist nursing education institution to effectively implement PBL. Model development on collaboration in implementing PBL was an attempt to operationalize the SAQA critical cross field outcomes and to assist nursing education institutions to move away from traditional teaching method to more interactive self-directed learning approach, namely PBL. Thus, the study complied with doctoral requirements and also contributed to the body of knowledge as model development is new. This model could be applied to any educational setting.

8.4 Limitations of the Study

A limitation of this study is the restriction of the study to nursing education of pre-registration programme, which implies limited generalizations. The sample of nurse

managers and preceptors was confined to the North-West Province hospitals and clinics where PBL students are placed for clinical learning as compared to nurse educators from three South African universities offering PBL. This was attributed to the fact that clinical services used by participating universities to place their PBL students were far apart and very costly to get the managers together in terms of finances and time. The empirical data from nurse managers and preceptors were from one province, and there the findings can only be transferable within the province. The model has not yet been tested.

8.5 Recommendations

These recommendations draw on the results of the study and focus on dissemination of the model of collaboration in implementing PBL in nursing education, nursing practice and further research.

Dissemination of the model of collaboration in implementing PBL in nursing education

The model has not been evaluated by experts. It is recommended that the model should be implemented and tested for generalizability. This step falls outside the scope of this study, but could be done as post-doctoral study project. The following are the possible methods of disseminating the model.

- Implementation of the model of collaboration at the university where the researcher works;
- publishing the articles from the study in relevant peer reviewed journals';
- presenting the model at national and international conferences;
- development of visual presentations for the conferences;
- participate in in-service training opportunities at health care services and tertiary nursing education to make the model known and implement it; and
- availing the model at North-West University electronic space to increase accessibility to a wider interest group doing internet search on the key words of the model.

This model was developed for PBL implementation in nursing education for the pre-registration programme and should ideally be implemented in nursing education institutions that are initiating collaboration in implementing PBL. The model could be used for other programmes, but requires situational analysis, the model can also be used in the Southern African Developing Countries (SADC) within their educational context and accredited clinical services.

8.5.1 Recommendations for Nursing Education

The model should be made available to the North-West University Senate and South African Nursing Council who regulate nursing education within the institution and nursing profession respectively. The designed PBL programme, particularly its delivery mode should be included in the university year book and SANC programme document. These recommendations are made in light of the revision of the new professional qualifications in nursing education.

Clinical nursing education is core to nursing profession, and therefore collaboration of academia and clinical services must be upheld in implementing PBL. The collaboration with clinical services must occur within the ethical and legal framework, and these obligate the collaborating individuals, teams and institutions to maintain quality. It is recommended that the collaborators heed the guidelines with reference to the context so that collaboration occurs within the ethical and legal framework.

8.5.2 Recommendations for Nursing Practice

Clinical practice provides realistic and humane opportunity for PBL students to integrate theory into practice. Clinical service personnel should work jointly in education and training the students from need identification to monitoring and evaluation of PBL programme. It is important that the accredited providers of practical component of PBL programme must be educated and trained on PBL and collaboration as well as what it entails since this has a significant implication for collaborative practice.

In-service training and development of professional staff in clinical practice on PBL and collaboration is critical for collaboration in implementing PBL is vital.

Curriculum workshops should be held with active participation of the clinical professional staff.

Effective collaboration with health care providers requires good relationships to be maintained between academia and health care facilities and formal agreements should be in place detailing the roles, responsibilities of the collaborators.

8.5.3 Recommendations for Research

Higher education, nursing education and clinical health care settings are very dynamic and are characterized by changes influenced by political, economic, cultural and social factors in South Africa and globally. As the components of the model will not change, the detailed description of the model will require revisions to embrace the significant changes.

Much has been documented on collaboration, but a great deal is not yet clearly understood and requires more research, such as:

- Piloting the model and evaluating it;
- collaboration in implementing PBL at different levels of operations;
- cultural influences on collaboration;
- criteria to assess effectiveness of collaboration;
- development of an evaluation instrument of the model;
- implementing the model and explore the experiences of participant within a specific period of time; and
- how to overcome the barriers of collaboration in implementing PBL.

8.6 Summary

This chapter served to demonstrate how the objectives of the study were met to arrive at the guidelines that will operationalize in nursing education and practice. The chapter also summarized the entire study, highlighted he limitations and recommendations were

made for dissemination of the results, nursing education, nursing practice and further research. The researcher attempted to provide a model of collaboration in implementing PBL in the nursing education. This collaboration will benefit the collaborative individuals, teams and institutions in their personal and professional development and empowerment; information sharing, mentoring and coaching. The students will benefit in a supportive nurturing learning environment and quality education whilst health care consumers will obtain quality care from competent graduate from PBL programme. The challenge is now the use of the model of collaboration in implementing PBL in nursing education by institutions initiating strengthening the PBL programme.

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APPENDICES
Appendix A: NWU Ethics Approval Letter

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
INSTITUTIONAL OFFICE

ETHICS APPROVAL OF PROJECT

This is to certify that the next project was approved by the NWU Ethics Committee:

Project title :

A Model of Collaboration to Facilitate Implementation of PBL within Nursing Education

StudentProjectleader: Prof.M Maselesele

Ethics number: NWU-00033-11-A9

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Expiry date: 2016/05/30

The Ethics Committee would like to remain at your service as scientist and researcher, and wishes you well with your project.

Please do not hesitate to contact the Ethics Committee for any further enquiries or requests for assistance.

The formal ethics approval certificate will follow shortly.

Yours sincerely

Appendix B: Permission Request Letter



NORTH-WEST UNIVERSITY ®
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
MAFIKENG CAMPUS

DEPARTMENT OF NURSING SCIENCES

Tel: +27 18 (018) 3892530

Fax: +27 18 (018) 3892052

E-mail: hunadi.rakhudu@nwu.ac.za

Internet: http://www.nwu.ac.za/

Research Coordinator.
School of Nursing Sciences.
Name of university

Mam/Sir,

Request for Permission to Collect Data from the Nursing professionals.

I hereby tender my request to conduct research study on "***Collaborative Model for Effective Implementation of Problem Based Learning in Pre Registration Nursing Education***". This research project is part of my studies for PhD in nursing education at North West University.

The goal of this theory generating, mixed method design is to nurse describe educators, nurse managers and preceptors' perceptions and opinions on collaboration for implementing PBL and to develop a collaborative model for effective implementation of PBL

For the purpose of this study, the participants from the ***nurse educators'*** group will be selected according to the following criteria: (1) Two years experience implementing PBL in teaching pre- registration nursing program, and (2) Nurse educator registered with South African Nursing Council

Inclusion criteria for ***nurse managers*** and ***preceptors*** entail the following: (1) Working in health care facilities where nursing students from the universities are placed for clinical learning, and (2) More than three year's clinical experience.

Please find enclosed **proposa**l for further information and **copy of consent** form.

Sincerely,
M A Rakhudu (PhD candidate).

Appendix C: Research Approval Letter from NW Provincial Health Department

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

2nd Floor Trade Building
Dr Albert Luthuli Drive
Mafikeng 2745
Private Bag X2068
MMABATHO 2735

POLICY, PLANNING, RESEARCH, MONITORING AND EVALUATION

To : Ms M.A Rakhudu
North West University

From : Policy, Planning, Research, Monitoring & Evaluation

Subject: Approval Letter on Collaborative model for Effective Implementation of Problem Based Learning in Pre registration Nursing Education.

Purpose

To inform your good selves that permission to undertake the above mentioned study has been granted by the North West Department of Health. The researcher is expected to issue this letter as prove that the Department has granted approval to the districts or health facilities that form part of the study.

Arrangements in advance with managers at district level or facilities shall be facilitated by the researcher and the department expects to receive the final research report upon completion.

Kindest regards

Director: Policy, Planning, Research, Monitoring & Evaluation
Mr B Redlinghys

22/07/2011
Date

DEPARTMENT OF HEALTH
PRIVATE BAG X2068
2011 -07- 26
SUPERINTENDENT GENERAL

Healthy Living for All

health
Department of
Health
North West Province
REPUBLIC OF SOUTH AFRICA

Deppe Street
Potchefstroom
Private Bag X 253
POTCHEFSTROOM

Tel: (018) 294 9100
Fax: (018) 294 6435

OFFICE OF THE SENIOR MANAGER MEDICAL SERVICES: WITRAND HOSPITAL

23/04/2012

ATTENTION: M A RAKHUDU

Mahlasela Annah Rakhudu
Lecturer of Nursing Sciences
Faculty of Agriculture, Science & Technology

Tel: 0183892530 / Fax: 0183892582/2052 / Email: Hunadi.Rakhudu@nwu.ac.za

APPROVAL RESEARCH REQUEST: EFFECTIVE IMPLEMENTATION OF PBL IN PRE-REGISTRATION NURSING EDUCATION

1. The above-mentioned research request refers

2. You are hereby informed that your request has been approved

3. As the research topic primarily involves the field of Nursing you are requested to contact the Nurse Manager Mrs A de Bruin to make arrangements to assist to take the process forward. Her contact details are 018 – 2949100 / aoosthuizen@nwpg.gov.za

Kind regards

DR T G K OOSTHUIZEN
SENIOR MANAGER: MEDICAL SERVICES: WITRAND HOSPITAL
CHAIRPERSON PSG WITRAND HOSPITAL

MRS N L MOCWALEDI-SENYANEk
CEO WITRAND HOSPITAL

Appendix D: UKZN Approval Letter

UNIVERSITY OF KWAZULU-NATAL
INYUVESI YAKWAZULU-NATALI

21st May 2012

Ms MA Rakhudu
c/o Department of Nursing Sciences
Faculty of Agriculture, Science and Technology
Mafikeng Campus
North West University

Dear Ms Rakhudu

Support in conducting research interviews in the Discipline of Nursing

With reference to your request, to the Dean/Head of School, regarding permission to conduct research by interviewing ***"the nurse educators on their views on collaboration on PBL,"*** kindly note that this request is hereby supported, and arrangements for the interviews may be carried out by yourself.

We wish you all the luck in the completion of your studies.

Thank you

Sincerely

Professor B P Ncama
Dean/HOS
School of Nursing
UKZN

School of Nursing and Public Health
Postal Address: University of KwaZulu-Natal, School of Nursing and Public Health, Howard Campus, Private Bag X 54001, Durban, 4000
Telephone: +27 (0) 31 2602499 Facsimile: +27 (0) 31 2601543 Website: www.ukzn.ac.za

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Appendix E: Information Sheet

INFORMATION SHEET

Title of Research: ***A model of collaboration for implementing Problem Based Learning (PBL) in Nursing Education.***

Investigator: ***Mahlasela Annah Rakhudu***

Before agreeing to participate in this research study, it is important that you read the following explanation of this study. This statement describes the purpose, procedures, benefits, risks, discomforts, and precautions of the program. Also described are your rights to withdraw from the study at any time. No guarantees or assurances can be made as to the results of the study.

Explanation of Procedures

You are being asked to participate in the research project to investigate the attitudes and perceptions of nurse educators, manager and preceptors regarding collaboration in implementing PBL. The approaches of the research include exploratory individual interviews, focus group discussion and use of questionnaire. A focus group is a small group of people (about 8) who meet together and provide answers plus opinions to some questions asked by a group leader. You will be asked some questions about your opinion or perception regarding collaboration in implementing PBL for pre-registration nursing programme. You will also complete a short survey that has 10 questions about yourself. The focus group will be audio-taped and/or video-taped, and transcribed. The focus group will last approximately 1-1 ½ hours.

Risks and Discomforts

You will not be at physical or psychological risk and should experience no discomfort resulting from the research procedures.

Benefits

There are no direct benefits by participating in this focus group. However, this research is expected to yield knowledge about collaboration in implementing PBL

Alternative Procedures

If a person chooses not to participate, an alternative procedure is not necessary.

Confidentiality

All information gathered from the study will remain confidential. Your identity as a participant will not be disclosed to any unauthorized persons; only the researchers and ***North West University Research Ethics Committee*** will have access to the research materials, which will be kept in a locked draw. Any references to your identity that would compromise your anonymity will be removed or disguised prior to the preparation of the research reports and publications. Audiotapes/videotapes will be will be destroyed or erased at the completion of the study. Your last name will not be used in the transcripts of the recording.

Withdrawal without Prejudice

Participation in this study is voluntary; refusal to participate will involve no penalty. Each participant is free to withdraw consent and discontinue participation in this project at any time without prejudice from this institution.

Costs and/or Payments to Subject for Participation in Research
There will be no costs for participating in the research. Also, participants will not be paid to participate in this research project

Questions
Any questions concerning the research project participants *can* ***call Prof U. Useh*** (Faculty advisors for this project) 018-3892540 and Prof***. M. Maselesele*** (supervisor of the project) at 018-3892051. My contact details are: **018-3892530 or 0822008004.** E-mail **address is Hunadi.rakhudu@nwu.ac.za**

Agreement
This agreement states that you have received a copy of this informed consent. Your signature below indicates that you agree to participate in this study.

Signature of Subject : _____ **Date:** _____

Subject name (printed) : _____

Signature of Researcher Date : _____

Appendix G: Consent Form

Participant Consent Form

Each participant must be supplied with a copy of their completed consent form.

Research Project Title: A collaboration model for effective implementation of PBL in nursing education

Name of Researcher: Mahlasela Annah Rakhudu

Ethics Clearance or Approval Number: NWU-00033-11-A9

1. I have read the Information Sheet for this study and have had details of the study explained to me.
2. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.
3. I also understand that I am free to withdraw from the study at any time, or to decline to answer any particular questions in the study.
4. I agree to provide information to the researchers under the conditions of confidentiality set out on the information sheet.
5. I wish to participate in this study under the conditions set out in the Information Sheet.
6. I consent/do not consent to the information collected for the purposes of this research study to be used for any other research purposes. (Delete what does not apply)

Participant's Name : _____

Participant's Signature : _____

Date : _____

Contact details : _____

Researcher's Name : **Mahlasela Annah Rakhudu**

Researcher's Signature: _____

Appendix H: Interview Guide

INTERVIEW GUIDE

I. **Introduction and project explanation**

- Review and answer questions about the consent form
- Emphasize the voluntary nature of the project
- Explain the justification for voice recording, ensure participant agrees
- Ask if participant wants a copy of the digital recording. If yes, get mailing information.
- Ask participant how they want to receive a copy of the interview summary (email,mail, etc.) and get mailing/email address.

