CASE BASED LEARNING IN THE UNDERGRADUATE NURSING PROGRAMME AT A UNIVERSITY OF TECHNOLOGY: A CASE STUDY

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DECLARATION

This is to certify that the work is entirely my own and not of any other person, unless explicitly acknowledged (including citation of published and unpublished sources). The work has not previously been submitted in any form to the Durban University of Technology or to any other institution for assessment or for any other purpose.

Signature of the student

Date

Approved for final submission

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ABSTRACT

Background

The current health care system in South Africa and its diverse settings of health care delivery system require a nurse who can make decisions, think critically, solve problems and work effectively in a team. Traditional nursing education teaching strategies have over the years relied on didactic and often passive approaches to learning. In pursuit of quality, academics and students must be continually engaged in a process of finding opportunities for improving the teaching and learning process.

Purpose of the study

The purpose of this study was to evaluate the structure and the process in case based learning at the University of Technology.

Methodology

This study is qualitative in nature, governed by an interpretive paradigm. This is a case study, which enabled the researcher to merge student interview data with records in order to gain insight into the activities and details of case based learning as practised at the University of Technology under study. Most importantly, the case study method was deemed appropriate for the current study, since case-based learning as a pedagogical approach (and a case) cannot be abstracted from its context for the purposes of study. Case based learning is evaluated in its context namely, the undergraduate nursing programme, using the Donabedian framework of structure, process and product.

Results

The study recorded that students were positive towards case based learning though some identified dynamics of working in groups as demerits of case based learning.

The structures that are in place in the programme and the CBL processes are adequate and support CBL. There are however areas that need attention

such as the qualification of the programme coordinator, the size of the class-rooms and the service of the computer laboratory.

Conclusion

The study found that apart from a few minor discrepancies, case based learning is sufficiently implemented, and experienced as invaluable by students, at the University of Technology under study.

Key words: case based learning, undergraduate nursing students, critical thinking, Donabedian framework, university of technology, structural standards and process standards.

DEDICATION

I dedicate this work to my late mother, Gladys Vundla, who would have supported me in every possible manner whilst doing this study.

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All glory and honour be to God almighty for giving me the strength and patience to complete this work.

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ABREVIATIONS AND ACRONYMS

Acronym	Full word
CBL	Case Based Learning
CBE	Case Based Education
CHE	Council for Higher Education
OBE	Outcomes Based Education
PBL	Problem Based Learning
PC	Programme Co-ordinator
SANC	South African Nursing Council
UoT	University of Technology

GLOSSARY

Case based learning: An active teaching-learning strategy which uses a guided inquiry method and involves small group discussions in which the group focusses on understanding or resolution of a problem. The teaching learning method promotes development of critical thinking skills, problem solving, effective communication and lifelong learning.

Council for Higher Education (CHE): An independent statutory body established by the Higher Education Act, no.101 of 1997. The CHE is the quality council for higher education, advises the Minister of Education and Training on all higher education issues and is responsible for quality assurance and promotion through the Higher Education Quality Committee (Council for Higher Education 2011).

Department of Higher Education and Training: The Department of Higher Education and Training is one of the departments of the South African government. It oversees universities and other post-secondary education in South Africa.

General Nursing Science (GNS): A module in a general nursing programme which studies general medical, surgical and paediatric commonly occurring human conditions.

Midwifery: Art of attending to women in child birth. The meaning in this study: A module of Bachelor of technology in nursing which studies care of a woman during pregnancy and after childbirth.

South African Nursing Council: The body entrusted to set and maintain standards of nursing education and practice in South Africa. It is an autonomous, financially independent, statutory body, initially established by the *Nursing Act, No.50 of 1978 as amended* (Republic of South Africa 2005).

Nursing Strategy for South Africa: This refers to The National Strategic Plan for Nurse Education, Training and Practice whose aim is reconstruction

and revitalization of the nursing profession in South Africa. *Nursing Strategy for South Africa 2012/13-2016/17* (Department of Health 2013).

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CHAPTER 1: INTRODUCTION

1.1 Background to the study

The current health care system in South Africa and its diverse settings of health care delivery systems require a nurse who can make decisions, think critically, solve problems and work effectively in a team (SAQA 2005). Health care quality is often dependent on the quality of nurses and midwives, since they provide the bulk of the human resource capacity. The South African Department of Health published the" Nursing Strategy for South Africa 2012/13-2016/17" in an attempt to provide better trained and skilled nurses according to South Africa's health needs (Department of Health 2013). The goal of the Nursing Strategy for South Africa is to achieve and maintain an adequate amount of nurse professionals who are appropriately educated, geographically distributed and deployed to meet the health needs of all South Africans (Bruce, Klopper and Mellish 2011:63).

As stated by DeMarco, Hayward and Lynch (2002:165), healthcare professionals need to be proactive in their approach to client problems. They need to move away from a framework of diagnosing and treating client problems towards a model that helps professionals explain, predict and manage care as a dynamic, interpersonal process within work group interactions. This means that nurses need to improve knowledge and practice and to explore the best ways to do things within a work group. It therefore, becomes imperative that educators develop strategies that move students from being passive learners to becoming more actively involved in the learning process.

Traditional nursing education teaching strategies have over the years relied on didactic and often passive approaches to learning, such as the lecture method. According to Kelly and Finlayson (2008) in De Wet and Walker (2013:1), teaching the traditional way is a teacher-centred approach where students follow a strict set of instructions with perhaps little understanding of the purpose thereof and usually minimal active participation from the students and hence the students lack critical thinking. These traditional teacher-

centred methods tend to produce superficial thinkers who primarily rely on rote memory rather than careful understanding of the content (Jeffries as cited by Kaddoura 2011:1).

In pursuit of quality, academics and students must be continually engaged in a process of finding opportunities for improving the teaching and learning process, the quality of the learning experience and the way it is delivered and assessed (Edwards 2010:37). Therefore, nurse educators are looking for teaching strategies to foster critical thinking in students by engaging them in active learning processes. Critical thinking, decision making, problem-solving and analytical skills are especially important and it is critical that they be developed and practised by nurses. Ignatavicius (2001:370), suggests the following characteristics for critical thinking: 'Critical thinkers are outcome driven, open to new ideas, flexible, willing to change, innovative, analytical, creative, communicators, assertive, persistent, caring, energetic, risk takers, knowledgeable resourceful, observant, intuitive, and 'out of the box thinkers'.

Learning approaches that promote development of these cognitive skills include the following:

- Co-operative Learning: This learning approach refers to a group or team learning together in small groups to maximise their own and others' learning and to achieve shared goals. It encourages students to think about their learning processes, develop communication skills as well as peer teaching and mentoring (Bruce, Klopper and Mellish 2011:206).
- Problem Based Learning (PBL): A student-centred learning approach in which students in small groups seek solutions to problems or situations through the systematic process of reasoning, hypothesising, planning and evaluating (Bruce, Klopper and Mellish 2011:199).
- Case Based Learning (CBL): CBL is described by Dupuis and Persky (2008:1) as "an active learning strategy, much like PBL, involving small groups in which the group focuses on solving a problem". Barrows and Tamblyn as cited by Sanrud and Ranahan (2012:235) define CBL as "Learning that results from the process of working towards the

understanding or resolution of a problem"). Setia et al. (2011:1) define CBL as "an educational paradigm closely related to the Problem Based Learning that uses a guided inquiry method and provides structure during small-group discussions". Most studies on CBL in various disciplines agree that CBL promotes development of critical thinking skills, problem solving, effective communication and lifelong learning.

CBL has been practised in other fields such as business, law, medical and other health professions. Lately CBL was adopted by disciplines including nursing (Kaddoura 2011:5). Though its use in undergraduate nursing programs has been limited, CBL has been applied with postgraduates in management and other post graduate programs (Greenhalgh 2007 in Harkrider et al.) and Rosier (2001:585). Recent years have seen a surge of these inquiry based methods in undergraduate programs of some disciplines since the introduction of Outcomes Based Education (OBE) in basic education. OBE is a student-centred learning method. According to Bruce, Klopper and Mellish (2011); Spady (1994) OBE implies focusing and organising a curriculum around what is essential for the learners to be able to do successfully at the end of their learning experiences. OBE commenced in South African schools in 1998 with the introduction of Curriculum 2005 (Killen 2010:53).

The implementation of Curriculum 2005 was a paradigm shift from the traditional teaching methods that were used in basic education in South Africa. It could have been a form of scaffolding for other inquiry based methods that have been mentioned in the previous paragraph. These inquiry based teaching strategies promote decision making and analytical skills in nurses, CBL in particular. Uys and Gwele (2005:130) suggest that students need to learn how to learn what they need in order to deal with personal and professional problems. Killen (2010:54) adds that the case method of teaching can provide a very natural way of helping learners to learn by exploiting the basic human capacity to learn from stories.

The South African Department of Health published the" Nursing Strategy for South Africa 2012/13-2016/17" in an attempt to provide better trained and skilled nurses according to South Africa's health needs (Department of Health 2013). The goal of the Nursing Strategy for South Africa is to achieve and maintain an adequate amount of nurse professionals who are appropriately educated, geographically distributed and deployed to meet the health needs of all South Africans (Bruce, Klopper and Mellish 2011:63).This need for an appropriately trained nurse had to be aligned in both government policy and academic curriculum, through an appropriate teaching-learning strategy.

1.2 Problem statement

It has been argued that the shift from outcome-based learning to student-centred, self-directed strategies produces a critical and adaptable professional (Gray and Aspland, 2011). Case-based learning is one such strategy, lauded for its production of critically-oriented, pragmatic learners. However, without astuteness in implementation, some (Prosser and Trigwell, 1999) argue that the intended benefits may not be realised. In fact, Gray and Aspland, (2011:38) contend that 'it is not the way we design our courses in higher education that relates to the quality of student learning, but how our students experience and understand that design'. The purported merits of CBL strategy are likely to be realised when all the technical aspects of implementation, as designed, have been ironed out, and students experience what is intended for them.

Those who have investigated the implementation of case-based learning in different institutions of higher learning (Srinivasan et al. 2007; Malesela, 2009) have cited a few implementation challenges, which may haunt prospective implementers should the lack vigilance in monitoring their implementation processes. Srinivasan et al. (2007:3) makes a point that in as much as case-based learning can be a new strategy to students, needing them to adapt and actively accept their new-found responsibilities; the onus of making CBL work rest as much on educators, who ought to master the art of facilitation. When not properly trained, CBL educators may negatively impact on objective of CBL of producing a critically sound, self-directed professional. Kantar

(2013:103), affirms this, but arguing that 'the effectiveness of CBL is highly contingent on the educator's knowledge and skills in leading discussions and fostering engagement'. From the literature it would seem that the success of CBL as a teaching and learning strategy is contingent on the design of the curriculum, the competency of the educators, as well as the flexibility and willingness of students to assume responsibilities of proactive learning.

The present study, therefore, attempted to evaluate the structure and process of CBL at a University of Technology (UoT) in KwaZulu-Natal (KZN). The study used the case study of an undergraduate Nursing Programme to conduct the evaluation. The Nursing Undergraduate Programme is new at the UoT under study, with the first group of students having been admitted in January 2010. Many studies conducted on CBL have focused on comparing these teaching and learning strategies with other strategies, like problem-based learning (PBL) (Srinivasan et al. 2007:3). This study aims to contribute to those studies that have focused on assessing how the implementation of CBL is done in different institutions of higher learning, as experienced by the undergraduate nursing students. The study would, therefore, assist the facilitators of learning in identifying strengths and weaknesses in this aspect of the curriculum in order to improve teaching and learning methodologies and practice.

1.3 Purpose of the study

The purpose of this study was to evaluate the structure and the process in CBL at the UoT.

1.3.1 Objectives of the study

The objectives of the study were to:

- Identify and analyse different components of CBL strategy.
- Ascertain students' understanding of CBL as teaching strategy.
- Describe how students experience CBL.

1.3.2 Research questions

- What CBL structures and processes exist at the UoT?
- How do these structural and procedural components support CBL?
- What knowledge and understanding do students have on CBL?
- How do students experience CBL as a method of teaching and learning?

1.4 Significance of the study

Even though this study is based on one particular case, it has potential to contribute in a more generic way to the theory and practice of teaching and learning methodologies in general and CBL in particular. The UoT under study may benefit from the study in that evaluation of a programme or part of a programme forms the basis for further developing the programme or part thereof. This is so because a study of this methodology has not been previously undertaken at this UoT. In teaching and learning policy, particularly in health science education, this study may contribute to the design and revision of CBL strategies, in an attempt to accentuate the benefits to the training of health professionals. By unpacking the structural and procedural dynamics of implementing CBL, this study has the potential to contribute to the manuals of implementing CBL in various institutions of higher learning. Both academic administrators and programme co-ordinators may benefit from the results of this study. Subject educators and facilitators may also benefit by getting a clearer understanding of student's perceptions and expectations, with regards to the processes of CBL. In a broader way, the study may also contribute to implementation management and understanding of student-centred learning strategies.

1.5 Research methodology

This study is qualitative in nature, governed by an interpretive paradigm. According to Polit and Beck (2012:487), the qualitative design merges together various data collection strategies and is capable of adjusting to information during data collection. The strength of qualitative research is in its ability to unpack intangible aspects of a research phenomenon in order to provide complex descriptions of people's experiences and perceptions (Bernard and Ryan, 2010). To achieve this, the researcher utilised semi-

structured interviews with students of the CBL programme. The study was an intrinsic case study design which enabled the researcher to verify interview data with records in order to gain insight into the structure and process of CBL, as implemented at the UoT under study.

The study took place at a UoT in KZN. The campus is situated in a semi-urban township, with the effect that most of the students are from peri-urban areas, rural areas or previously disadvantaged groups. The majority of the students come from outlying schools where OBE was used and the lecture method predominant. Most of the students experienced CBL for the first time as first year students at the UoT.

The study conducted semi-structured interviews on the students and in-depth interview with the programme co-ordinator (PC) to gather the necessary information of answering the research questions. The sample population consisted of 78 students and1programme coordinator (PC). Of the 78 students whose naïve sketches were relevant to the study, however, on conducting the interviews data saturation was reached at 10. Thematic analysis, in which the audiotaped information was transcribed, coded and categorised, was used to make sense of the research findings. The services of a transcriber and co-coder were sought in transcribing, coding and analysis the data.

The rigor of qualitative research is described differently from that of quantitative research. In qualitative research rigor is determined by its trustworthiness, which ensures the extent to which the results can be trusted (Given and Saumure 2008:896). For the present study, trustworthiness was achieved through working closely with the supervisors who also are part of the administration team of CBL in the UoT under study, they are familiar with most of the aspects the study aimed at finding out. Secondly, working closely with the PC, and other participants, who confirmed the interpretation of their contribution, is also a source of trustworthiness for this study.