II. Gather descriptive information

- Name (if participant agrees to be identified)

Institution where the participant works

- Position of the participant.

Experience in nursing

- Number of years working in the position
- Interest in the problem based learning

III. Opinions/ perceptions on collaboration in implementing PBL for pre-registration nursing education

- Review need for collaboration
- Ask participants who they perceive to be the key players in implementing PBL
- Ask participant what they perceive to be the strengths of collaboration.
- Ask participant about what they perceived to be the barriers of collaboration in implementation of PBL.
- Ask participant to ***suggest ways in which collaboration can be implemented in PBL at this level.***
- Ask participant to describe the benefits of collaborative work in implementing PBL for preregistration nursing education.
- Ask participant to ***briefly describe their abilities in collaboration implementing PBL in pre-registration nursing education could be improved:***
- Ask participants to recommend Factors that contribute to successful collaborative work in implementing PBL in Pre-registration Nursing Education

- Ask participants to briefly describe opinions regarding **principle of Ownership &Trust**

V. Identification of Key Stakeholders

• Ask participants' to identify who they believe are key stakeholders in the PBL

VI. Provide Time for Participants' Questions

• Ask participant if they have any questions for me

• Ask participant if they have any feedback on the project/interview

• Ask participant if they would like to be notified when project is completed

Appendix I: Individual Interview Transcripts of Nurse Educators

INTERVIEW TRANSCRIPT (23/24) UKZN

Participant's Profile
Gender : Female
Age : 36
Position : Nurse Educator
Highest qualification: Masters
P: Participant
R: Researcher

R: Ok Ms X. Thank you very much for accepting my invitation to participate. As indicated, I need the nurse educator's opinions regarding collaboration in implementing problem based learning, particularly for the pre-registration programme.

P: Uhm...uhm...

R: The aim of this study is to develop a model of collaboration in implementing PBL. In the country you are one of the five (5) universities offering problem based learning to the undergraduate or pre-registration programme. That is why I am here to collect data on this regard.

P: Ok. Do you want me to start or do you want me just to give you the overview...of the undergrad? When you talk about pre-registration, I would refer to it here as if within our undergrad programme, where problem-based learning is seen as the...is the core as in how we run the modules. (1:07) and myself, I teach research, and so. I use problem based learning in showing the students how...how research needs to be clinically relevant. The problems that we have identified come from the clinical space. Uh...research is almost like it is experientially learned. Eh...through the means of doing an on-going project from the beginning to the end of their learning on that regard is how we use problem based learning.(1:47). Eh...I see you have a question here in terms of the need for collaboration. I think you know that there is a big new for that. Mainly because even though you are recognized as school for using problem based learning, (2:06) there is high turnover our staff. And as such, you find that you need to continuously support new staff members into understanding this type of methodology of teaching. Eh...class numbers are being bigger and you need to think about new methods of implementing PBL with large numbers.

R: Uhm...uhm...uhm...

P: For myself, I think because I have historic knowledge in that because I was also an undergrad student here, and during my own training I did...you know...I went

through PBL. If I reflect our classes were only twenty and now we have at least fifty in classroom. So, it is fifty to one facilitator. So, I think if we are talking about collaboration, it is in the sense that even those host universities. I mean when I say host universities, I am reflecting to the university that is using PBL as a method of facilitating learning. In learning, we need to have collaboration with other champions of PBL, to guide us on how do we now take the new mandate of higher education that we are hearing from political legislation of increasing access. And we need to make sure that our training is clinically relevant. (3:40). As a facilitator, you need to have boundaries within your PBL sessions to make sure that the students when they are being self-directed in terms of their learning issues, that they have identified, that work is still clinically relevant to the ...eh...just to the context within which we work. And the issue of like...eh...eh...large classrooms eh...eh...how does one facilitate that kind of learning? And eh...eh...the issue of you know how to support of staff in terms of on-going eh...refresher courses on PBL.(4:24) Ja.,..We all started like around 1996. When we had McMaster training and very little has been done thereafter, and a lot has changed in terms of learning outcomes. We are now moving towards new NQF framework and so a lot has changed in the module outcomes. So, they should be alignment with PBL methodology as well.

R: Ok. Ok. What is your view regarding the collaborators? Who do you think should be the collaborators?

P: You mean, in relation to revising PBL? (05:22)

R: I mean collaboration in implementing PBL

P: Uhm...uhm...I am just going to answer in terms of how I think you are asking the question. Because, I am not sure how PBL was kind of implemented here. (05:40) I can just give you my opinion.Ok that is what I need, your opinion

P: I am just going to tell you what I think. I think that the major stakeholders need to be firstly the clinical practitioners or spaces. I think of partnership with sometimes...I think we sometimes work in such isolation with our clinical partners. So I think I know that there is a move like clinical training grants that are now being initiated within our institutions that will bring in clinical preceptors that can be part of the classroom learning as well. But, I think we should be talking with the clinical stakeholders from either like from a provincial level structure (6:33) first of all to identify what are their urgent health needs. What are their major health needs? Often, there are new policies that are also implemented there, that we can network in terms of making sure that the classroom learning is relevant to what is there. I think that is the first thing is the balance between clinical stakeholders in the hierarchy level, the unit managers, etc...Eh...Eh...then I think we should recognize that we have education bodies that we need to make sure that our learning outcomes regardless of the medium through which we facilitate that learning, which may be community bas learning, case-based or problem-based learning. (07:29).They should be aligned to those. I think one needs to have partnership with...just a dialogue with like CHE

(Council of Higher Education) like the NQF just to ensure quality or our university have quality assurance, and quality promotion. We need to make sure that learning is of quality standard. The standard or just ensuring that eh...classroom learning is leading to lifelong learning etc. So, I think those are the other stakeholders that need to come into play. And obviously other collaborators would be, but I can't name names, but could be Champions of PBL. Where you can see that the methodology has been researched, there are papers that have been generated from them. They can come in and guide us (08:33). Because, sometimes it is difficult to define what is an expert, and I think an expert is somebody who is empirically based, that will have a lot of evidence that can support.

Ya...how do you establish that they are the right persons to do that (8:58). You have to kind of globally have partnership. We are kind of privileged by having a learning-teaching office to facilitate ongoing eh...eh...ongoing training. (09:14) But, there wasn't a training that was specifically on PBL and strategies...eh...what do you do as a facilitator to make sure that the learner is self-directed, that the learner is a critical thinker or the learner is at the level where they are able to harness these skills for a life longer.

R: Ok...Thank you...What is your opinion regarding inter-institutional collaboration?

P: I think inter-institutional collaboration is valuable...I think it is valuable. I think that eh...eh...there should be more of those inter-departmental collaboration where.....eh...ehh.. in nursing eh...eh... we are one discipline. We are sometime divorce in the sense that we are functioning under larger faculties, and we are just seen as small department within the larger faculty. So with inter-institutional collaboration, there is an opportunity that the nature of collaboration is very valuable, because you learn best practices from other institutions.(10:37) Five institutions that are offering PBL and there should be eh...eh...a forum or a space where we can come and showcase our best practices to one another. Because, often the questions we might have, might be addressed by other university, who is also offering rather than staying alone in own faculty that might not be using that methodology in their teaching.(11:07) So ya...I think that is valuable. I think there are large conferences that we have that attempt to bring us together and create that space. I think there should be some kind of formal...eh...Is isn't that we started teaching eh...eh... as WHO initiative in the Seychelles. I was nice to see that even Seychelles University was young and they had a twin programme. They twinned with another university eh...eh... And that should be the type of collaboration that we should also do in terms of PBL. Ja...Ja...because PBL needs ongoing support and ja...just learning from both side. and so....we should have universities that just started the implementation of PBL to be twinned with the institution that has done it for a long time, so that there can be sharing of lessons and Ja...just learning from both side.

R: Ok. You have already touched on the benefits of collaboration. What could be the other benefits of collaboration?

P: Benefits of collaboration?

R: Ja...

P: I think part is what I have spoken about. As I was saying our network of nursing will grow. You know...you kind of know one another. Eh...I think it comes with any other kind partnership or collaboration. It increases the network, it increases your eh...eh...resource pool, and so you are now able to identify...Ok..."I know so and so ,particularly the universities which are expert in that particular thing, that are innovative in strategies in such as learning, and use things like models, and what do you call that? Large teleconferencing conferences (13:20) where you often using campuses from rural settings and so we kind of send a lecture from this side to site or to the far sites.

So one needs to understand that maybe from another university, which you can collaborate with, than hoe do I then bring PBL into that kind of technology-is part of learning?

R: What are other benefits, if I had to ask your opinions?

P: In terms of?

R: In terms of this collaboration

P: You know when we talk about collaboration. I think you cannot divorce collaboration is about PBL, and so we are not just talking about generic collaboration here. I think what or understand. It is a pity; I did not get this before. May ...I would have understood the question. If we are talking about collaboration to be between the universities to be between the universities there are obvious benefits.

One of that is that the learners who are going exposed to PBL are already engaging with just problems solving skills. Thus, in engaging in such problem solving skills, at a higher level in the sense that they are reflecting on actions. As this is happening, they are reflecting on what is happening in classroom and how to handle this. We know that health care is not generic. The patient care is also not generic, so the obvious benefit there is that the nurse is able to tailor her care into a more holistic manner. So when talking about that collaboration, then that is the obvious benefits.

In terms of other collaboration the benefits that may come forward is that ....and it difficult to kind of this question, because it is like you are talking what if. It is like an ideal situation. Because, I cant relate to my own experience of collaboration because, I have not been part of collaboration.

R: I am sorry because my intention was just to see your opinion regarding benefiting other people. I am sorry if I...

P: (Interrupted) I was saying it is vague in that, it is as if what was happening

R: I was thinking in terms of implementation of implementing Problem-based learning. I am apologizing if I misdirected you

R: Ok. We can now focus on the success factor. What would be the factors that may contribute to the success of this collaboration in implementing problem-based learning?

R: What would you like to see happening in this collaboration?

P: I think this impinges on what I have already said. The benefits, I think they impinges on the type of collaboration (17:40) Kind of hinges on that you kind of (17:52) and you have strategies that are going to address some of your needs. And I have mentioned some of our needs already. So, I think if I can talk about those needs, the success of those would be: - You should have a champion in that regard, that she comes in and assist in showing the educators in terms of how to...how to modify the facilitation skills, and how to modify the classroom into action. (18:25) so those are the things that will drive the success that need to be seen happening in the class. So that ...that gap that you have identified should be there anymore. In terms of implementing collaboration, what will make it successful, you have a good network of stakeholders. Eh...that are your resources, like an advisory panel (18:50) that you can go to at dilteral levels of the implementation.

So...in the beginning of the implementation you might have teething problems, in terms of the facilitation skills. The skills of the eh...eh... lecturer or the skills of the learner. This is because, they (learners) are coming from the space where they were taught by the traditional method of education, and so they often have this perception of PBL is kind of an easy way out. So you need to need kind of an orientation plan.So these things kind of feed into the success of how you implement this PBL.

Again, before I forget, collaboration in implementing PBL requires active participation of nurses from the clinical space. In particular, they should be involved from the beginning, for example planning of the PBL curriculum, implementation and evaluation. Clinical practitioners will can contribute a lot during scenario development, facilitation of clinical learning as well as evaluation of PBL clinical learning Nurse educators have the tendency of inviting people when issues are already on the way or during implementation phase. I suggest that let us ensure that all collaborators participate in decision making and problem solving. This will promote ownership of collaborative decisions and activities. Active participation is also valuable in enhancing shared accountability and responsibility.

R: Any other factor that may contribute to the success of this collaboration.

P: Collegiality is critical. As collaborators we need to flatten the hierarchal relations. We must work as equals and treat each other with respect. No one should be

superior to the other. Like I said, if we involve all collaborators in decision making and problem solving, as well as from the inception of the collaboration process this will kind of enhance trust and respect. Communication won't be coming from top to bottom. We would be communication as equals and sharing decisions, problems and accountability. Whether it is interdisciplinary or inter-institutional collaboration, we need to relate with each other on a collegial or non hierarchical manner. This type of relationship must be accompanied by respect and trust. Naturally in any relation you respect and trust a person who treat you as you an equal.

R: Ok. Thank you. May I get your opinions regarding barriers to collaboration.(19:43) What can be barriers to this collaboration in implementing PBL? Or roadblocks in this collaboration?

P: I think the roadblock is like this, what is happening now. We are identified as a PBL School and we are, but a roadblock is that a number of out staff members are not formally trained on PBL.

So it is like trial-and-error (20:22) and their learning PBL themselves, and that is a major roadblock. I think that is the major barrier.(20:35) You yourself cannot identify where the gaps are in your facilitation skills. So what turns to happen there is that there is a space for PBL and the lecture takes the lecture method for the fear of completing the content. They don't allow students to kind of solve the problems themselves. So for us, that is the major concern, it is this issue...in terms of collaboration in implementing PBL...that becomes a problem as well. There are still experts who are still around and will help shooting-troubles and problems. I also think lack of engagement with policies, lack of engagement. PBL is also looked in isolation happening in the undergraduate and sometimes divorced from reality of what is happening in the clinical space, as well. Because that can lead to lack of confidence, where the learner might project it in terms of their knowledge. Because really, it is about critical thinking.(22:07) One cannot cover the content as in critical thinking.(22:16)

I also think time constraints can also be a limitation in collaborative work, especially for the clinical staff that is always having this shortage for staff of personnel. At times even assisting PBL students with information or learning opportunities is challenging for staff because of the unpredictable nature of the clinical settings. You find that Students are not well attended and this frustrates the collaborative endeavours in implementing PBL

Lack of engagement of stakeholders can lead to lack of confidence.

R: Ok. I hope I am not taking your time as you have indicated that you must be somewhere at 1h00

R: Last question. How do you view funding as impacting on PBL?

P: I think that is a big factor.

When we talk about the funder, they are all necessarily like NGO funders. In terms of your institutional structures, those finance decisions. You find that they don't understand the nature of PBL. They don't understand that more resources are needed. So these small group work and group work, I think they can be facilitative or they can be inhibitory role players in the implementation of collaboration of PBL. It is true that you can do that with limited resources, but you also need your classroom and learning spaced to be designed in such a manner that it facilitate for that kind of ...eh...eh...small group discussions and break away sessions. And if your rooms are traditionally set up, that does not facilitate learning.