The study was also conducted within the ethical framework of the UoT, and was cleared as ethical by the Ethics Committee. In sampling and data collection, no participant was coerced; rather all participants were requested to sign the Informed Consent form, which explained purpose of study

1.6 Theoretical framework

In order to achieve the purpose of the study, to evaluate the structures and processes of case-based learning at the UoT, the Donabedian theoretical framework was used for quality assessment. The Donabedian theoretical framework is usually used to assess the quality of educational and personal development programmes. The framework has thus since been conceived as a conceptual model that provides criteria for the assessment of the quality of healthcare and service (Sardasht et al. 2013; El Haj et al. 2013). First designed by Avedis Donabedian in 1966, the model assesses a programme through three categories namely structure, process, and outcomes. These are sometimes referred to as standards (Ammenwerth et al. 2007; Bahrami et al. Jlassi et al. 2007; Kelley and Hurst 2006; Kunkel et al. 2007). A standard, in this context, will be a criterion against which success is measured. These standards are necessary for effective functioning of a programme like CBL. The structural standards include the philosophy and mission, management structures, policy and procedural manuals, personnel, facilities and supplies, as well as finances. These generally provides the physical and organizational setting in which the programme functions (Donabedian,1980). The process standards are the activities carried out to achieve the goals and objectives of the programme. The outcome standards are the objectives and goals of the programme. Most studies have used the Donabedian framework to assess teaching and learning strategies like CBL. The present study used the framework to identify and assess different components of CBL (structure) and the processes, as identified by the PC and the student participants. Since assessing the outcomes (even though identified in some parts of the study) was not part of the study, the part of the framework dealing with the analysis of the outcomes is ignored.

1.7 Outline of the dissertation

This study consists of five chapters. The chapters are arranged in such a way as to meet the purpose of the study and answer the research questions herein. Chapter 1 introduces the study, by giving background to the subject matter under study, the problem statement, aim of the study, objectives, significance as well as the methodology of the study.

Chapter 2 posits the study within the preceding body of literature through literature review. This chapter generally defines the global state of knowledge about CBL, which is further narrowed to Africa and South African contexts in a bid to set the context of the current study.

Chapter 3 presents the research methodology used in this study. The qualitative approach, its design, sampling methods and the theoretical framework, is outlined in this chapter.

Chapter 4 presents the results of data collection and analysis. The dynamics of content analysis used for making sense of the collected data is unpacked. Discussing findings in relation to applicability to other groups and possibly, to other programmes in nursing education, is also presented in this chapter.

In Chapter 5, the summary and conclusion of the findings is given.

1.8 Conclusion

The case study method of teaching and learning is cited by several writers as a form of inquiry based teaching learning approach which encourages development of critical thinking skills and encourages students to relate critical thinking to nursing care situations that they may encounter or have encountered in practice. Its use yields the desired effects if implementation is carefully planned and implementation guidelines are observed. This chapter gave an overview, objectives, significance and an outline of chapters. The following chapter will discuss literature review on CBL in a thematic presentation of the views of several authors.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The purpose of this study is to evaluate the structure and process of case based learning as practised at the UoT. In order to understand the purpose of the study, more information must be gathered on the topic under study. This section presents the results of such literature review. The conceptual framework is also discussed in this chapter.

Brink (1996:76) defines a literature review as a process that involves finding, reading, understanding and drawing conclusions about the published research and theory on a particular topic. According to Creswell (1994:24), literature control should be done inductively so that a description of the experiences of participants should be seen and not merely read in literature. For this study, the literature will be reviewed from all the international contexts in which the pedagogical methodology has been implemented. This will also include analysing and reviewing related methodologies in the global as well as the local contexts. The intention of this literature review is that this study will gain access to the conceptualisation of CBL, its difference from other related methodologies, its prevalence, as well as its architecture and its process. By so doing, it is hoped that gaps in theory and practice, will be established to justify the current study.

2.2 Overview of CBL

CBL has been embraced in many disciplines and countries as a pedagogical approach. This literature review reveals the interest in application and research of CBL in many countries. Of these countries, America is by far a more popular context for CBL in practice and research, over an extensive field of varied disciplines.

According to Kjaerulff et al. (2009), the CBL model is ideal for multidisciplinary study. In fact, Kjaerulff et al. (2009:4) argue that since the common challenges of society have to be met with a multidisciplinary approach, CBL incorporates within traditional pedagogies the innovation of the possibility of resolving more

than one problem, drawing from different disciplines. The wide range of disciplines approached through CBL defy conceptualisation, however, in this review a number of disciplines were highlighted. The disciplines that primarily use CBL as their pedagogical model include health-related subjects, education, business, law and management, among others.

Ahmed Lee and Choi, (2008) assess how CBL is used in Early Childhood Education for classroom management and problem-solving skills development. Other disciplines include: pharmacy in Portugal (Jesus et al. 2012) education (Light 1994; Kalelioglu and Altun, 2012); pre-hospital education and health science in Australia (Williams 2014; Rybarczyk et al. 2006); curriculum development in Veterinary Science (Taylor and Ellis 2012) information, communication and technology in United States of America (He et al. 2013; Martinez-Garcia et al. 2012).

Other studies deal with how CBL is used in different aspects of education. McNaught et al. (2007) evaluates how assessments in science courses are done under CBL, in Hong Kong. These authors argue that since traditional assessment is not compatible with CBL, the method of assessment in CBL is also student-centred. Rybarczyk et al. (2006) deal with how CBL covers student teaching outcomes in health sciences. According to them, CBL allows a participatory effort in covering the teaching content; where both lecturer and students are involved in meeting different teaching outcomes of the curriculum. This visibly, departs from the traditional pedagogies, where the covering of teaching outcomes in a sole preserves of the lecturer.

Dupuis and Persky (2008:7) assessed the instructional design and assessment of CBL in a clinical Pharmacokinetics course, the findings of the study were that the majority of students enjoyed the format CBL, because it focused on application; but some students did not enjoy the “learning on their own” aspect of the CBL format. In Oklahoma, USA, Harkrider and MacDougall et al. (2013) reviewed studies which aimed at improving content and presentation of CBL and concluded that cases should be kept brief and that well-written cases can promote knowledge acquisition, sense making and

decision making. These writers also recommend simplicity and structure in the case method of teaching.

Ertmer and Stepich (1999) at Purdue University in West Lafayette, conducted a study which they determined the development of students' problem-solving expertise within a CBL model. The study concluded that in CBL instruction, the learning focus shifts from explicit knowledge and skills to creating professional knowledge that allows students to "think like professionals" and that case-based instruction can help students focus on the bigger picture as the students often have to "spot" the underlying issues in authentic, relevant problems. They also found that case- based instruction enabled the students to work forward from what they knew, and helped students to generate tentative solutions thus encouraging self-awareness and growth.

In most of the studies reviewed where CBL has been used, educators, educationists and students regard CBL as an exciting educational prospect which allows for the development of research capacity and teaching-learning strategies (Williams 2005:577). CBL is acknowledged for its innovation in integrating different traditional pedagogies (definition-based learning, solution-based learning and PBL) in a way that deals with the blind spots of all these approaches becoming the interface between teaching and learning and modern society problems (Kjaerulff 2009).

Light (1994:1) contends that educators keen to involve their students extensively in classroom discussions find that case studies can provide a rich basis for developing students' problem-solving and decision- making skills. The preference for CBL approach in most applied disciplines is also based on its ability to:

> *"…help students prepare to deal with the real-world problems they will face when leaving an academic environment, and ultimately, to find success within a specific business organization or profession by using these previously learned skills and experiences"* (Lee *et al.* 2009:179).

Most importantly, CBL is viewed in literature as an invaluable pedagogical method for a wide range of subjects; both health and non-health related.

2.2.1 Case-based learning in non-health disciplines

CBL as indicated above has been seized with enthusiasm in many disciplines as a preferred pedagogical model because of its multidisciplinary orientation. This novel enthusiasm comes at the wake of case-study emphasis in business, law, and medical schools, which have for many years been based on the analysis of real world cases; while other disciplines were using case study analysis occasionally to assess their students' ability to synthesize, evaluate, and apply information and concepts learned in lectures and texts (Light 1994:1). In fact, Oliver (1999) observed that CBL was employed in law schools as early as the late 1800s and popularized in business schools since the early 1900s. In addition to medicine and other health-related disciplines, CBL is an invaluable pedagogical approach for many more non-health disciplines (Artan 2007; Garvey, O'Sullivan and Blake 2000; Marcus, Taylor, and Ellis 2004; Williams 2004).