So, I think even in collaboration in how implement PBL, there is a lot that needs to go into it. A lot of different types of resources that is needed to allow our learners to take ownership of the learning experience.

R: I don't know I we have covered them all.

P: I would think if it is ok with you...because I can see from my side. Perhaps...I am not getting that sense of whether you want me to respond in terms of just how the implementation works. Maybe I should see the proposal and see how you look at this concept collaboration. Well if it is ok with you, we can do telephone conferencing, and I think I will be better prepared. I will understand what is meant by this, then we will have telephone interview.

R: Ok that will be appreciated. I also think that will allow me to verify certain aspects. So that I can be able to send over the question

Tape stopped

Interview script of PGON

Age: 59yrs
Gender: F
Experience in Nursing: 34yrs
Experience as a manager: 22
Specialization: Psychiatric nursing and nursing Education
R = researcher; P = participant

Good afternoon and thank you for offering me an opportunity to interview you.
P: Good afternoon and I am happy we managed to meet ultimately.
R: This is part of my PhD study and aims at developing a collaboration model in implementing problem based learning in nursing education. This will depend on ...the nurse educators, the nurse managers, and preceptors to give me their opinions regarding collaboration in implementing PBL. As a result, this was, the main question is to get your opinions regarding collaboration in implementing PBL. So, I am going to request you to give me your genuine opinion regarding this.
P: Ok ....ok, generally, you know the province has a lot of problems, especially where resources are limited. Collaboration to me is necessary. And especially where people are handling almost the same type of things, type of line...like for instance if people are doing teaching, basically they can share whatever they have. ...and...again it basically would assist in improving certain things within the performance of whatever line people are in, like for instance in education, where people would share information, people who have the necessary knowledge would also advance that knowledge to those people who don't know, so to me, collaboration is really necessary to address areas which are like almost similar, and where resources are limited. Yes.
R: Ok...
P: That's really how I feel or how I see the need for collaboration in some of the issues.
R: So, I would like to get your opinion in collaboration in implementing PBL, or problem-based learning, from your experience – the little experience that you had about problem-based learning. How do you see us collaborating?
P: um...generally, one would still say.... we have limited resources, especially in implementation. Like for instance, people would be having limited resources in people who are initiating or advancing the PBL itself. For instance in clinical area,... if I may give example.... People might not necessarily have the relevant resource that they could use in trying to ensure that people understand how PBL could be implemented. Resources like maybe people who can be used as clients to really participate to understand how PBL works. Resources like where people could be assisted to get information when in the clinical areas. Resources like where people are basically assisted to deal with IT issues. So to me those are resource limitations, and if we could then work together, that particular resource limitation could be addressed.
R: ok, ok. So in this collaboration, who do you see as collaborators? I understand the clinical and the nursing institutions but who other could be collaborators in this implementation?
P: Generally, when we really would like to look at collaboration, it will not necessarily only be the people who are involved. It will be the people who then assist in giving the necessary resources as I am saying. For instance, managers, we would basically also need the client or the patient that you'd really would be working with, because where you don't have resources, and you can be using these particular people to work with, and they will be used for simulations. But in ensuring the whole collaboration, managers are necessary - for issues of funding for issues of assisting where resources are not there. But you also look at other

things that relate to clinical people, who'd assist in ensuring that those particular service areas are there for implementation of whatever people intend for those collaborative issues. But you also need people who would be – I wouldn't say managers at that level – but managers with understanding as of where education is going. Because if they then understand, they will understand why people are coming up with different strategies to try and address the key issue of education and training.

R: mh-hm, mh-hm. In your opinion, what would be the real benefits of collaboration?

P: um, the main benefit is really sharing...to me, because people would be sharing what they don't have. The second thing that basically would be gained is that people would have clearer knowledge. That would be the second because those who have and understand will impart, and the others would then gain from that collaboration. But the other thing is there would be improvement in whatever service people are involved in. Like for instance, if you are involved in education, like you are involved in problem-based learning in nursing education, the performance within the situation be improved. Because those people were given the service, to then benefit from that collaboration, where others would come up with other things, where others would come up with resources, that would basically be assist in those particular areas.

R: ok. How could this be formalized –collaboration?

P: ...generally, for collaboration to be formalized..... It's basically for people to come together. Either coming together or engaging new issues of LSA, that is level of service agreement.... Where they would then understand as we work together, this is what I am expecting from this partner, and this is what I should be giving that particular partner or collaborator. So that they understand what is it that we are sharing, what is it that they are giving each other, and then how are they taking the process forward.

R: so...am I right to equate it to memorandum of understanding?

P: yea, MOU.

R: ok. What should be entailed in this LSA or memorandum of understanding?

P: I think the main thing that should be entailed in LSA or MOU how things are going to be shared. That's the first thing. What each party is bringing to the table, so that we can then have a better understanding. And again, how decisions would be taken relating to moving forward would probably be in, and how will those decisions be taken in this collaboration, where and how. Like, for instance, scheduling.... Issues of saying, do we need to meet as a group? Do we have to set meetings, and what is it that you are expected to be following when we meet. And how can we use what we have to really assist the people that we'd like to assist. It's not only the learner, but we are also intending to assist the client that we are giving problem-based to. Because as students learn through them, we are also are giving something] with whatever you say.

R: ok. What would be the success factors in collaboration? What factors do you hold will contribute to the [?personal...8:16-17]

P: The main thing that would basically contribute to the success is communication. You know the parties need to communicate. So that each knows what the right hand is doing or what is the left hand is doing. That's the first basic thing that you basically need to have. The other thing that generally would improve that is bringing in resources or committing resources to this collaboration. Agreeing on what resources should be done, or what resources should be brought. So, that people can understand that these are the resources that can in a way assist in problem-based learning. Those are some of the things that one is really look at. But again, sharing.....Sharing is one other thing, because if you don't share, it doesn't help to really move forward.

R: resources, can you just break down resources that should be brought to collaboration?

P: generally when you look at resources, (Interrupted by a knock at the door) I'm sorry I've taken a bit of a time. Resources that one is really looking at is resources relating to material

resources. Like, for instance, if you look at our clinical situation, at times there is just down-sizing of clinical situations. And when we get to an area where you'll see and feel that this is not a unit that could be covering maybe a medical unit. You'd find it not to be covering those areas that you need because it has been down-sized. So, those are some of the resources that one is really looking at, so that the students that you are teaching or the students that you are engaging in problem-based, can help that situation where there really are practices. The second thing on resources is human resources. I mean, if you look at two institutions that are collaborating. One might be having adequate human resources; the other might not be. So, in sharing and really working in such a way that whatever you implement on problem-based because you are doing almost one and the same. You can use those particular resources, unlike if you say you'd differentiate and say, this is how I do it in my college, and this is how you do it in your college; coming together and coming up with a plan that would allow us using these resources would also assist us greatly.

R: ok. Maybe I should go back to the collaborators. In the province, we have nursing institutions – about 3 or 4 – how do you see the institutions in the province collaborating...on PBL?

P: Generally we have a big problem in the province. But because of the demarcations and you know the issues of political guidelines, they fall within different areas. Like, for instance, other fall within education, other fall within the Department of Health. But these people, there is nothing that stops them, especially if they want to achieve something that would basically address both education and also performance in the health department. And the only way they can collaborate as 4 institutions is having the understanding of where we want to go to. Like, for instance, whether all the 4 understand whether problem-based learning be an appropriate strategy for meeting their needs and the needs of the others that they are trying to work on. But again, the other thing is that understanding would not in any way assist, but the people must be committed in whatever they are feeling. Because if they are not committed, people would say they may go on without us they get the bulk of the budget, so it's a way of saying we are doing one and the same thing, so why can't we work together. If saying we should like connect all these resources that you are having and use them appropriately. To me, if they can do that, or if the 4 institutions that we are having can work and have the same idea as to where they would like to go, that would basically assist in that collaboration.

R: ok. Maybe I would request you to tell me what is the barriers that would hamper this collaboration...the barriers of collaboration in implementing PBL.

P: I think, the fact that one basically is looking at the demarcation that we have. For instance, not belonging, where people...where the different structural areas would be saying, I cannot. Because certain they have...people might not necessarily know where they should move forward so that we can then collaborate. What I'm really meaning is, if we are looking at the institutions that we are having just in Mafikeng, one is education, one is health. That in itself demarcates there. So, that's the first thing that I think, that would basically affect that particular aspect. But the other thing that also one sees, it is...we not having, you know, the same education information, or knowledge information of what really the structure here relates to. Because if people know, they could sensitize their own, and then we move together to say, but though we are in different areas, the main key area that we are working towards is this. But because people don't have, even when others are saying let's collaborate, because of limited knowledge, you already see of big things and then you simply say, no, I cannot be moving in that particular line. That is why I earlier said, you know, communication and sharing would basically play an important role in this collaboration

R: Ok. The demarcation and inadequate knowledge information, or lack of knowledge is barriers. I hear you when you say this can be overcome. The demarcation barrier, how could we overcome that so that we really collaborate? I believe you talked about the benefits

and sharing would be a benefit, but with this demarcation, how can we really overcome this to try and really collaborate?

P: You know certain things might be seen as really impossible. But one it seem that if you really want to move the strategy forward, which is for us, to work together, that's the first thing. Generally working together in such a way that even though there are political things up there, lower down we know where we're going. And that is why if we can work together, we can be able to push together, to really erase whatever we see as political. So, to me, I really think if we can work together as a group, at that particular level where we are in because we have the understanding certain things of these demarcations might be addressed.

R: Ok I hear you. Uh there..I want to go back to the attributes of collaboration. You did talk about communication, sharing. What other attributes would you like to see in the collaboration? To see this is a collaboration, how should it be? What should happen?

P: generally you know if it's necessary that if people understand where, or what is it that they would like to address. Can collaboration look at that and really address it? Generally assist. Like, for instance, when one said communication, and one said sharing, automatically you cannot share, if other people are not willing to share. It becomes a problem, because you are working against brick wall. And that is why one feels your...one big benefit of collaboration is where we can simply say that two areas that are trying to collaborate would basically have to address what they see as a big barrier. Like for instance, if you look at resources as I earlier said. The two institutions are having grants, you know – education grants. Other, the other, the grant to another might not be fruitfully used, that's funding that's resource. But the other in another area might be appropriately used. So if you collaborate and you seem to address this one, the other group that have a linkage might be able to work that. For instance, let me not maybe talk in parables, for instance you have in education training and development grant. In education, you people are having are having the clinical fund. You...if we really work together, and we say we're saying you accessing our funds, but it is possible for you to access the funds. That, in itself, can then assist. So, to me again it brings me back to communication and trying to have a fair understanding and openness in making people understand what they could be doing in relation to some of these things.

R: yes. If I sum you well, when you say looking at what we want to achieve, am I right to say maybe goal-setting, a set goal will be one of the...am I summarizing you right?

P: you are summarizing me fine.

R: Ok, ok. So, you did mention about openness, which you mentioned when you touched on communication. What else would you like to see in your partners in education?

P: I might be missing certain things, but I thought generally I've found out the bulk of the things that I am doing

R: Ok...what do you think about leadership in this collaboration? What is your opinion about leaders in collaboration?

P: leadership is critical. And that is why when I was as human beings or people we work in collaboration. The basic thing that I brought forth was that it may not necessarily be clinical learning educators; it may not necessarily be managers, but it needs that leadership above. So, that they can then understand. I mean, leaders may not necessarily understand the strategy that people are trying to form. But with understanding, they are the ones who then give the necessary resources, so leadership is necessary, and the leaders above – you know senior leaders – may not necessarily understand if those who are involved in the real strategy don't understand the strategy because those people need to be informed. So, if you don't understand the strategy, even if you ask for assistance from them, which would not be forthcoming, because you are unable to push forward and really give them appropriate information.

R: So, how could we address this lack of knowledge, or knowledge barrier in PBL...especially for collaborators.

P: I think it's necessary that collaborators, for them to be at the same wave length should have information on what strategy is used for teaching students, and the only way you can address that is either to have sessions, training if ever there is a need. Whether you have a full session or you have a session of workshops or you have briefings. Like, for instance, if people then have those trainings, have undergone workshops, briefings will be necessary for those who are senior, so that they can then understand where these particular people are going. But your training workshops is not be in classroom teaching only, it also needs people to be knowing what they could be doing in that clinical setting, so that they can then really understand why the strategy's being used.

R: I don't know if you have something to add on all the areas of collaboration.

P: Collaboration as one really sees it is a good strategy. It's only that there are other things that, normally, would affect people in implementing that. Like, for instance, in instances where there is no guidance as to where you're going. That in itself is a problem. In instances where people don't have the knowledge, like for instance where people collaborate, it's the way of saying, let's assist each other, you know. Let's partner to be able to assist each other. But if people don't understand what is required in partnering, then it becomes a problem for them to really collaborate. So that is why really one sees it as a necessity for people to be empowered on PBL and collaboration for equal understanding. The necessity for those who have, or who are pushing for it, to know that this can be a long, tiring process; because you are taking some people from down there, pulling them to wherever people are. So that they can then understand when you say, let's come together – bring this, and I bring that – and then they can take the process forward. So, to me, that's generally one other thing that people can look at.

R: Yea. I appreciate all this. For now, I am saying I got information, but please allow me to come back and knock at your door when I need to verify certain things about this collaboration.

P: no, I don't have a problem. It's just that unfortunately you might be delayed because of my move. But if I am there and you have my number, you can basically call and we can adjust the hours, I don't have a problem.

R: ok, kea leboga. And maybe do you have questions for me for now?

P: mmm...generally I don't have. But one can simply say that with your study that you are doing on collaboration, how do you intend on breaking the walls?