Lee et al. (2009) examine how a case-based learning approach was used and facilitated in online business education. In their study, they explore the perceptions of students and instructors about the current practices of CBL in a fast-growing online MBA program at a large state university in the Midwest of the United States of America. The assumption is that the field of business requires multifaceted practices for real-world problems as much as or even more than any other field. A business school expects that application skills and knowledge available to MBA graduates will be comparable to the skills and knowledge possessed by business professionals (Lee et al. 2009:178). CBL facilitates learning transfer and real-world applicability, which is the main concern in the teaching philosophy of business education. Lee et al. (2009:178) further observed that the integration of technology-supported instruction and CBL provides students with an environment to interact with a case in diversified ways and settings.

To explore this, perceptions of students and instructors regarding the practices of CBL in online environments are explored in terms of instructional design, facilitation, and technology support. According to the survey results,

86 percent of students pointed out that CBL is an important instructional method (Lee et al. 2009:182). The findings of the study claim that the CBL approach can be as effective in online environments as in traditional face-to-face classroom settings It reflects positive student perceptions on the practices of CBL in online environments. The implication therefore is that students learn effectively as long as online CBL activities are carefully designed and managed. The question raised then will be how these activities can be designed and implemented in order for CBL to be successful (Lee et al. 2009:185).

In a similar vein, Kjærulff et al. (2009) investigates how a new multidisciplinary Information Technology Bachelor's program embraces a case-based teaching model at Aalborg University in Denmark. The focus of the study was mainly on assessing the first year of the programme which integrated all three disciplines into a case-based teaching model. The aim of this programme was to form a well-aligned learning environment, which could support the students in achieving multi-faceted and operational knowledge. The assumption was that by using a case-based model, the programme would expose the students to all three disciplines from the outset and enable the students to experience the synergy between them (Kjærulff et al. 2009:1). The same author further contends that this is achieved through a series of cases that provide knowledge and utilise the three disciplines to work on an overall project.

The intention is that CBL will shape preconditions for more dedicated students with a higher level of responsibility of their own work (Kjærulff et al. 2009:3). This is because CBL is seen to combine talent and motivation by making sure that students also have to be creative and innovative in the project work as they have to make new solution methods, combine and prioritise different disciplines (Kjærulff et al. 2009:6). Even though it might have been too early for the study to give a sustainable evaluation of a five-month old programme, the study concluded that the programme seemed to be producing better and, perhaps more innovative students regarding the multidisciplinary needs of industry and society (Kjærulff et al. 2009:7). To date the experiences from

both students and teachers confirmed their perception of interdisciplinary synergy as an integrated element of a well-aligned learning environment. So far, the experiences seemed to be positive (Kjærulff et al. 2009:7).

Lee and Choi (2008), on the other hand give an evaluation of a project that uses web-based case instruction to allow prospective early childhood teachers to be exposed to various dilemmas faced by practicing teachers. The goal of the project was to design an instructional tool and method that could help prospective teachers gain real-world experience in classroom management beyond a set of techniques (Lee and Choi 2008:495). The initial data analysis results indicated that this instructional method was effective for (a) promoting prospective teachers' awareness of multiple perspectives, (b) encouraging them to explore diverse ways of problem solving, and (c) articulating their justification based on a sense of moral responsibility and affective engagement (Lee and Choi 2008:497). This therefore, further confirms Lee et al.'s (2009:179) contention that CBL offers real-life experiential knowledge to students in different disciplines.

Almost on a similar path to Lee and Choi (2008); Martinez-Garcia et al. (2012) explore the potential of semantic web technologies to support teaching and learning in a variety of higher education settings in which some form of CBL is the pedagogy of choice. The study draws on the empirical work of a major three year research and development project in the United Kingdom titled "Ensemble: Semantic Technologies for the Enhancement of Case-Based Learning" which has been oriented toward developing a better understanding of the nature of CBL in different settings, but also exploring the potential for semantic web technologies to support, enhance and transform existing practice. On the other hand, He, Yuan and Yang (2013) demonstrate the need for in information security by sharing their respective experiences in using a case study to teach security management. They also preset a process model of integrating a case library and Web 2.0 technologies to facilitate CBL. These studies further consolidate the utility of CBL in multidisciplinary contexts.

Other disciplines in which CBL has been applied include engineering skills for cybersecurity and inter-professional learning (IPL). Cifuentes et al. (2010) report on the design, development, implementation and evaluation of a case-based instructional environment designed for a learning network. They motivate for the usage of CBL approaches in addressing societal problems, offering the theory-based solution as well as the preliminary testing and evaluation of that solution. On the other hand, Lindqvist et al. (2005) describe the development and evaluation of an IPL programme at the pre-registration level. The principal aim of the study was to investigate whether CBL in cross-professional groups was a feasible and an effective way to conduct inter-professional education. Using student volunteers from five different health professional training institutions, the study reports significant effects of the intervention on students' attitudes to different health professions. The initial findings reported in this paper show that this is a feasible and an effective way to deliver inter-professional education across the wide range of professions in the study and that the learning programme was viewed positively by the participating students (Lindqvist et al 2005:517).

Ballantyne and Knowles (2007) summarise the results of an evaluation of students' perspectives comparing learning from a multimedia CBL object with learning from text-based case studies in Scotland and Canada. Results indicate strong support for the use of multimedia case scenarios in social work education. Students felt that their learning was enhanced using multimedia case studies compared to text-based case studies. A number of benefits, disadvantages and recommendations were identified that will help guide the future development, (re)use, and exchange of digitized learning resources in social work education (Ballantyne and Knowels 2007:271).

In as much as the reviewed studies might, at face value, seem to have nothing in common, their appreciation of the advantages of CBL as an innovative pedagogical approach for contemporary education makes them invaluable to the present study. More so, as they argue that this approach enhances the real-life experiential knowledge for students in applied

disciplines, since this factor is an invaluable one in health science – a focus of the present study.

2.2.2 Case based learning in health-related programmes

Medicine and other health-science disciplines are practice-oriented domains, whose orientation can be described more as a craft and art rather than a science. The inherent science is very much applied to specified real, rather than hypothetical, cases – a nurse or doctor learns how deal with known (normal) human patients. Any relevant precedents in particular cases are invaluable to the instructional guidance of junior doctors and student nurses. This observation has led to the popularisation of CBL as a preferred pedagogical approach in health and medical science, as indicated by the following studies. In justification, Conti (2006) stresses the importance of understanding the underlying pathology, physiology, imaging and pharmacology related to a particular clinical situation, when dealing with patients. He cautions

> *"Reading a report of the investigation is not good enough if one really wants to understand and integrate the information with the clinical situation in order to arrive at a rational assessment and plan* (Conti 2006:1)"*.*

Conti (2006) and others make a case for the necessity of CBL in health-related disciplines, since in this domain preceding clinical situations are more important than theoretical demonstrations. Ahmed et al. (2012:956) argues that this necessity is based on the fact that 'authentic cases stimulate the acquisition of knowledge, skills, and attitudes in a safe learner-centered environment'. In the same attitude, many studies have been undertaken to assess the usage of the CBL approach in nursing and medical sciences.

Malesela (2009) explored the experiences of nursing students with case study approach as a learning opportunity. In this study, the case study approach was found to be effective in facilitating learning. This was indicated by an increase in critical thinking skills, increased theory, practice integration and increased growth in presentation skills. Similar results are shared by

Cassimjee (2007), who conducted a near similar study at the University of KwaZulu-Natal on undergraduate nursing students.