R: ok...[recorder switched off] 25:27

Appendix J: Focus Group Interview Schedule from the Nurse Educators

INTERVIEW TRANSCRIPT OF UNIVERSITY 2
R = Researcher; PRL; PLN; PUR; PSM; PJM; PAM; 6 = participants

R: Good morning colleagues and thank you very much for availing yourself to this interview
R: ...to say, you tell me your opinions and your perceptions regarding collaboration in implementing problem-based learning.
PRL: oh...I would say...maybe, from my point of view maybe we could talk about collaboration in between other...our university and other universities. Then we come to collaboration within the university. Then collaboration with clinical...
R: mhm...
PRL: so we can divide it into sections. We'll start with collaboration with other universities, especially universities of excellence. I think it's very much important for us implementing problem-based learning to collaborate with universities of excellence like what we did with University of **Maastricht** where we were work shopped and they were monitoring of how we developed our modules, our block books and see how we are implementing to assist us, to steer us towards the right direction. And I think continuing collaboration with such universities, it's important because then you can maintain the quality until you find your feet. But in the same breath it's very much important to collaborate with another university of excellence that is at the same level with you regarding economic issues like in, infrastructure, opportunity, because if we collaborate only with **Maastricht** it's almost an ideal situation that we cannot manage to have, but if we use Eduardo Mondlane in Mozambique, which is from a low, under-developing world, then we can see how are they improvising in other aspects because when we are in a similar situation and we can see that this is very much it's an ideal world...it's a clash with the mode of teaching, the access to libraries, very much because you can set your standards toward what they are doing but because it's not always possible...it's also ideal to collaborate with another university again, that is in almost the same level as you. And I think because of the political context of South Africa, it's also important for us to collaborate with other universities within the South Africa, so that we can maintain the standards and we can improve on what we are doing, because there is not cutting rule of, this is how you should do it. Then you can learn from other people, and come and design your own according to own situation.
R: Ok, if I hear you well you are saying that we can collaborate with Centres of Excellence; we can also collaborate as national universities within the country. Again, a centre of excellence within the developing country...
PUR: Centres of Excellence should be our collaborators for mentoring, development and guidance on PBL curriculum development, implementation and assessment. We can learn few lessons from them. They would share information, expertise and talents. The collaboration with these people needs to be formalized.
R: Ok maybe I should go back to the very same issue. How can this be formalized? What is your opinion? How would we formalize such collaboration in these centres?
PRL: Maybe we should have a MOU. But the MOU should be facilitated from the university with other collaborators. Because if it's University of Venda and you need to collaborate with University of **Maastricht**, clinical services, and one university national, it means that university of Venda is the one that will be able to bring the people under one pot. You can work as a team, maybe to have workshops at UNIVE, although sometimes University of Venda staff may visit **Maastricht** or may visit Eduardo Mondlana, may visit, maybe University of Kwazulu Natal, but the collaboration being controlled by the university...that made the collaboration in order to maintain the standard. Then together you can map out can you have maybe in-service workshops? How often per year, or once per year? Together as a group...if you identify that

this university is doing good in this aspect, let's say clinical, like University of Western Cape, then you can focus your clinical...more strengthen the collaboration on clinical with the university that has got excellence in clinical, in problem-based clinical learning. And if you feel this university is more powerful in theoretical, then you can also visit that university and gain more information. I don't know, that's how I think.
R: ok. What are the other colleagues saying about collaboration? What are their opinions?
PLN: Thank you. I think I tend to agree with what my colleague has just outlined. It's important if you want to collaborate with other institutions, to make sure that you don't only collaborate with the best, like the ideal situation like she indicated. It also gives you reassurance that, ok, if the other university that is not having the resources like ours it's managing to do that, it means we can also do that. So, it sort of it encourages you to move forward. Unlike maybe if you are only collaborating with the ideal situation, wherein you could say, ok, that cannot work in our situation because of 1-2-3. And then if you have got all these institutions then you can see that it is doable, you can continue doing that. And the fact that it's important. This is not...although it's an old strategy, but it's not all the institutions that are utilizing it. So, I think it's important for us to make sure that we maintain the mode of using that because if we are not collaborating with others, we are just doing it alone, you could say, no I think because of 1-2-3, it's better maybe to abandon the strategy.
R: ok, thank you.
PUR: Again, still on that issue of collaboration...I think as our colleagues have indicated that once a Memorandum of Understanding has been put into play, we can have also things like exchange programs. Like those people who you know that they have got a model of clinical practice in PBL. Then we can have a sample of our students maybe even the lecturer going there for a specific period of time so that they can get exposure on how things are done. So that then they have got a certain, you know, picture of how things are done, so that when they come back with their students, then so it means the exchange programs can be done on different levels depending on how we want to share information and let our students get exposure, so that would strengthen, you know, the collaboration.
R: the collaboration, ok.
PSM: ...on what she's already said, it could also be best to also expose the staff to other institutions offering PBL to know what the differences, and what was done to address challenges

PLN: We also need to collaborate with a national university which is disadvantaged like us...to make sure that you don't only collaborate with the best...like the ideal situation like she indicated. It also gives you reassurance that it is not ok if no other university that is not having resources...like ours, is managing to do that. It means we can also do that. So ...it is sort of encourages you to move forward.

Researcher: Uhm..uhm...

PLN: Unlike when you are only collaborating with an ideal situation, where in you can say ok... that cannot work in our situation, because of 1,2,3. But when you see this other institution in the country, you can see that it is not impossible and the fact that it is important that this is possible to do away with the old teaching strategy. I think it is important for us to make sure we maintain the made of using whilst using problem based learning. We should collaborate, because if you are alone, because of 1, 2, 3 it is better maybe to abandon this strategy because of the challenges. But if we collaborate it is easy to share the problems and solutions to those problems.
PLN: While still on the collaboration and memorandum of understanding has been put in place, we can have things like exchange programs. For example those institutions that have the best

model of clinical practice in problem based learning. Then we can have a sample of our students maybe even lecturers going there for a specific period of time to me to get exposed learn for a specific period of time to get exposure on how things are done, so that have first hard information and picture of how problem based learning is done. Come and share with others, it means exchange programs can be done on different levels depending on how we want to share information and how our students need exposure. Then in this way we will strengthen the collaboration.

Researcher: Uhm ...uhm...

PLN: This exchange program would strengthen with collaboration.

PJM: To add to what she has already said the staff will also know what is expected of them, if they visit those centres of excellence in problem based learning institutions that have. They would already have started to know how to implement it and how to run it. Also mentoring will be offered by these centres of excellence in problem based learning. If will collaborate ... *silence*
Researcher: Is that all about inter-institutional collaboration?
Researcher: Ok... Colleague (PSM)... Do you have anything to share?
PSM: Ja...Ja... I am just thinking of collaboration with clinical settings where we send our students. This is ...because some of the part-time workers in our institution (university) are working in clinical institutions. If they are orientated on problem based learning, I think they will collaborate very well. I think people in the clinical areas also need to be orientated. This will help even when they are assisting in facilitating and accompaniments, this will assist. Collaboration with clinical staff is very important.

Researcher: Besides assistance in clinical accompaniment of students, how do you view the roles of clinical staff in other aspects of problem based learning?
PRL: The people in the clinical area?
Researcher: Uhm...uhm..Yes
PRL: I should think if the institutions attached to the hospital in it would be much easier to form collaborations because when students are doing their self-activity they can get the information from the library. They also get their information from the clinical situation. They will be looking, for instance, for blood or constitutions of blood, they can even visit the laboratory to see constitutions of blood under the micro scope, and then it enhances their learning. The area expected... may to do a skill in between, they can go to the clinical situation to can do dome procedure – and – and most of the time when we teach them along the national guidelines which are the things that are implemented in the wards.
They can even interview the people who are implementing the guidelines, e.g., "How are you doing it " Let's say maternity guidelines, and they are doing something related to these guidelines, they can easily ask the professional nurse who are busy implementing these guidelines, and it will enhance their learning, so they can work with them when they are in the clinical area and – even when they are in a hospital are, we can self-activity by going to see someone with CCF when they are learning about congestive cardiac failure. They can learn it from the library; they can go and see how the patient is managed. Again, we can also use them to evaluate to students.
Researcher: Ok we talked about clinical people...whom are we referring to? ... Silence ...
PRL: We are talking about the professional nurses...because currently we don't have preceptors.
PSM: When we send students in the clinical area... it is ourselves who have to do students accompaniment in the clinical areas...or. So when we are having part time lectures, we use the

preceptors or we should do that. But the sisters in the clinical services because students are allocated in the wards, they are the ones who assist us with clinical supervision. That is why we need to collaborate with them and they need to develop or problem-based learning. This is because we do not have preceptors.
PUR: That is why with collaborations, we also ... as PRL has indicated with collaboration it is best if the hospital is attached to the university. Like working at the clinical area and that collaboration is there ... and we have the hospital nearby, it means those professional nurses would be part of the teaching team or the hospital will be part of the collaboration. It means collaboration can also occur between the hospital and the university.
PRL: If you are collaborating and there is an MOU, that can stipulate what is expected from the university side, what is expected from the hospitals side... we can get all cooperation? And...and if you involve them...run workshops... try to influence the use of the method by the nursing schools that is within the hospital and colleges so that when whole mind set... is changed...or you influence the change of mind-set of everybody...because now student that we receive from high schools, already are in outcome based educators mind set.
So we can sort of reverse that when they come to us, if we use traditional methods we need to maintain continuity by using PBL. If the nursing schools can be influenced to adopt PBL method, it will me much important to collaborate with the clinic, and staff with the head of nursing education in the province, because this might be a person of much influence...if we can win that person and the professional nurses. And, as we workshop them, we organize workshops and topics that will initiate them teaching problem based learning.

Organize workshops on issues of administration, or quality patient care so that they can benefit and we will also benefit in the sense that they are learning PBL method, and they can teach our students...ehm...not to go to them and teach problem based learning as if they are becoming tutors, No...no...
Researcher: Uhm..uhm...
PRL: But using problem based learning to assist them to learn...to...assist them to solve the problems that they have in the clinical situation. I think that could be more appropriate for them, and they can adopt the method more.
Researcher: Ok...let me phrase this question this way: what is your opinion regarding other non-nursing personnel in the clinical area in this collaboration? For example, earlier you mentioned lab technicians of blood specimens. How do you see their roles in this collaboration?
PRL: I should think, if we want to produce somebody who has got skills we need to collaborate with everybody, because they are going to work as members of the multi-disciplinary team.
PRL: And we are always using information that is out related. In order to be current, I think collaboration with the clinical area is very important.
PLN: I also think so, to enhance this collaboration, those other role-players have to have knowledge of the type of method we are using to teach students. Those other role-players should be able to assist the students. If we indicated to them that students are coming, more often for their guidance, for their knowledge and expertise, that they are having, I think they are going to say "I am busy with work you are sort of delaying whatever I am doing". If they know the method, it means we are going to get the assistance and the students are going to benefit a lot, and by so doing collaboration will be enhanced. Because if they know what is happening..... obviously the students will go to them for assistance.
Researcher: Ok...maybe we can look at inter institutional collaboration...that is within the university as indicated by my college earlier.
PRL: I think collaboration with the clinical area, this is a need to have information sessions, because it is where people are informed and that way they will cooperate. And...and...maintain that link between them and you. And...and...and always work as equal partners. So the issue of

who is above who should also be eliminated and work as equal partners. This because they have got knowledge....
Researcher: Ok...you did mention MOU. What would you like to see in the MOU? In other words...what are you opinions regarding this MOU?
PSM: I think at one stage my colleague did mention that there should be clearly stated roles, and what is expected. Maybe if you are the university, we are having an MOU with the facility or the other university. We know what is it that we are expected, what is the role. We know that if we want this collaboration...they are going to assist us on this aspect. The same with or in the clinical area, if they are assisting our students as one colleague has indicated we should give clear objectives why the students are there. Because at the end we will be sure that they understand the approach. They will be aware of the information and we have clearly ...or...or the understanding what is expected of them. I think that will assist to know what is expected of them.
PRL: Especially that the clinical always expect us to send the students that is skilled. They will say the students do not know anything and so on, so to change that mind set of saying here is a person who will look for solutions for problems in the clinical area, roles and responsibilities of each partner should be clearly stated.

PJ: I think another area where we can collaborate with is non-government organizations where students are placed for clinical learning. Students can gain knowledge and information. And also if those people are included in the collaboration, and have clear objective strategy what is expected of them and what is their role, I think that could also assist our students. Those people could be given workshops as to how we do and what is expected of them.
PJ: Let me give examples of areas that I am talking about, e.g., genetic health care services and environmental health services, abattoirs, dumping areas. Those people also need to be included in the collaboration.
Researcher: Ok...maybe we can go to...Inter-institutional collaboration
PUR: Ok I want to make a follow up on what my colleague has said when she talked about what should be included in the memorandum of understanding (MOU) that we need to be specific about how to help the students in learning, but maybe another thing will be...eh.. in the memorandum it should be clearly indicated that the collaboration should also enhance the partnership and the work situation between the very institutions. The very two institutions, like you know if they are having their developmental issues, to develop their staff and so on...it means we could also be included, and also we include them in our things.
This is because at times you find that they indicate that they follow the guidelines or national guidelines. There are times where they have mortality meetings where only the professional nurses, the doctors and the clinicians attend. This should be open so that the students can begin to form part of that they can be able to learn even, people from the nursing department in the university can be invited to these type of partners. So, that we are able to see learning in totality, and not specific to a clinical setup. In such collaboration, the students will be able to see the importance of such collaboration. They will be to see the roles of each individual, for example the dietician, the laboratory technicians and the doctors should have done this. With such integration the students develop and become more mature and see the importance of each individual in the multi-disciplinary team. Even when the university is having its own workshop, they can include the people from the clinical service.

We can even give them slots where we have campaigns like August when we have cancer awareness month. You can invite members of the multidisciplinary team to come and talk about cancer or present a paper about cancer. These will kind of show that we appreciated them and be seen as working as one. This will also help when we are following students so that you are not seen as an outsider when you are in the clinical area...or seen as a separate entity. So, we

must be seen as one. Even when you are in the clinical area and there are some procedures done in the wards, you can be invited to join especially when it is not inter clinical for the patients, so that there is collaboration.

Researcher: Ok...will I be summing you well when you say; the benefit will be role modelling of collaboration to the students and even future professional nurses.
PRL: I think if it works well, it will enhance the work relations in that hospital or institution, because of the multidisciplinary approach will be enhanced by this collaboration and...and... I think the issue of research in addressing the health problems will also be facilitated. Because if this is a good collaboration between us (the university) and the clinical area, we could have our students doing research that is addressing the health problems. And it will also be easy for us to...to give them results and recommendations to try to implement and improve patient care.
P.Male: I think this collaboration is relating to problem based learning and not just general, is it not that?
Researcher: Uhm...uhm...Yes
P.Male: with problem based learning or not problem based learning, the clinical setting...ehm...when we sent students outside, they have to learn practical. Is it not that?
Researcher: Uhm...uhm
P.Male: Collaborations is necessary to apply what has been taught in the class setting in the real life situations. Involving other people, those who do not know what problem based learning is, the students must have certain level of knowledge. The people in the clinical area do not know what PBL as a result; I don't see any synergy with those people.
PLN: I do understand what my colleague is saying. We indicated that for them to be able to be partners or part of us, we need to impart knowledge. In other words, they also need to knowledgeable about the method. That is why there should be these workshops with them so that whenever we are going to clinical areas those people understand the method of learning of the students. I think that it is important for them to learn how these students learn.
P Male: You mean the professional staff must learn in order to help the students.
PJR: I think there is somewhere one of my colleagues talked about developing those people (clinical people) and those people act as resources for students, because definitely the students will be referred to them as resources. In the clinical area, there are different specialties.
Researcher: PBL has different processes. How do we see our collaborations partaking in the PBL process?
PRL: It is a pity that we do not have preceptors, because during eh...eh... from the hospital side the professional staff can assist to develop case with us. I think they can lecture mostly in the development of scenarios because of their knowledge and expertise in the clinical area. If you have a person in maternity, someone in the medical and surgical or when you are doing something in the medical wards, you take such a person and so on. Then they can see how issues are approached.
PRL: There is this barrier that needs to be broken by establishing good collaborations and build good relationships and have well cut roles. They should know when they expected to come this side to assist and so on.
P Male: Ok...getting there now, we are saying in the clinical area need to be works-shopped. We will also use the guidelines method and also adopt the PBL national to the clinical area.
PLM: The collaboration is coming at the right time when the government and everybody is complaining about the students or health care. If collaboration is administered in such a way that this model could improve learning and improve quality of care the patients are receiving in difficult institutions.

PRL: that is why I say the workshops and scenarios that are developed should be applicable to them (the clinical people). Like scenarios on quality patient care or maternity care. The

problems developed should benefit the wards. We use those as the basis of teaching so that at the end of the workshop, they gained something that they can use at the clinical area.
Researcher: Ok...I wish to hear your opinions about intra-institutional collaboration.
PRL: Intra institutional collaboration?
Researcher: Ja...how do you see intra-institutional collaboration in implementing PBL?
PRL: I think that is very important because in our case our R425 requires students to do biophysical, microbiology, psychology and sociology. And with us this was a pilot and the other people were not offering PBL and not drawn in at the correct time. We are experiencing problems when such courses are not thought through PBL. Such courses should be led by our students, or bring in someone to teach such courses in our program through PBL in our schools. In other words in those areas where we need assistance, our service school should have been orientated on PBL, like humanities, science. And I think it is very important that the whole mind set of science service providers should be changed, because if you fail get some people involved from the beginning it may create resistance.
I think that whole scenario or the whole humanities should have started with PBL, especially in development of cases and scenarios. Because when you develop the case, people from sociology, should be involved to bring the sociological aspect on how to integrate or how to work together. So it is very much important for us to collaborate with our service departments and have same mind set. Because now I will end up having a student using PBL and going for sociology to do the traditional method.....

Researcher: Ok...you are referring to interdisciplinary approach. And what would like to see in such collaboration? Or what would be factors that contribute to success in such collaboration?
PLN: I think eh...eh... under what was discussed in collaborations between institutions. I think there is to be understanding between departments ehm...ehm... I don't know if you call that a MOU... There has to be some agreements...eh...some understanding of what you expect from your counterparts... I think that is very important.

P Male: I think we can also call those departments to come and facilitate the sessions or give students some lectures relating to biochemistry or sports maybe also with physiology and anatomy we can have those people to collaborate with. We can have written them that memorandum of understanding.
Researcher: Ok in collaboration or partnership those are factors or things that you would like to see, beside the memorandum of understanding. What other things would like to see happenings in this collaboration? I mean the attributes of a very effective collaboration. What would you say about that?

PUR: I should think in this collaboration, the most important thing is changing the mind set of people. Changing mindsets to say we are here for a common goal. Maybe for the betterment of our students.... It is not that a person is looking for her own benefit, but we are trying to look at the interest of the students. Therefore, we all have to bring our expertise and knowledge together towards helping the students.

We should ensure that no...no...module or course is better that more.....more... important than the other one. We should build our relationship to understand each other. There should be some good interpersonal relationships.... There should be some good understanding of the facilitators and so on.
And we should work together and agree eh...eh... we can even have meetings to see how we can collaborate, even if we want to test the students, we can evaluate the students together and integrate those aspects together, to show that there is a relationship.

Researcher: You have talked about good interpersonal relationships, can we expect that? What is a good interpersonal relationship? (38:56)

PLN: I think this will include things like respect, eh...eh...communication. In other words, the communication lines should be open. I need to understand to ensure that my understanding is the same as the other persons understanding. And acknowledging expertise of another person....

P Male: I think we should also define the collaboration as to prevent the role conflicts. It should be stated what is expected of me. The roles should be clearly defined, especially collaboration should be defined what is expected of me.

PRL: I also think in order for collaboration to...to... such collaboration to function we should maintain the momentum. To maintain the momentum...I mean...sometimes you find that there is too much attention to it and after sometime it just fades off. Nobody cares...where you have classes or whether you have got books. And...and the level of meeting also declines...everything. The attention is taken off. We should have a way in which we maintain the momentum. The...the...your regular meetings, your block meetings, your reporting and so on about metrology you have introduced. So...you maintain such momentum so that people are always on their toes about the method. Because it is very easy to slip back if you are faced with frustration and there is no body to assist you. So, the level of assistance, the level of momentum should always be maintained, so that the quality is still the same, because there is a tendency that if there is no momentum even quality goes down. We just have it in writing, but in practice you find that it is no more there.

P Male: May I also say, what do you mean when you say there is no momentum?

PRL: I mean...when it is introduced there will be these formal meetings, structures that is in-change.

P Male: Maybe we just need to say there should be commitment, if there is no more commitment what will you do?

Laughter from all participants.

PSM: Maybe let him say continuous in service educators and upgrading of all members, even the students.
PRL: Everyone there should be updated of all staff members or maybe twice a year. Nothing must be postponed.

Laughter from all participants.

The structure to me monitored the processed must be in place.

P Male: That workshop that we had at that place was very good. Even the people who know PBL were interested. The regular PBL workshops like the one held at NWU where most institutions are invited including the non-nursing educators or multidisciplinary team members were invited is empowering and developing
PRL: Uhm.... They were developed to bring quality.
Researcher: You were talking about open communication. Can we revisit that (44: 12).

PUR: Ya...ya...with open communication, we can have block meetings were you can discuss your problem that you may encounter...Let's say during the session or after that block you can have a meeting to evaluate how was the block. What problems did you encounter? What were the causes? Can we revisit some of the cases and so on? Such will ensure open communication. You know, if you've got a problem you can be helped. Sometimes, we are human, you can be sick, you can be absent...It should be known...it should be communicated that you know I cannot be in. Maybe I was having facilitation or you have gone to a meeting, or you have gone for training, then it should be clearly known about everybody's movement, e.g. It should be known that my colleagues are not there. Then you can handle his/or her group and so on. This will help...so that you can prepare yourself in time and you can revisit the case and go to facilitate. Unlike when you find out students are running around, they don't know what is happening. They don't know the venue, they don't know where to go and they don't know who to get hold of. They will say you colleague so...and...so is not in what should we do? (45:53). It means that when there is open communication we are all facilitated, we must report to one another.

At times you can find that you have eh...eh... like students can do feedback. Like you can say in your how you handled this, then you discuss that we handled it this way. Students can also contact you that in the other group they said we did not have this objective...and...so...on. It depends on how the students have deliberated. So now to handle such things. Those are the things that you have to jot down and have therapeutic meetings and those therapeutic meeting you can be able to deal with that.

PLN: I also think open communication would mean that you are able to approach one another with no boundaries. Eh...eh...you know that as colleagues, there are no areas such as no go areas. That is open communication. You know that if you have a problem, you are able to approach so and so without problems.

PRL: And again with open communication ... your ...relationship as colleagues must guarantee that I will be able to expose my point of view without being ridiculed. Because you cannot know everything, so we must related in such a way that there is no ridicule on part of the person who is bringing something to the table (Acknowledgement from all partners)

That will mean we have mutual trust, mutual respect. Those are the principles that must drive the way we relate as colleagues in this collaboration. Because of we do not have mutual trust, mutual respect it easily spills off to classes. It means that person can even comment negatively maybe about the objectives that came up from other tutorial staff or group...maybe saying that is not right. Then the students will let out and you will lose your credibility and your trust in yourself...(Acknowledgment by most participants followed by silence)
PUR: I also think active participation from the collaborating partners is very important for success of the collaboration. They must participate in the PBL curriculum planning , implementation, and evaluation of student performance. We can also involve our collaborators in scenario development, facilitation of tutorial and clinical learning plans and assessment.

Researcher: Alright maybe you should also give me your opinion regarding barriers in collaboration in implementing problem based learning. What do you perceive as barriers in this collaboration?

PRL: Funding (demonstrating with hand, all participant laughed)

PRL: Funding, funding. I think that it is the main barrier.

PLM,PSM,PUR,PJR: ...uhm...uhm...ja...yes (Acknowledging the comment by PRL)

PRL: Because if you are introducing a method, you want to bring stake holders together ...how do you take someone from Kwa-Zulu Natal? That person can not come here from far because you are the people who need him, so the university as an institution must commit funding this collaboration, to run that project or that system. You cannot call someone from the clinical area and not even give tea and lunch. Maybe the clinical area will not give transport. And I cannot use a taxi and use my money to come and help you. I think there must be funding involved. Even if we are not taking them out of their institution, we are going to do workshops; there must be paper for handouts, and so on. I think funding is a number one barrier to collaboration.

P Male: Chelete...Chelete (All participants laughing) Money, money PUR, **PSM**...Chelete is needed.

PLN: Also about infra structure. I think if we don't have classes, those tutorial rooms you are supposed to be having, laboratory equipment. It is difficult for students to be accessing the library that becomes a barrier.

Researcher: uhm...uhm...

And also with the facilitators (51:44)

PLM: As already indicated, this is like labour intensive strategy. For you to be able to succeed in PBL, you need facilitators. So if you are short staffed, it is really a barrier. Because it means you cannot implement PBL the why it is supposed to be done...eh...eh...ja...facilities.
P Male: Staffing...is it related to collaboration? We earlier indicated that collaboration should not be only with people who already have facilities; it should also be with lesser groups, so that we can learn from them how they manage with their problems. Is it not it?
PUR, PLM, PSM, PJR, PSM: ....ja...ja... (Acknowledging the comment)
P Male: Because if we collaborating with another university, e.g. if UNIVEN is collaborating with another university, then we will be sharing things facilities, staffing. We will also experience hoe they also manage some of their short comings in spite of their short comings. Will that be a challenge to collaboration?
PLM: Ok...ok... I hear you.
P Male: We need money to collaborate, is it not that we need money to benchmark or whatever.

PRL: It is collaboration in terms...in barriers in terms of installation to collaboration.

P Male: I am just trying to like...your point. I don't see your point of shortages of staff being facilitated...how is it like a problem in collaboration?
PRL: I was under the impression that in this collaboration, we might be able to share these things.
PRL: If I am hearing what you are saying he is saying collaboration will help us to know how other people are managing without resources. Because we say we must collaborate with those with resources and those that are under-resourced. And collaboration helps us to know how the other people are managing.
P Male: The question is what problems in collaboration.....are..
PRL: What are the barriers in this collaboration?
P Male: Yes, that is the question.
MP: Yes..i am trying to dispute the point on resources as barriers to collaboration.

PRL: Yes she is talking about barriers in implementing problem based learning and not barriers in collaboration.
PSM: But, I think shortages of staff, you remember one time or the other one of my colleagues mentioned that.
All the staff...in...eh...especially when we talk about the inter collaboration- like all those who are servicing us...a;; the staff who are servicing our department...if they are short staffed they are sending only one person, and if that person is not available ...do you see in the long run it will also affect the collaboration.
PUR: oh...the receptiveness of the other department in becoming part of the collaboration, If the other department is not fully receptive to become involved in the collaboration, this can also...you know...be a barrier and a problem in collaboration (55:46)
PRL: Even power inequality. If ...if...if ...in the collaboration relationship, there are people who are having more power than other people. Let say we go to..go...to collaboration with people in the clinical area and pose as if we are in the upper... we are of higher power. Inequality is very important because we can become a barrier. For instance, if we are doing a workshop they perceive you as if you are in an authority position, like come in and let's joint it. We must not be dictators...because if there is no that the power equality then people might resist, even if your workshop people ensure power equality.....

Researcher: Please allow me to rephrase the way I understand you. Are you referring to non-hierarchical relationships with you collaboration?
PRL: And...and...and...I don't know
PUR: We mean...not coming as dictators. You know there should be no dictatorship. There should be you know equal partnerships '
PRL,PSM.MP Nodding (*acknowledging what was said*)
PJ: When coming again to issue of resources we can rephrase it to say that...collaborating resources should also have resources that will be used by the students when we send them to their institutions. Students should not have to come to have access to the library only when they are here at the educational institution. The resources should be there in the collaborating institution. Like there should be computers, there should be books in the hospital. Not the students should see them only when they are here at the college.
Researcher: Thank you for that, this has reminded me that a question that I wanted to follow up on collaboration especially on contribution. One of my colleagues talked about collaboration contributions? Can we get back to that?
This is promoted by statements that collaboration must have facilities. So what are the other contributions that the collaborators must bring in this collaboration in implementing PBL? You earlier talked about knowledge and expertise... what else in your opinion?
PRL: The resources such as a library that are talking about, especially in areas where we send our students.
Researcher: Are those facilities accredited where we send our students?
Simultaneously, Yes...from all the six participants.

Silence.... Silence....

Researcher: Are there any other things that you need to put in this collaboration that I might be missing? Because here I have:

1) The need for Collaboration
2) The key collaborators
3) The benefits of collaboration

4) The barriers in collaborating and, success factors for collaborating, barriers and how to formalize or structure this.