Williams (2005) discusses the findings of a literature review of CBL from a multidisciplinary health science education perspective and attempts to draw comparisons with the available literature relating to pre-hospital education and CBL. The majority of the evidence outlined in the literature review revealed that as a whole CBL was enjoyed by both students and tutors (William 2005:581). Other key elements discussed in the remaining articles centered on the use of CBL in a horizontal and vertical curriculum, how CBL or case series are viable in an electronic format, and the gender analysis of student performance within CBL.

Choi, Lee and Jang (2011) explore how students' learning styles influence their learning of anesthesiology within the CBL pedagogy. Five learning-outcome tests and two course-satisfaction surveys were implemented during the case-based instruction using a blended approach (online and face-to-face). The results of one-way Analysis of variances (ANOVAs) with repeated measures revealed that the four learning styles (active-reflective, sensing-intuitive, visual-verbal, sequential-global) did not influence students' learning experience and learning outcomes during the implementation of case-based e-learning. However, the pattern of the students' performance graph and further analysis with a liberal approach implied that while the active reflective learning style may influence learning outcomes slightly at an earlier time during CBL implementation as time passed, this learning style no longer influenced their learning at all. Thus, learning styles may not be considered important or may be considered only during the early stages of instructional implementation in order to facilitate the students' transition to the new CBL environment. It is more efficient to encourage students to adapt to different learning environments than to design adaptive systems in order to embrace diverse learning styles. Therefore, aligning with Loo's (2004) suggestion, it is more efficient to find ways that encourage students to adapt to different learning environments than to design adaptive systems in order to embrace diverse learning styles.

Farahani and Heidari (2014) analysed the effects of the case-based instruction method on the experience of learning among midwifery students who were randomly allocated to either case-based instruction or lecture-based instruction groups. The selected subjects were presented in four ninety-minute sessions. The study found that there was no significant difference between the two groups' Likert scale scores regarding learning experience. This study did not support the hypothesis of a greater effect of the case-based method in comparison to traditional lecturing. Results of this study show a similar impact on learning experience for both CBL and traditional lecturing methods based on the Likert scale (Farahani and Heidari 2014:43). This notwithstanding, this study still takes the hypothesis that CBL will still be a preferred teaching and learning strategy in contexts where proactive and critically minded graduates are required; the context in which the South African Nursing Education finds itself.

2.3 Case based learning and nurse training in South Africa

Post-apartheid South Africa has had to renew and reinvent most of state institutions in view of expanding service provision to a multiracial society. With regards to health service provision, the 1995 South African Qualification Act (SAQA) argues that nurse training needed to produce critically minded professionals, with reflective thinking capacity. The Act appealed to facilitators of nursing education to implement teaching strategies that facilitate these qualities in nursing professionals (Malesela, 2009). This call came at the wake of a strictly bureaucratic pedagogical method of teaching, traditionally followed in South Africa. Under this method, a registered professional nurse used a lecture-based teaching style, using demonstrations of clinical procedures.

The last two decades has been more dynamic within the South African nursing training, where nurse training has evolved into an innovative education programme, taught across multidisciplinary lines (Cassimjee, 2007). Centrally to this has been the promotion of a more student-centred, self-directed approach to nursing learning. This form of learning is crucial in

the context of South Africa, where many new nurse graduates are deployed in rural clinics, where they (due to nurse shortages) are in charge of units of health-care facilities. In such contexts, they will need to practise making independent critical decisions (Cassimjee 2007:415). Institutions of higher learning, engaged in training professional nurses have heeded this call by introducing CBL strategy (Cassimjee, 2007; Malesela, 2009). The Nursing Strategy for South Africa (2012/13-2016/17) has also reiterated this call, encouraging nursing education institutions to provide better trained and appropriately skilled nurses to meet South Africa's health needs (Department of Health 2013).

A few studies have been conducted on the progress of this innovation in South Africa. Among the few that can be identified, Cassimjee (2207) conducted an evaluative study of student's perceptions on the usage of case-based teaching in nursing training, at KZN. The study found that students were generally (70%) positive with the contribution of CBE in nursing training. Most of the students lauded the strategy for its ability to provide students with necessary skills for problem solving and critical thinking (Cassimjee 2007:412). Another notable study was also conducted by Malesela (2009) in a nursing training institution in Gauteng Province. Malesela's study also sought to investigate the experiences of students regarding the use of case study approach as a learning opportunity. Similarly, the study found positive assessment of case study methods from students; with many students suggesting that case study method is effective in facilitating learning, as it increases critical thinking skills, increases theory-practice integration, and increases the students' presentation skills and professional confidence (Malesela 2009:1).

2.4 Conceptualising CBL

2.4.1 Defining CBL

It would seem that despite a wide usage of CBL, its conceptualisation and definition depends on the discipline and type of 'case' employed (Thistlethwaite et al. 2012). Dupuis and Persky (2008:1) describes CBL as an

active learning strategy, much like PBL involving small groups in which the group focuses on solving a problem (Barrows and Tamblyn, cited in Sanrud and Ranahan 2012:235). For Helms (2006:68) CBL can be defined as a

> … "*method that, involves studying actual situations-written as an in-depth presentation-in order to improve a student's problem-solving ability. Cases are typically used to investigate a contemporary issue in a real-life context. There are multiple issues to consider and many "correct" or viable alternatives to solve the case issues are presented".*

This definition echoes the idea that CBL can help students prepare to deal with the real-world problems they will face when leaving an academic environment, and ultimately, to find success within a specific business organization or profession by using these previously learned skills and experiences (Lee et al. 2009:179).

Christensen (1987) contends that CBL is a unique teaching and learning methodology as it immerses each student into case situations and demands thorough critical analysis to make decisions for resolving the problems within the case. CBL although novel in many fields seems to be tapping on tried and tested apprenticeship method of *learning by doing* (McNair 1954). This undoubtedly student-centred approach allows students greater individual and collective responsibility in playing a more central role in the learning process than do traditional pedagogies. Mustoe and Croft (1999:471) augment this view by observing that at the centre of CBL more emphasis is put on learning in a clinical setting, in a creative student-centred manner:

> *"Each student first goes over the case individually, then collaboratively merge individual perceptions into an improved comprehension of the case through intense small group discussion, and finally communicating his/her insights in a debate with the whole class".*

Pertinent to all the definitions is the fact that 'CBL facilitates learning transfer and real-world applicability' (Lee et al. 2009:178); multidisciplinary resolution of interrelated problems (Kjærulff et al. 2009:4); creation of interactive and animated classes (Light 1994; Foran 2003). The other noticeable feature in the conceptualization of CBL is the tendency of most scholars to distinguish it from problem-based learning (Barrows and Tamblyn 1980; Barrows 1986; Williams 2004).

2.4.2 Different components of case based learning

As a strategy of teaching and learning, CBL has several components that need to be in place to ensure successful implementation. Firstly, the context (Institution of Nursing Education) has to be modified to accommodate CBL as a teaching-learning strategy. Secondly, the processes endemic to CBL have to be learned and introduced to both students and educators.

The structure consists of physical and human resources. Physical resources include libraries, internet facilities and customised laboratories (Cassimjee, 2007). Human resources include well-trained educators (facilitators), programme administrators, case study experts, and well-orientated student (Gray and Aspland, 2011). Sufficient physical infrastructure like libraries and internet facilities, enable students to do sufficient research demanded by case study method. Students need enough resources to understand the contexts of cases under study prior to discussion with their group members or class. Srinivasan et al. (2007: 3) notes the need for properly trained facilitators, who have expertise in developing and distributing case studies, to properly balanced groups. The facilitator has to have some expertise in group dynamics and case study facilitation, so that they can evade the temptation to lecture instead of facilitating, and can moderate the influence of over-exerting students and encourage the submissive ones (Srinivasan et al. 2007:3).