Silence...silence...

Researcher: any additional opinions that I might be missing?
PRL: Barriers include poor relationships...
Researcher: Poor relationships? Can you please unpack that....
PRL: Poor relationships between collaborators. For e.g., if you don't communicate it is not healthy. You must strive towards a healthy relationship. You find that the people in the hospital...if the relationship is not healthy, they don't approve of you. And...and...and maybe when they have problems with students they don't attend to the students problems towards achieving successful solutions.

They attend to students problems towards the direction of not having the students anymore. I don't know if you understand what I mean, or trying to say. Working towards stopping the relationship or their relationship with you...than when a student is doing something wrong. We must work towards assisting students to become something better. You find that the professional nurses, in the ward..... when they have problems with students in the ward, their main focus is not having the students in the ward anymore. This because of poor relationships

Like...last week we had a student who had a needle prick, which is normal. Is it not normal to have a needle prick?
PUR,PSM, MP, PLM...It is normal simultaneously, (agreeing with PRL)
PRL: But in this case the hospital staff said they will not accept students any longer. They say the students are not competent. They say "How can they have a needle prick when they know to give and injection?" Can you tell me that professional nurses can never have a needle prick?
Researcher: Is that there is a needle prick because of the problem?
PRL and **PJP:** Yes
PRL: ...ja... you know you don't work towards one goal.
MP: What has competence has to do with competence? Well, no comment.
Researcher: Ok...colleagues, I think you have given me enough information to look at. Please open your doors for me when I come back to verify certain issues.
I might think I have all the information, but when starting the analyses or transcribing, then you realize you are missing something.
Thank you very much. Please allow me to come back to you, even telephonically when if think there is a need to do so.
Please appreciate the traveling to this side is not a child's play.
PRL: Yes we know, it's almost 800km to here.
Researcher: At this point in time I would like to know, if you have any questions for me?

Silence.....

MP: I must confess, this is my first experience of focus group interview or discussion. That is why at first I was quiet. Thank you. Honestly, this is my first experience. All my students were quantitative.

Thank you

Tape Stopped.

Appendix K: Individual Interview Transcripts of Nurse Managers

INTERVIEW TRANSCRIPT WITH NURSE MANAGER

Date : 02 .07.2011
Venue: manager's res
Age : 55 years
Gender: F
Experience in nurse: 33 years
Experience as manager: 15 years
Involved in PBL: Workshops

R:- Researcher

TMM: Participant

R: Good evening mam and thank you for agreeing to participate
TMM: Good evening and sorry for not honouring Friday's appointment. We were very busy in the ward
R: Ok it is understandable. As I said, in this interview I also have to ask you permission to record this interview. As much as I need to record, I must get you permission to do so. Again, I also need your permission to sign consent for participation. I would appreciate if you may sign this consent form if you agree to participate.
R: The main question is find out about your opinion regarding collaboration regarding implementation of problem based learning
TMM: There is a need for collaboration because of shortage of staff in the services. There is a need for us to work hand in hand
R: Uhm..... Uhm.....
TMM: Working hand in hand as unit managers and nurse lecturer will help in assisting students with learning issues. For example, if we are busy in the wards or hospital and we can't reach the students with collaboration nurse educators can be of help. We can also fill in the gap where there is shortage of educators to teach a particular aspect. You can also fill in a gap where there is shortage in the clinical services to teach or accompany students. What I mean is that we can also give cases to present in the ward situation. This will help to produce a well-rounded graduate. Collaboration is really necessary and will be beneficial.
R: How beneficial? What are the benefits or strength of this collaboration?
TMM: I did talk about collaboration strengthening theory and practice. In other words, it will assist in ensuring that students are able to integrate theory into practice. I also think we as managers will be able to learn more about the subject. We will also learn more about new developments in health care service. I think if we collaborate, we will be able to share information and expertise. For example, in Midwifery, there are new guidelines which are developed. With collaboration, we *(the nurse manager)* can be able to share with you. We also have different midwives with different expertise which will be able to share such expertise with you as nurse educators. The advanced midwives can collaborative or work hand in hand with nurse educators in designing case studies or scenario. They can also be of help in teaching critical midwifery skills and evaluation of students. Those advanced midwives can be also be invited to do presentation in class settings
R: In your opinion, who can be collaborators in implementing PBL?

TMM: You mean in the hospital?
R: Yes....any collaborators you may think of.

TMM: I think all the managers, for example the operational, middle and top managers. Our CEOs must know about collaboration. The operational managers need to be the number one collaborators. This is because they are the ones who are in contact with students on daily basis. The top and middle management should also be involved. They need to buy in this collaboration so that when we need anything they should be able to provide and support us. What it means is that all levels of management in health care setting need to be involved in this collaboration. As managers we need to be involved so focus should be students). We need to empower students to be able to work with others, solve problems in health care settings, and think critically and independent learning, as well as communicating.

I will also wish to see members of the multidisciplinary team being involved in this collaboration. I am referring to people like medical doctors, psychologists, pharmacists and social workers. During our multidisciplinary team meetings and ward rounds, these professionals provide teaching to the PBL students. Most clinical projects of PBL students require information from the MDT. I mean the multidisciplinary team members. In my ward for example, some doctors would request the university students to do a presentation. I also believe that every professional in the clinical setting has the teaching responsibility. That is why I strongly believe they need to be part of the collaboration. They will assist in the development of rich scenarios as well as clinical assessments. Pharmacists will also be helpful in developing scenarios for pharmacology. Doctors can be helpful in developing Primary health care scenarios, whilst psychologist may assist in developing scenarios for mental health.

TMM: This collaboration should be formalized. *silence....*
R: How can this collaboration be formalized?
TMM: We can have our meetings as collaborators regularly, have workshops where the service people can be developed on problem based learning. Meetings of clinical people and the tutors or nurse educators are very important. For example, problem or challenges that we have identified in students during clinical learning, we should be able to discuss or tell you about them. You also as tutors when students are coming to clinical services you should be able to brief us and clarify what is expected from us as managers or service people.
R: Can you tell me about relation in this collaboration?
MMG: Like I have said, we need to have regular meetings, e.g., monthly depending on the need or fortnightly or quarter yearly according to the need. We should really meet regularly and communicate.
R: Can we elaborate on communication in this collaboration?
TMM: We can communicate through meetings, memos emails and notices or faxes to each other. We should be able to give each other report and feedback on this collaboration. For example, when students are sent to me for clinical learning I should be sent a report. I also have to send a report during month end about the students who spent time in my area. We in the clinical area, we can also test the students. Beside end of the month evaluation, we can also evaluate the students, e.g., we can give the students some tasks, and evaluate them and give them marks. We can allow them to make presentation.
R: OK ..... In your opinion, which factors can contribute to the success of collaboration in implementing PBL?
TMM: I think understanding of this problem based learning. If we are developed well on this problem based learning so that we understand. We will definitely know what students

expect and we will be able to support, mentor and advise them. For example, all the learning objectives you send to us, we also need to align ourselves with those

R: How and when should you be involved in this problem based learning?

TMM: We can be invited during the planning stage. Even if students are not there, we can be invited for training on PBL so that we can align ourselves with that. This will help us to collaborate and cooperate, because we would know what is expected of as.

R: You mentioned collaboration in evaluation if students at the end of the stay in the clinical services. What other ways can you be involved?

TMM: Normally we give students tasks on daily basis. We also give tasks to present in the wards. When there is something, not done, we normally add. We sort of give feedback. Even as we do demonstrate to them wherever that needs practica.... We allow them to identify patient problems and when it is calm we ask them to discuss how they will manage a patient with such problems.

R: Uhm.....Uhm.....

TMM: I don't know what is done in general wards but in midwifery this is how we do that. For example, with a patient with eclampsia we allow the students to set the patient how she present. Later on, they have to give the management of ecclamisia. We sometimes involve them in emergency drills.

They also take rounds with the doctor

You also do spot checks when they are doing procedures you check if they are doing the correct procedure

OK: In the collaboration or partnership, what could be factors that contribute to failure.

TMM: I think lack of cooperation. ..... If we are not cooperating well..... If managers are not fully participating or buying in teaching of students..... Especially as managers, if we focus only on shortage of staff and not looking at the learning needs of students. These can make partnership to fail. The managers must see the need for collaboration in teaching of students. Again, blaming of each other particularly the service staff and nurse educators..... If we say they are doing this that. Finger pointing always lead to lack of cooperation....

If we are not talking one thing or same language, this can also lead to failure of collaboration. I mean if you are not knowlegable of what is expected of you in PBL, you are likely not to collaborate and cooperate. We have to know 1, 2, 3, 4 of PBL so that when students come we are able to help them. You also as nurse educators must continue reading to be expert in teaching. You must continue learning about what is happening in clinical setting.

R: if I hear you will, I am correct to sum you as saying

(1) We must set goals together.

TMM: Yes we must have one goal; have commitment to the goal and collaboration. We must respect each other, we must understand each other. This is very important in collaboration. If there is new information, we managers in clinical services we must cascade the information, continuous training on PBL.

R: if I sum you well you are saying:-

(1) We should set the goals

TMM: Interjecting

- We must set the goals
- Be committed to the goal as collaborators
- Set the roles for each other
- We must respect each other
- Shrive for one thing all of us

- Love for expertise

At the end of the day, the students should be well developed through our goal setting. They should be well trained.

R: When you say we should look for expertise, what do you mean?

TMM: In midwifery we have consultants like advance midwives like an ordinary midwife. For example if in collaboration we need any other issue, we should consult that advance midwife. They will give us expertise in scenario setting, teaching special areas and evaluating students in midwifery practice. They will be of great importance in developing those students. Advanced midwives should be involved in all aspects of PBL

R: Uhm.....Uhm.....

TMM: The advance midwife should at least be involved in PBL curriculum development and review, invited to come and present or facilitate in class and in evaluation of students. We should also be part of planning learning opportunities in order to see if the learning issues are relevant and realistic. I mean, we should be able to see if students can be able to do or learn the issue in a very short space of time. For students to learn the issue, we may ensure the available skills and support in the services

R: Uhm.....Uhm.....

TMM: In midwifery section, advanced midwives can do well in collaboration of implementing PBL in nursing education. They are knowledgeable in many things. Management of most midwifery problems, they are competent in that. They have more skills than ordinary midwives. They can resuscitate, perform scans, they are also more technical. That is why even their performance management tools they have are for technical skill evaluation.

R: In your opinion, how do you perceive the role of the university in this partnership? Or collaboration

TMM: You mean the university?

R: Yes what you do expect from the university in this collaboration regarding?

TMM: I think they must be visible in following up students. They must come the clinical services. We must also strengthen the mentoring aspect. They must strengthen communication with the service people. For example inform us about students coming to the services. E.g. Inform us timeously every level of students they are sending to the clinical services. This must be done so that we can be able to prepare for students.

R: You mean joint planning?

TMM: There must joint planning for the students in the clinical services. This will make us understand and know what is needed.

If there are new guidelines, we the service people must orientate and share with you the information. This is to make sure that you are par with the new developments in health care

R: Did we talk about the barriers

TMM: Yes

R: Ok let me summarize what you have said. If I heard you well you said

We must set goals together

(1) Agree on different role of collaborators
(2) Communicate regularly using meeting, e-mails, memoranda, telephone
(3) In the relationships, you said we should respect each other;
(4) Inform each other

R: How should the relationship be?

TMM: It should be a mutual relationship. It is to be mutual. We should be honest to each other. For example when you as a nurse educator you should feel welcome when you come to the clinical services. You should feel home, you should not feel like an island. That is why I said we should respect each other.

R: And other thing that you want to say regarding collaboration or partnership?

TMM: Like I said earlier, our top management should know about this collaboration. If possible, they should also be trained on PBL. They should be informed about PBL so that they know and be able to offer support at operational level. Education and training on PBL will empower all collaborators to effectively implement PBL at both clinical and classroom setting. I agree and acknowledge that they know that students are being placed in the wards for clinical learning. But eh.....eh... they should know that they should play a part in development of the students. For example if as a midwife, I am requested to teach neonatal resuscitation; management should corporate and allow me to go to the nursing education institution. It should not be a problem. The top management should release me as an advance midwives to share my expertise with the students and nurse educators. Top management should know ..... they should know the importance of collaboration.

At times we have problems when we are to assist the college and university for example

TMM: OK if is understandable

They should be informed about PBL so that they know and be able to support at operational level. I agree and acknowledge that they know that students are being placed in the wards for clinical learning. But they should know that they should play a part in development of the students. For example, if as a midwife, I am requested to teach neonatal rescusitation, management should cooperate and allow me to go to the nurse it should not be a problem. The top management should release me as an advance midwives to share my expertise with the students and nurse educators. Top management should know they should know the importance of collaboration

At times we have problems when we are to assist the college and university. For example, when we were developing advance midwifery curriculum, top management was not keen to release us. If we have to go to different places for curriculum development, we were not getting support from to management.

I think if we have a written agreement to collaborate which is signed by top management, things will be easy

I believe if top management understands they will give a better support in participating in nursing education issues such as collaboration in PBL implementation

R: If I summarize you will you are saying support from management is very important

TMM: Just like you in nursing education you need to be supported by top management for collaboration

R: Uhm .... UM .... You know what, I am still going to listen to the tape and try to analyse the information. Where I get stuck, I will still come back to you for verification any further information . Please open your door for me

TMM: Ok there is no problem

R: Do you have any question for me?

TMM: For now, I don't think I have any question. Not now

R: Would you like to be notify about the project, or given the transcript of this interview

Im Just-------

R: Ok I will sent this – thank you

Appendix L: Focus Group Interview transcript from the Nurse Managers

INTERVIEW TRANSCRIPT WITH NURSE MANAGERS AT HOSPITAL X

PARTICIPANTS NUMBER: 8
GENDER: MALE = 3
FEMALE = 5
BLACK = 6
WHITE = 2
HIGHEST QUALIFICATION = POST BASIC DIPLOMA
LOWEST QUALIFICATION = FOUR YEAR DIPLOMA IN NURSING

R: *Following my request, introductions and agreement to participate*, I will record as agreed. The questionnaire will be filled after the interview to save your time. I don't want to waste your time by taking your time from your working stations. Can we start?

P: Let me start by saying yes, there is a need for us as hospital managers to collaborate or be in partnership with the university is doing. For example, collaboration in implementing problem based learning. So.... Yes there is a need that there must be collaboration. If you are using PBL at the university, and when you send students here, we must assist them by using problem based learning so that we do exactly what they are doing at the university.

R: Ok, what are my other colleagues saying this collaboration. What are the views of the colleagues?

P2: I think collaboration is needed because in each and every institution, they are problems. We need to tackle those problems jointly so that everything should go well. The students and the managers should be part of collaboration.

Silence

R: Any other person who want to share his or her opinion

P1: Again in collaboration, I think the university people must come and orientate us on problem based learning so that when we assist the students we know what we are doing. Because, we might not have all the information or be conversant on how to implement PBL when the students are in the clinical area or placed in our units.

R: Uhm...

P3: I should think when students are sent to the services should come with the learning objectives formulated jointly by nurse educators and managers or professional staff so that it is easier so that it is easier for the managers to guide the students

Silence

R: Uh...um...What are my other colleagues saying?

P4: Collaboration is really needed as Sir X has already indicated. Sometimes students just do learning objectives given by their lecture and they are done. They don't learn further about other things

R: Your comment Ma'am

P5: I agree with my colleague that collaboration is necessary so that students can come with objective that we had an input or saying through collaboration. Because if we do not do that, you find students coming to the services relaxed until their lectures are coming. They should be guided by all of us.

R: Do I hear you well to be saying you and me through collaboration we can insure that students are well guided?

P6: Yes...I think with collaboration we would be able to solve student's problem jointly and be jointly responsible for what the students are doing.

R: How would you want to see this collaboration working?

P: I think for this partnership to work, all nurse of all categories must be given in-service training on PBL. This includes nursing assistants, staff nurses and professional nurses, assistant directors and nursing managers. Actually, all those who are supervising student nurses must be taught problem based learning, so that we all know what we are doing when we talk to the students. The benefit is that when students complete at the university, they know how to help other students with problem based approach

R: Who is supervising PBL students in the clinical area?

P7: It is supposed to be professional nurse or assistant directors, but we know at times the professional nurse will be alone in the ward with more staff nurses and five assistant nurses; they are also working with student's nurses. They must know this problem based learning very well so that when they interact with students, they must know what they are doing. The assistant nurse and staff nurse will still need to teach them this problem based learning.

P2: I think ...eh...the university or the educational institutions that sent students here must have preceptors to follow these students in the clinical areas. This is because most of the time there is shortage of staff in the wards, and the in charge cannot do all the work, namely, giving attention to the students and to the patient. It is too much for the sister in charge.

R: So, if I hear you well, you are saying the partners should be the professional nurse, the preceptor and the nurse educators.

P2: Yes, I am saying the collaborative partners should be nurse educators, nurse managers and preceptors.

R: Any other thing?

P1: Once there is partnership, there is going to be quality patient care. Patients are going to receive quality. This is because what we are teaching them at the university they are going to continue with it in the wards. They will be no complaints from the patient because they are going to receive quality at all the times

R: In other words, you are talking about the benefits?

P1, P2, P3, P4: Yes

R: Ok...can we all share opinions regarding the benefits of collaboration in implementing problem based learning

P4: It is quality and also students will get experience. Because when they are trained then will see collaboration and we will show them how to do work. Experience of collaboration will be gained as well as work experience. The how part of doing the work is very much important if we collaborate effectively.

R: Uhm...

P5: Even the institution has cost containment whereby...eh...eh...because of the learners maybe who have more information about what they are doing, the hospital is not going to lose more. Maybe if we have shortage of staff, collaborative partners can be called to assist. We will share the resources for training students.

R: What else can we benefit from this collaboration?

P1: Consistency. I mean consistency in teaching students. Like what is being done in the clinical area.

P6: The students when the complete their studies, they will be knowledgeable about collaboration which they observed and seen during these training. They will be able to work appropriately with the multidisciplinary team members.

P3: Even the students themselves are going to benefit because if you teach student by problem based approach, eh...eh...and when, they are here in the clinical service, are also going to be given problems to solve. So they are going to be more confident when they work on profession.

P4: Students will be well skilled and they will be empathetic towards the patients, because they were skilled. Here in our institution we have mentally retarded patients. They will have mentally and skilled on how to nurse these patients in totality. (*Additional two male participants entered the room.)*

R: Ok, let me interrupt you by welcoming the two gentlemen who has joined us. Let me welcome the gentlemen and quickly brief them why I am here, so that they can contribute to our discussion.
Good morning gentlemen. I am Mrs Rakhudu and I come from North West University (Mafikeng). I am here on a mission to collect information on data collection. I am a student at North West University following PHD in nursing education. I am interested in problem based learning, particularly collaboration or partnership in implementing problem based learning or in teaching students through this PBL. Why here?
This is because Witrand Hospital is one of those hospitals where we place our students for clinic learning.
Thus, we thought there will be valuable information coming from this institution regarding collaboration or partnership in implementing problem based learning. What is collaboration? E.g., the need for collaboration, how the collaboration should be, who should be partners, how this should be formalized, what would be the benefits and what would be barriers to this collaboration? This will help in development of a model of collaboration, so that one can say collaboration from those institutions should be like this. From the research, I should be able to say people wanted 1,2,3 and believed that collaboration should be like this. I am going to use two methods of data collection; one is Focus group discussions and questionnaire. Participation here is not compulsory but voluntary and being not compulsory, but as a researcher I am appealing to your participation because I value your information. I value your input in what I am trying to do. The other method is filling of the questionnaire to mix the methods. I am also going to record the discussions, because I cannot remember everything from my greying head or brains to say one said this and the other said this. So, it is all about that. May you please participate and there is no time limit. I am assuring you anonymity during the discussion and let us address each other as colleagues. Even to say this information was from hospital X there is no-where that is going to appear. I am only going to indicate that information was from clinical facilities where we place students and universities that are offering PBL. This is because PBL is a teaching strategy that is not used by many nursing institutions in South Africa. Only 5 universities are offering PBL. I visited some of them to find out what are their views or perception. In this, it cannot be only nurse educators, we need to involve professional nurse who are people guiding students in the clinical areas; in other words, people who are guiding, mentoring and facilitating learning in the clinical area. Once students are placed in your ward, they need to know what is happening in your ward. Even if they come with own objectives, the ward objectives is part of learning because they are there to learn what is happening in that unit. That is why I felt your information will be very valuable. Can I continue?

R: I need to know your opinions regarding the need, the benefits, and the how about this collaboration. Can we go on?

P7: So to be clear, what is the problem based education

R: Problem based education is the strategy that is used to teach the student. In problem-based learning, we use problems to teach students, e.g., we can have a scenario about

mentally challenged person which we can develop together probably and with that they have to go and learn about that condition themselves. We have to guide the student. The colleague or the universities alone cannot win, with collaborators probably we can. That is why I am here to get your opinions regarding collaboration that is your views regarding collaboration, that is if necessary? Why is it necessary? How should it be? And what could be the roadblocks? Those are the things I am going to require from you to share? That is why I need you to talk. There is no time limit for this discussion.

P7: Ok. Another opinion like we said there is a need for collaboration. Yes...When the university develops study guides they should involve as, that is the professional nurse in the ward. So that we give you real problems or real scenarios that you can give to students. I mean collaboration should start from the beginning. Let's say you are giving student scenario at the university. Those scenarios must come from us. We must also be part of the teaching committee or whatever structure is there for collaboration in development of scenarios....so that we can know what is happening ....so that when they come to us, we know our responsibility or what we are supposed to do, or how we are supposed to assist the students.

R: Uhm...uhm....What are the other peoples' feelings?

P5: When students come here, if we have already collaborated with the lectures, allocations should be done collaboratively or jointly, according to the students' needs. When they come to the clinical setting, they come with the objectives, then we follow those objectives but, we can give students scenarios to work on those because, we have most of the things that are needed by the mentally challenged children. Like we have the snooze-land, we have the OT, stimulation in clinical learning, they can learn something.

P6: I think we really...really need to collaborate. At the university, they do the theory and when they come to the hospital, it is actually where they see practice. They see things really happening...they see things really happening...they see things practically know. They have to express what they learned there. They must come and apply it in the working situation.

P2: And again, university educators or lectures must follow up their student to see if really we are supervising the students well, especially in terms of problem-based-learning, and even when finish their...eh...eh...for example, when they coming here for one or two months the nurse educators must come here to get the report from us to check if we gave students the problems that are appropriate. The issue is that there must be this collaboration. We must work together with lectures from the university.

P4: I think we must have preceptors to follow these students sometimes, these students...they stay away and do not come to work and this creates a gap. Like I said the preceptors will be the ones to collaborate immediately. Without using phones, thus preceptors will take names of those students who stay out of work. The preceptors will be able to deal with the matter immediately.

Silence

P1: Do you mean the preceptors that are working here or must be sent by the university?

P2: Yes, they must be sent by the university. They are the ones who know the ones who know problem based learning

R: Ok, if I summarize you well, you are saying you will correct me, preceptors need to be partners? They should be partners. Ok...why should be the key role players in this partnership?

P1: I think nurse educators because they are the ones who better about this approach. They must teach & lead us this PBL.

P2: (*Interjecting*) we are supposed to welcome the students neh, and the place them in the different wards where they are allocated. Furthermore, we have our own students here and are under the college X and must ensure that students get first preference
The students in the wards are introduced to operational managers & they are the one to teach students

P7: (*Interjecting*) I was under the impression that when we collaborate we are going to work as equals and no one should get first preference. As collaborators we will be looking at issues such as allocation, e.g., we would say, now we are doing allocation.

P1: Because she mentioned another college, now I am asking. Now, when they are in my ward, am I also supposed to supervise those students according to problem based learning? I don't know whether they are using problem based learning at their college. So...I don't know. Are we to apply this problem based learning to students who only come from your university and not to students who are coming from the colleges? Like the one that my colleague mentioned?

P4: No, we treat them the same

P1: Meaning the college is supposed to be part of the collaboration?

P8: Yes. I think the learning objective from the college and the university should determine which method. E.g., we have different units in the hospital. E.g., substance abuse and those mentally retarded patients. They come from different institutions and there is where we have the problem.

(19:58)

R: Yes, I hear you people and we have identified nurse educators as collaborators, we have identified ourselves as manager and we also identified preceptors as collaborators. Are you saying we include the colleges? I want to hear it from you.

P3: I think we should include the colleges because there was a time college X send most of the students, i.e., 60, and college Y students were here, and you could see the confusion. I think we should come together and decide on allocation. Students should not be sent in one month. Because there will be chaos. I should think we should arrange our things and jointly make a plan for the first month of the year until the end so that they should be chaos.

P5: This is where the study guide issue comes in. You will find that at the university students will do some of the conditions during the first semester, and you find that at the college will do in the second semester. You find that the students are not at the same level.

P1: To add to what my colleague has said, in this collaboration, we need all the universities and colleges must come together to allocate students ad agree on what approach to use when we supervise students, what problems are we going to give to students and by that time we would be having study guides like she mentioned, and we would be knowing that we are part of those study-guides development. We would be knowing that students from this university are to cover 1,2,3 when they are here (22:43). We are saying all universities and colleges must at least at the beginning of the year come together, sit down with us like this to plan very well on how we are going to allocate students, and how we are going to work with the students.

R: Ok, let me summarize what has been said. You said we need: educators, the managers, preceptors and the colleges & we require...

P2: (*Interrupted*). We need to plan together

R: Uhm... What else should happen in this collaboration?

Silence

R: What are your views regarding on how the collaboration should go on?

Silence

P1: I think we should have a committee of the NW Province which will lead this collaboration. They will be the drivers of this collaboration, and this people should meet twice or thrice a year. Every time they should give us a report or minutes on this collaboration. They should update us on what is going on, what is expected from us. Even the students who have completed, we should know that the students who were placed in our institutions are now graduating, so that we can also ask to be sent or given Mr so and so to come and work with us on completion; because those students were able to solve problems that were given to them during learning.

R: Umh...Ok, besides planning, how would you like to see managers participating in this collaboration in implementing PBL? In what other activities would you like to see managers participating in this collaboration? Managers I mean us in here.

P7: Like I have said, it all depends on the college and the university as well. The managers should be updated about problem based learning and scenario's through workshop training
We are also updated on what to expect from students and what are we to do for them. (26:13) the students should bring their learning objectives along. Information should be disseminated to all partners.

R: I agree, I want to go back to the question "What are other activities where managers want to participate in this collaboration? I agree you mentioned that we plan together...and what else?

Silence

P3: I think we should have a list of names and contact addresses & phones of the university lectures, so that when we have problems we can contact each other.

R: Ok. Will I be right if T say you mean communication?

P3: Communication yes.

Silence

R: How this communication should be?

P8: Communication in collaboration should be by phoning, writing reports, e-mailing and by face to face meetings where we would be able to discuss and interrogate collaboration issues.

Silence

P9: I think the collaborating college should communicate through the Department of Health; if people can be conversant with what they are expecting. The college should direct the information to the clinical services. The colleges are driving force of education of students. They must tell us what to do.

R: Ok. That is why we are here to say let us get your opinions regarding collaboration in implementing PBL. Let's get your views regarding this partnership. I appeal that we should tell how best we can do this.

P3: Respect. We must respect each other as partners. When we are in collaborative meetings we should respect each other, we should respect the meeting. Things like punctuality must be respected and maintained at all times in this way, it will make our collaboration work better.

R: So you are saying respect is important in collaboration. Is this what you are saying?
R: Ok, what else is important?

Silence

Participant 1 raised a hand. Asked to give others a chance

P1: It seems you are monopolizing. What are the others saying? You just talk we will give you a hearing
P2: I think cooperation is very important in this collaboration if we work together and understand each other we will be able to help these students (32:28) in problem based learning
P4: There should be skilled people. Skills are needed in collaboration, because we (managers) specialized in clinical areas or the wards. People should be skilled in this cooperation in order to share information with the learners and partners. So that we can put practice into theory, Oh...no..no..no theory into practice
P1: In-service training about this problem based learning it will be an important thing to us. If there is something new with regard to problem based learning, we need to be informed. We need to know so that when students come to us, we know what we are doing.
So there must be continuous in-service-training of clinical staff as collaborative partners
R: If I summarized this you are saying there must be:
- respect
- Cooperation and understanding
- Open communication
- We should have skilled people

P1, P2, P3, P5, P7 = Acknowledged by adding
R: Ok. What other things should be there or collaboration to work successfully
P4: Even resources need to be there for collaboration to work successfully. When students are allocated in the services, we must have resources
R: What type of resources? Can you elaborate?
P4: Equipment, stationary ....uhm...Laughing...I am thinking of something.