The process involves the implementation of the case method. According to William (2006:3), there are seven main processes involved in the implementation of cased based learning. These have also been discussed elsewhere (Dupuis and Persky 2008; Heitzman 2008; Hartsfield 2010):

- Small tutorial groups are formed.
- The clinical case or scenario is established to develop self-discovery processes.
- The clinical case is analysed and assimilated.
- Self-discovery of information, data, literature and clinical implications and manifestations.

- Supporting evidence, data and patient presentation is provided as required by teachers and student tutorial members.
- Hypothesise potential answers and clinical solutions.
- Collect and disseminate new information applicable to clinical situation.

According to Killen (2010:34), the process includes orientating students to case study learning, formulating learning outcomes, presenting the case and giving guidelines on what students need to learn or research. It also encompasses making sure that students study the material (in text or online) to prepare for class discussion. The success of this will be indicated by the way students participate in class and group discussions.

Role of the facilitator

The case study needs to focus on the most important concepts to be learnt. The facilitator should consider different questions about the case; the learning environment needs to be open, safe, and non-threatening to facilitate students' participation; all students should be engaged in the learning activity; summarising the key points by the teacher is essential. The lecturer guides the discussions to maintain order and to ask directing and guiding questions. He/she does not give answers to questions but he/she stimulates further inquiry, meaning-making and reflection support this process (Wolman, Kruger and Mitchell 2005; Uys 2005; William 2004).

Role of the student

Students are presented with the case either before class or in class. It is their responsibility to study the case before it is discussed in class. The students are also expected to play their roles as active members of a group, such as finding information, participating in the small group discussions, taking turns to present. Students become active participants as they engage with the case, explore all possibilities and consequences of potential solutions (Sanrud and Ranahan 2012:236). The students construct knowledge by making meaning of their world through active participation in their own learning (Gwele 1999).

Assessment

Wasserman (1994) asserts that with careful lesson planning and preparation, assessment in CBL can be done efficiently, effectively and fairly. He asserts that the learning goals and objectives established at the beginning are the key to success. According to Badders (2000:1), assessment is a continuous, ongoing process that involves examining and observing behaviours. The writer further refers to the notion of authentic assessments. O'Neill et al. (2007) gives example of the 'Triple Jump' assessment as an assessment that evaluates the student's ability to organise information, formulate hypothesis, identify individual learning issues and reformulate a case using newly acquired information.

2.4.3 Case based learning and problem-based learning

Both CBL and PBL are referred to as inquiry-based pedagogies. Srinivasan et al (2007) and Setia et al. (2011) compared the two approaches, referring to PBL as an 'open inquiry approach since facilitators play a minimal role and do not guide the discussion'. CBL provides more structure for the learner. In CBL, the facilitator uses guiding questions to bring the students back to the main learning objective, thus they referred to CBL as a 'guided inquiry approach'. In CBL, students prepare in advance for the session, whereas PBL students grapple with a problem, the focus being more on the process of discovery by students themselves.

More studies have been done on PBL than CBL both globally and in South Africa. Khanyile and Leroux (2012) conducted a survey to compare the extent to which different teaching approaches applied in the Baccalaureus Curationis programme adequately prepared graduating learners for professional competence. The results of the study confirmed the strengths of the case-based clinical-reasoning approach to teaching and learning. It further showed that the case-based clinical reasoning approach implemented at the university promoted competence and self-confidence in learners. In addition, this approach also enhanced their sense of responsibility to be actively involved in their own learning.

2.5 Merits and demerits of case based learning

Uys (2005:145) citing (Glendon and Ulrich 1997; Jones 1975; Levison et al. 1977; Rom and Mahler, 1986; Wynn, 1985) suggest the following benefits of using CBL:

2.5.1 Merits

Many studies have hailed the positive aspects of student-centred, self-directed, learning strategies like CBL. Many contend that CBL produces 21st century compliant professionals; professionals able to work in multi-disciplinary contexts, with acute abilities for critical thinking, confidence and autonomy (Gray and Aspland, 2011:38). Many other benefits of CBL cited in many studies (Srinivasan et al. 2007; Cassimjee, 2007; Harkrider et al. 2013; Kantar, 2013) are listed below:

- CBL causes students to participate actively in the learning process.
- It provides a real life situation to which the student has to apply theoretical knowledge.
- It demands decision-making and therefore forces students to make choices. Students can practise difficult decision-making in conducive environments.
- The analytical skills which students develop in this approach are increasingly demanded in nursing situations.
- There are many opportunities in this approach for collaborative work in groups, which is also essential for contemporary health care.
- There are few approaches to teaching/learning in which the socio-cultural aspect of health care can be so thoroughly integrated.
- It allows for high student participation even with large classroom sizes.
- It provides many opportunities for communication skills to be practised, including writing, presenting, debating, therapeutic and educational skills.
- It involves students reflecting on what they have done or decisions they have made.
- Students respond favourably to this method.

- The method is flexible and can be adapted to suit different groups, subjects and situations.
- Since the learning resources are identified for students, this curriculum can be used more easily than the problem-based curriculum in situations where students have difficulty accessing learning resources. This may be true in distance education and rural education.

Sanrud and Ranahan (2012) add to the list by identifying the strength of the opportunity to raise students' self-awareness as they engage with the actors in the scenario in a meaningful way. As much as benefits form such a long list and more, proponents hold different views regarding covering the course content, as discussed in the next paragraph.

2.5.2 Demerits

Proponents of CBL agree on the benefits of this teaching-learning approach but also highlight a few challenges that have been encountered with the implementation process. Srinivasan et al. (2007) argue that providing answers or direction towards answers to key clinical or ethical questions effectively stifles curiosity and that without effective faculty development, the CBL format may encourage faculty to lecture instead of facilitating. The detractors also feel that CBL encourages a spoon feeding mentality of learners. This is supported by Blumenfeld et al. (1991); Shulman, Skykes and Bird (1992). Other challenges cited are lack of student engagement and participation and lack of commitment. It is suggested that the facilitator prepares the students well for the learning activity (Sanrud and Ranahan 2012:238).

2.6 Conceptual framework

The conceptual framework guiding this study will be two-fold: the programme document that gives rationale for the usage of CBL as a pedagogical approach of choice at the UoT under study, as well as the Donabedian Framework that aids the assessment of case-based learning.

2.6.1 Programme document

The conceptual framework of CBL at the University of Technology under study is contained in the policy document for the nursing programme namely *Increasing the production of professional Nurses in South Africa: A Proposal for Establishing a Four-Year B. Nursing Programme* of 2008 (Gwele et al. 2008). Besides giving a rationale for the Bachelor of Nursing Programme, the document also gives prescription to the pedagogical preference in training effective health practitioners in South Africa. The programme document makes reference to the *White Paper on the Transformation of Health Care System in South Africa (1997)* which calls for 'a relevant and reality-based education in the health profession' (Gwele et al. 1998:7).

Section 1.3 of the Programme Document is entitled 'A Community and Case-based Four-Year Bachelor of Nursing Programme: An Opportunity'. This section specifically talks to the teaching methodology of the new programme in line with the calls for transformation by the Department of Health. The choice of the teaching and learning methodology is a function of 'educational, administrative and financial' factors. The document argues that the educational objective of this new nursing programme is to facilitate the development of

> *"Life-long learning skills, inquiring and critical thinking minds, as well as compassionate and caring nurses with a keen awareness of the interrelatedness of world of politics, economy and global health"* (Gwele, 2005 cited in Gwele et al 2008:7).

The document argues further that in as much as a problem-based curriculum will be the suitable vehicle for attaining these objectives, case-based learning is financially and administratively desirable. According to Gwele et al. (2008), this is because 'case-based learning can achieve the same educational outcomes as problem-based learning without the added strain on resources'. CBL was therefore the pedagogical approach designated for the new programme, due to its ability to link theory and practice without expending too many resources. The outcome anticipated from the programme, which CBL was expected to deliver was very comprehensive:

> *Not only increase the number of professional nurses in South Africa, but produce a particular kind of professional nurse …clinically-focused, service orientated, independent professionals who will be able to render emancipatory care in all spheres of health care …as well as a critical understanding of social political and economic determinants of health (Gwele et al. 2008:8).*

The current study will therefore assess the structure (inputs) and processes based on this conception of CBL. This concept is captured in the logic framework below:

Table 2.1: Logic Framework for CBL at a UoT

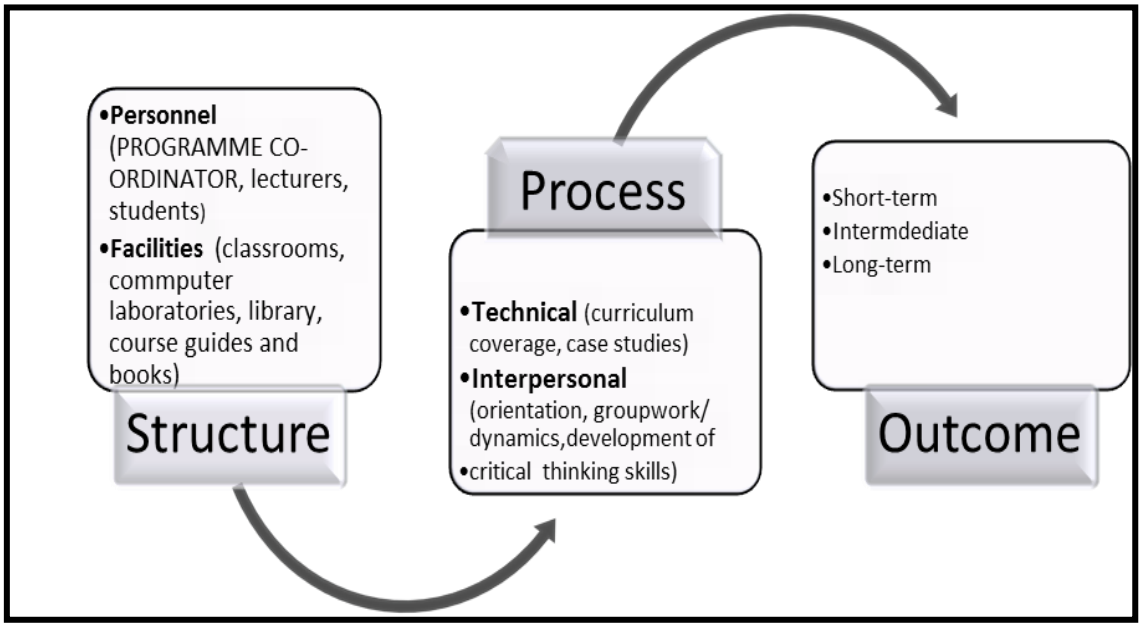
INPUT	PROCESSES	OUTPUTS	OUTCOMES		
			Short-term	intermediate	Long-term
Learners	Recruit 100 students annually	80% pass	Graduate at least 80% of nurses per annum	Staff KZN Primary Health Care facilities with competent nurses	Improved nurse/population ratio in South Africa
Lecturers and technical staff	Recruit, train and retain quality staff	Staff recruited, trained and retained	Quality teaching and learning	Highly competent nursing educators	High level of nurse education in South Africa
Infrastructure (classroom venues, laboratories, simulation models, library)	Acquiring necessary equipment and infrastructure Training staff and orientating students on usage	Sufficient equipment for CBL activities Staff and student orientated on the usage of equipment	Quality teaching and learning Improved staff capacity for equipment usages and student orientation	Well-equipped teaching and learning environment Competent staff	Well-equipped nursing training institutions in South Africa
Learning material (case-studies, expert technical support)	Case studies, fieldwork, developmental case study, face-to-face group discussions, formative and summative assessments, reflective journals and portfolios.	Case-based reasoning, Mastering case studies Content coverage, Reality-focused learning Curriculum coverage	Annual student performance data gains in higher order thinking	Graduates with improved problem solving skills, critical thinking, good and fast judgement in decision making.	Increased pool of continuing learning candidates, good nursing and policy leadership
Administrative and financial resources	Identifying students at risk and offering group and individual assistance Staff capacity development workshops for designing effective learning material	Annual student progress records Staff records Programmes records All staff trained and participated in development workshops	Improved learning capacity Improved staff capacity for learning material design	A number of nurse educators with requisite knowledge, skills and attitudes for innovative and active teaching and learning approaches and thus provide leadership in nursing education	A critical mass of dynamic and innovative nurse educators

Adapted from Gwele et al. (2008:10-12)

2.6.2 Donabedian framework

The evaluative aspect of the study is based on the Donabedian framework for quality assessment. In general, Donabedian framework is conceived as a conceptual model that provides criteria for the assessment of the quality of healthcare and service (Sardasht et al. 2013; El Haj et al. 2013). First designed by Avedis Donabedian in 1966, the model assesses a programme through three categories namely structure, process, and outcomes. These are sometimes referred to as standards (Ammenwerth et al. 2007; Bahrami et al., Jlassi et al. 2007; Kelley and Hurst 2006; Kunkel et al. 2007). These standards are necessary for effective functioning and can be applied to evaluation of CBL as a component of a programme. A standard can be defined as an established criterion or model against which results can be compared (Oxford Advanced Leaners' Dictionary 2007). Standards which are applied to CBL are presented as follows:

Figure 2.1: The Donabedian Framework



Adapted from El Haj et al (2013:20))

Structural standards

In CBL, structural standards will refer to the philosophy and mission which underpins the undergraduate nursing programme of the institution under

study; the managerial structure, the co-ordinator of the Undergraduate Nursing Programme; the operational structure of the lecturers, students and support staff. This is in line with the Donabedian Framework that contends that the structure consists of the physical facility, equipment and human resources, as well as organizational characteristics such as staff training and payment methods (Donabedian 2003). In the present study, the structure will also entail the philosophy and the mission underwriting the nursing profession and the training of healthcare practitioners.

The philosophy behind any pedagogical approach to the training of health care practitioners is established by the South African Nursing Council (SANC), which sets standards and stipulates minimum requirements for the nursing profession. The mission of the Nursing Department also aligns to the national aims and objectives of training health care practitioners. The mission is therefore, to:

- respond to the health needs of the people of South Africa and the rest of Africa
- provide holistic nursing education in a values-driven environment
- provide the highest standard of teaching, learning, research and community engagement
- ensuring the development of critical reflective nursing practice and
- empowering staff and students to succeed.

These are part of the structure and the context within which CBL as a programme is embedded.

The PC is part of the structural standards since she is the one who manages and monitors the curriculum, number of students and lecturers, as well as the resources assigned to the programme. The class-rooms, libraries, computer laboratories, ancillary personnel, administrative personnel and adequate communication facilities, also form part of the extended context.

Facilities

Facilities include class-rooms with adequate space, lighting and controlled temperature; furniture (designed for case studies' group discussions), libraries, computer laboratories, skills laboratories, well maintained ablution facilities, sports field and record keeping. In this research, structure would refer to the entire educational context and available resources for CBL. this include the philosophy and mission, the management (PC), the lecturers, the students, the policies and procedures, the SANC regulations, the facilities such as the class-rooms, offices, the furniture, the libraries, the computer laboratory, the books, the data projectors and screens, books, stationery, telephones and other communication systems, transport and finances to support the implementation of CBL.