It can't just come out (35:10)

P5: Ok. It is like for instance when students are coming & let say in mental retard patient and we talk about the different types of mental retardation, there... must be there. They must see that. They must be able to see the different types of mental retardation. So that when they write examination, they must recall what they have seen
R: Ok. Those were the success factors. Are they all? What else do we want to see for this collaboration to work?
P3: I think we must also have a good library, good information for students to be able to refer.
P5: May we need a library so that when we give the students a problem to solve they must be able to go to the library and search information in order to solve the problem. And be able to present to us the information.
P2: The library must be within reach eh...eh...The library must be accessible, so that when they come, we should be able to guide them in the library and where to get books and information.
P1: The student themselves must be cooperative when they come here. They should be told at the university to cooperate with us when they come here. Because, I know they do

problem based learning of the university and when they come here they do as if is something new to them. They must be told that when you go there (clinical services) you must cooperate in order to benefit from those professional nurses in the hospital

R: Ok whilst still there, may I ask this question, what your opinions in regarding students as collaborators in this partnership

P7: I think student should be involved eh...eh...

P1, P2, P3: Can you please repeat the question?

R: Ok, my question was "What is your opinion regarding students as collaborators here? Is it not that we had about 4 collaborators, and I hear you saying students must also cooperate. So, my question is what is your opinion regarding students as collaborators

P7: I think students are the drivers or the engine of this collaboration, because without the students, collaboration won't exist. Even now we are here because of the students. So, they are the first important people who link us and make us to work better.
They must the first people to know the problem based approach, and when they come and they don't cooperate. They must be well orientated about problem based learning so that when they come here and when we assist they'll be able to learn better. But if they don't cooperate with us when trying to implement, that is going to be a problem. Even the collaboration is educate all people on PBL, all the staff nurses, assistant nurses, assistant directors and nurse managers must know this problem based learning very well.

R: I don't know if I have to rephrase my question. I am saying what is your opinion regarding students being partners in the implementation of PBL. I hear what you require from the students. They have to cooperate, & the need to be orientated. I require your opinions regarding students as collaborators here?

P8: Yes. Students must be initiative, must be prepared to look for information, and to identify the problems so that they can learn on their own how to solve the problem. They themselves should learn how to solve problems from theory to practice. Because if they come here and they don't know what problems to get.

P3: I should think that when sending these students here, we must have the names of the class reps, so that if anything that happens in the wards, they should be able to phone us and tell us or the preceptor should have direct contact with the class-reps. The class reps should be the collaborators to us or to the preceptors and be able to communicate that information to the university.

R: Ok. Can I hear your opinions regarding barriers or roadblock...oh...do you want to say something?

P7: Yes, When students come here, will be based on the curriculum they are following. Here they are to experience what they learned in class. I think we should be told when students are coming and what to expect.

R: So students are to be collaborators, is that what you are saying? Ok, the next question is what do you perceive as barriers or roadblocks to collaboration in implementing problem based learning. What would make collaboration in implementing PBL fail?

P1: It is when the university isolate us, or do not involve us in most of the things that are happening in the university for example if there are changes in this Problem Based learning, they should come to us and tell us, and say there is something around problem based learning itself and this is how we are doing it. They (university) should keep on communicating with, they should keep on coming to us to update as on whatever is happening at the university. If we sit here and a year passes without a meeting then collaboration won't work. They should respect us.

P5: The University must work together with the managers. Keep them abreast on the new things added to the student guides, and what they expect from the students. They should also indicate what they expect from us.

P1: Because we change employment now and again, the new staff members need to be trained on PBL so that they are bale to assist students. Otherwise all staff will go and new people won't know what to do regarding collaboration
In this problem based learning please, come and give us in-service training on problem based learning, especially our new staff. Even staff and assistant nurses need to know PBL. At times we send them to school, if they know problem based learning whilst they are still assistant nurses, by the time they go to the university, they will know it better. They won't straggle in their studies. When they come to us in the clinical services, they will excel and as professionals, they won't have any problems.

P2: And it will fail again if the students come here with the mind-set that they are from the university and undermine people they are working with, e.g., saying this one is from college and this one is from the university.

P3: It goes back to lack of respect.

R: Ok, I tried to capture your barriers, one was: - Sudden changes without involvement of you, poor communication, lack of respect, lack of....

P4: *(Interrupted)* Lack of skills

R: Ok. What else?

P8: Lack of initiative and just copy from one another.

R: Ok, Lack of initiative from students. Can you elaborate on that?

P8: Ok. Like if you compare general hospitals with psycho hospitals, they see psycho hospitals as very quiet with lack of activities (46:30) but when it comes to community hospitals or clinics, there is a lot of activity and they come here to relax. Most of the time they are more relaxed.

Silence

R: I don't know if you still have anything to share regarding this collaboration? Anything according to that interview guide given? Ok we did talk about the need, the characteristics of collaboration, and the barriers of collaboration

R: You can pick on anything if you still want to share.

P1: I don't know. This problem based learning has started somewhere. Overseas, can one of the managers be taken to go and see and learn how this is actually being implemented? Can we be taken once in three year or take one of us to see how this problem based learning is implemented? This can make us strong here. This is just a question

R: Is that a question or opinion?

Laughter from participant

R: Because here I need more of opinions than questions

Laughter from participants

P4: The University should organize some sort of a conference and invite all the collaborators so that they can give us information on how to go about this problem based learning.

R: I don't know if you still have some opinions to share.

Silence

R: Ok, before I close on your opinions, let us quickly go through what we said as a group to check on ourselves about this or the main components of this collaboration.
P5: We did mention that there is need for collaboration; the key collaborators must be nurse educators, preceptors.
P1: Other colleges affiliated to the universities offering PBL, doctors, nurses of all categories and students themselves.
R: It is better when it is said by you than me so that I don't influence you.
P1: Benefit includes quality education, patients won't complain anymore. I say quality because students will know how to solve problems and quality students will be confident when they qualify as professionals. Students will be competent and knowledgeable.
R: How Knowledgeable?
P2: The students will be knowledgeable to solve or address any problem that may arise.
R: Ok. Characteristics or the type of collaboration can we summarize?

Silence

P3: Communication through e-mails, phones and reports.
P1: We need in-service training....Ja...Continuous meetings. (51:40)
R: Ok...I think you have said a lot. I have a lot to write and listen to from the tape. At this point in time, I am going to ask you to pose questions regarding this project. I just want to find out if you have any questions for me.

Silence...silence...

P1: As we speak now, there is no one from us who trained on flow to supervise problem based learning. What you are doing at the university, is not what we are doing here. We are doing something else.
R: Uhm...uhm...
P1: Can you do something to solve this?
R: Is this a question or a comment?
P1: I am just commenting (52:46) that I know there is collaboration between services and the university, but we are not trained on how to supervise these students who are following up problem based learning approach. So, the training is the most important so that we are able to supervise the students
P4: As said we need orientations and guidance on this problem based learning
P5: Maybe we need to have a demonstration on how this problem based learning work in practice
P1: This should be done alone so that we can be able to also know what they learn in class, we are able to relating or be able to talk about the outcomes, that is, what the results are
R: Ladies and gentlemen, I think I have heard you very loud and clear. Maybe I need to thank you for your participation. And maybe I need to stop the tape. Or do you still have something to say?
P1, P2, P3....No.

Tape Stopped 54:45

Appendix M:Survey Instrument/ Questionnaire

QUESTIONNAIRE FOR NURSE EDUCATORS, MANAGERS AND CLINICAL PRECEPTORS

OPINIONS/ PERCEPTIONS OF NURSES REGARDING COLLABORATION IN IMPLEMENTING PROBLEM BASED LEARNING IN NURSING EDUCATION

INSTRUCTIONS AND DEMOGRAPHIC INFORMATION

1. INSTRUCTIONS

2. Your contribution to education and training of nursing students is much valued.
3. Please be kind to complete this questionnaire which is part of my research dissertation.
4. Please answer the questions to the best of your ability.
5. Kindly be as objective as possible.
6. Do not write your name to ensure confidentiality and anonymity.
7. The completion of the questionnaire is not compulsory, but your assistance is appreciated.

BIODATA		***OFFICIAL USE ONLY***
Age (Years)		
Gender	Female ☐ Male ☐	
Race	Black ☐ White ☐	
Position.	Nurse Educator ☐ Nurse Manager ☐ Preceptor Or Clinical Nurse ☐	
Experience in current position.	2- 5years ☐ 6 -9yrs ☐ 10yrs And Above ☐	
Qualifications.	Diploma in nursing. ☐ Degree In Nursing ☐ Post basic diploma. ☐ Master's Degree ☐ PhD Degree ☐ Other ☐ **In Case Of Others, Please Specify** _____ _____ _____	

1. **Explain collaboration in implementing problem based learning in nursing education using your own words**

_____

_____

_____

_____

_____

_____

_____

2. Opinions regarding the need for collaborative work in implementing PBL in pre-registration nursing education

Please remember to place a cross (X) in an appropriate column.

	Opinions.	Strongly Agree	Agree	Disagree	Strongly Disagree
	Implementation of PBL requires collaboration with other stakeholders.				
	With collaboration in implementing PBL much can be achieved to educate the nursing student.				
	Clinical areas have a lot of expertise and can play an important role in implementation of PBL in nursing education.				
	We all know what needs to be done for collaboration in implementing PBL to work				
	I have the abilities to collaborate in implementing PBL in nursing education				

Please briefly suggest four (4)ways in which collaboration can be implemented in PBL at this level

1. _____
2. _____
3. _____
4. _____

3. Opinions regarding the type of Collaboration needed in implementing PBL and benefits of collaboration

Opinions.	Strongly Agree (4)	Agree(3)	Disagree (2)	Strongly Disagree (1).
A better way to implement PBL is through intra professional collaborative work.				
Interdisciplinary collaboration is necessary for implementing PBL(collaboration with other disciplines eg social work, psychology, sociology and biological sciences)				
Inter institutional collaboration is necessary for implementing PBL				
Collaborative wor in implementing PBL result in greater student satisfaction				
Collaborative work provides better support during interventions				
Collaborative work improves the quality of nursing education				
Collaborative work improves the quality of services to students				
Collaborative work fosters integration in implementing PBL				
Collaborative work decreases duplicated services				

Please briefly describe four (4) benefits of collaborative work in implementing PBL for preregistration nursing education.

1. _____
2. _____
3. _____
4. _____

4.: Your abilities in collaborative work for effective implementation of PBL in pre registration nursing education					
Opinions.		Strongly Agree	Agree	Disagree	Strongly Disagree
	My professional abilities to provide special services requested for collaborative work in PBL are appropriate				
	My ability to link to resources of nurse education(or nurse) teams is appropriate				
	I Understand the capabilities of my profession in collaborative work				

5: Your opinions regarding people who constitute key collaborators in implementing PBL in pre-registration nursing education					
Opinions.		Strongly Agree	Agree	Disagree	Strongly Disagree.
	Nurse Educators.				
	Nurse Managers and professional nurses in Health Care Services				
	Centres of Excellence in PBL				
	Other departments within the education Institution.				
	Others				

In case of others, please specify 3 other key collaborators.

1._____

2._____

3._____

***6:* Factors that contribute to successful collaborative work in implementing PBL in Pre-registration Nursing Education**					
Opinions.		Strongly agree	Agree .	Disagree.	Strongly disagree.
	A clear vision that is shared by all parties				
	Strong values that are accepted and understood by all parties				
	Strong principles that are accepted and understood by all parties				
	Specific aims and objectives that are established for the collaboration				
	The anticipated outcomes of collaboration				
	The reasons why each collaborator is engaged in the collaboration are understood and accepted				
	The areas where early collaboration success is most likely have been identified and agreed				
	A clear commitment to collaboration working from the most senior levels of each of the collaborators				
	Collaboration recognizes and values each collaborator's contribution				
	Costs and benefits arising from the collaboration are fairly distributed among all collaborators				
	Levels of trust within the collaboration are high enough to encourage risk-taking				
	There is zero tolerance of individuals and/or agencies who fail to work constructively within the collaboration				
	Suggest four (4) other factors that may contribute to a successful collaboration in implementing PBL 1. _____ 2. _____ 3. _____				

1. Opinions regarding governance arrangements

	Opinions.	*Strongly Agree*	*Agree*	*Disagree*	*Strongly Disagree*
	All stakeholders are represented in the collaboration governance arrangements				
	Each collaborator's areas of responsibility must be clear and understood				
	Collaboration is conducted open and fairly				
	It is clear what resources (both financial and non-financial) each collaborator brings to the collaboration				
	The collaboration has dedicated staffing to support its working arrangements				
	There are clear lines of accountability for the performance of the collaboration as a whole				

Please briefly suggest three (3) ways in which you think performance on this principle could be improved

1. _____
2. _____
3. _____

2. Opinions regarding monitoring, measuring & learning in collaborative work.

	Opinions.	*Strongly agree*	*Agree*	*Disagree*	*Strongly disagree*
	The collaboration has appropriate procedures in place for monitoring its progress				
	Clear criteria to judge the extent to which collaboration goals are achieved				
	Clear criteria to judge the way in which the collaboration itself is working				
	Communication of Collaboration achievements amongst the collaborator agencies and beyond				
	The key measure of success is the effect the collaboration has upon service users				
	The collaboration shows evidence of learning and changing in the light of experience				

Please briefly suggest three (3) ways in which you think performance on this principle could be improved

1. _____

2. _____

3. _____

9. Opinions regarding barriers in collaboration in implementing PBL in Nursing education

Opinions		***Strongly agree***	***Agree***	***Disagree***	***Strongly disagree***
	Lack of funding can be a barrier in effective collaboration.				
	Lack of resources can create barriers in collaboration.				
	Poor human skills can be a barrier in collaboration				

Please briefly suggest three(3) other barriers that may hamper collaboration in implementing PBL in nursing education

1. _____

2. _____

3.

Thank you very much for your participation.

_____

M A Rakhudu