Process Standards

According to Donabedian's Framework for evaluating programme process standards are the activities that are carried out by the management, the lecturers and students to meet set standards and to articulate policies and procedures which are used to facilitate the implementation of CBL within the nursing program (El Haj et al. 2013). In short, the process includes all the action that facilitates the implementation of CBL within the programme. According to El Haj et al. (2013:20), the process can be assessed at two levels: technical and interpersonal. The technical refers to the scientific theories and models as well as the clinical procedures that constitute the nursing profession. On the other hand, the interpersonal aspect consists of the human and ethical aspects of the programme's implementation. It also encompasses the transmission of soft (attitudinal) skills and experiences from the instructors to the learners. In other words, technical processes have to do with what is delivered, while interpersonal processes deal with the manner in which the programme is delivered.

The process therefore comprises of the leadership, managerial and instructional activities, and can be summarised as:

- educational design (the curriculum) and implementation
- facilitation of learning

- assessment of achievements
- interaction and co-operation between the various role players.

These process standards also include planning and development of the programme regarding content, strategies, assessment procedures, co-ordination and control, a master plan from which all activities flow.

Outcomes standards

Any evaluation of a programme has to do with the determination of whether the proximate and ultimate purposes have been achieved (Ransom et al. 2005). In the current study, programme elements that should be assessed to evaluate the attainment of outcomes standards include the following:

- quality of participation of various role players
- measures taken to ensure effective cooperation in the implementation of CBL
- the realism and feasibility of CBL in educational context of undergraduate programme
- improvement in educational and clinical skills of learners
- changes in the quality of student nurses' academic and clinical performance.

The indicators of *intermediate outcomes* (outputs) include the coverage of the curriculum, the understanding of cases, multidisciplinary resolution of case based problems, the successful completion of modules for which students have registered, as well as the ability to link between clinical cases and real-life situations. The *long-term outcomes* (impacts) will include the development of a critical understanding of clinical cases and the application of knowledge and skills gained through CBL in real clinical cases.

However, due to time limitations and the duration of time that the programme has been in place, the study did not evaluate the outcomes. The rest of the study will be largely based on assessing the structure and the process of CBL, as indicated in the study objectives. In any case, Donabedian cautions

that each of the three domains has advantages and disadvantages that necessitate researchers to draw connections between them in order to create a chain of causation that is conceptually useful for understanding systems as well as designing effective programs (Donabedian, 2005).

2.7 Justification of the current study

Despite the popularity of CBL as a preferable pedagogy in health-related fields, there has been criticism in literature on its design and implementation. This study was therefore aimed at evaluating the structure and process of CBL at the UoT in South Africa. The majority of studies on CBL have been carried out in Europe and America, leaving the global south short of evaluative studies of teaching and learning methodologies. This study therefore aims at addressing this geographical gap. The literature also alludes that when design and implementation are compromised, CBL might not yield its requisite merits. Since CBL is student-centred, the evaluation of students' experiences in this study is aimed at revealing whether the study is doing what it aims to do for the Nursing Science students, which is evaluation of CBL. A methodological gap was also found in literature, in which most studies done on case-based learning tend to focus on the outcomes of methodologies, and how different stakeholders perceive the methodology. This is also true of studies done on CBL strategy in South Africa (Cassimjee 2007; Malesela 2009). This study evaluates the components of CBL; posing implicit questions of sufficient implementation. As much as the study will seek to identify the perceptions and experiences of students on CBL, investigating the adequacy of the structure and procedural aspects of CBL will be an integral part of this study.

2.8 Conclusion

The reviewed literature shed light on various aspects of CBL, how the scholars describe and discuss what it is as well as what it is not, globally and locally within the delivery site. The next chapter will discuss the research methodology as well as the theoretical framework.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter presented a literature review and the conceptual framework on CBL. This chapter presents the research methodology of the study. The aspects addressed will include research design, research setting, sampling process, data collection, data analysis and ethical consideration. Since the present research aims at evaluating the structure and process of CBL as pedagogical approach at a university of technology, the study has used the research paradigm most appropriate for answering its purpose and objectives.

3.2 Research methods

3.2.1 Research design

Notwithstanding the semblance of triangulation, this study is qualitative in nature, governed by an interpretive paradigm. According to Polit and Beck (2012:487), the qualitative design merges together various data collection strategies and is capable of adjusting to information during data collection. The strength of qualitative research is in its ability to unpack intangible aspects of a research phenomenon in order to provide complex descriptions of people's experiences and perceptions (Bernard and Ryan 2010). To achieve this, the researcher utilised semi-structured interviews with students of the CBL programme.

This is an intrinsic case study design which enabled the researcher to merge interview data with records in order to gain insight into the implementation activities and details as practised at the UoT under study. According to Fidel (1984), case study as a research method brings together many data collection methods (triangulation), in a bid to capture the complexity of a single case.

As a research method, case study seems appropriate for investigating phenomena when (1) a large variety of factors and relationships are included, (2) no basic laws exist to determine which factors and relationships are important, and (3) when the factors and relationships can be directly observed (Fidel 1984:274).

However, over and above the above-mentioned criteria, the researcher does not have to select the case but an intrinsic case study focuses on the case because it is

interesting (John and Rule 2011:8). Accordingly, ‘case study method is a popular approach that allows researchers to develop and present an in-depth view of a particular situation, event or entity’ (John and Rule 2011:4). Yin (1989:11) gives a more comprehensive description of case study:

> *Case study is an empirical enquiry that investigates a contemporary phenomenon in-depth and within its real life context, especially when the boundaries between phenomenon and context are not clearly evident. The case study enquiry copes with the technically distinctive situation in which there will be many more variables of interest than data points, and as one result relies on multiple sources of evidence, with data needing to converge in a triangulating fashion, and as another result benefits from the prior development of theoretical propositions to guide data collection and analysis.*

Despite the fact that the researcher found CBL interesting as a teaching learning approach, the implementation of this pedagogical approach includes various factors that interact in ensuring the output. Most importantly, the case study method was deemed appropriate for the current study, since CBL as a pedagogical approach (and a case) cannot be abstracted from its context for the purposes of study. The efficient investigation of CBL as a case demands that both the case phenomenon and the context be part and parcel of the case study. Below is the case study plan which summarises the components and activities in the current study.

Table 3.1: Case study plan

Research questions	Participants	Sampling strategy	Data collection methods	Data analysis
1. What CBL structures and processes exist at the UoT? 2. How do these structural and procedural components support CBL?	Programme Co-ordinator	Purposive sampling	• In-depth interviews	• Interview notes read Organised Categorised • Allowing for themes to emerge from multiple sources of evidence; validating interview data with students' records • Developing converging lines of inquiry, creation of a case study data base
3. What knowledge and understanding do students have on CBL? 4. How do students experience CBL as a method of teaching and learning?	Students	Purposive sampling	• Semi-structured interviews,	

In the above plan, the CBL approach is the primary unit of analysis: (1) CBL in the teaching and learning of General Nursing Science and Midwifery. The researcher captured in detail deep meaning in interviews to understand details of interactions between lecturers and students (Lapan and Quartarolli 2009). An inductive approach was used since the researcher derived themes from the narrative responses of the interviewees and identified patterns from the themes (Polit and Beck 2012).

3.2.2 Study setting

The study took place at a UoT in KZN. The campus is situated in a semi-urban township, with the effect that most of the students are from peri-urban areas, rural areas or previously disadvantaged groups. Students are largely black South Africans and from various provinces. The Nursing undergraduate programme

shares the campus with programmes from two other faculties. The majority of the students come from outlying schools where OBE was used and the lecture method predominant. Most of the students experienced CBL for the first time as first year students at the UoT.

In as much as the campus at which the study took place is part of a large university, the Department of Nursing within this campus is relatively small, with ten full time lecturers including the PC, three part-time lecturers and nine clinical instructors. However, large groups of not less than 100 students are admitted annually. The case-based method of teaching and learning was introduced in the programme in 2010, making it relatively new in the nursing department as a teaching-learning method.

3.2.3 Sampling process

Qualitative studies rule out statistical (probability) sampling in favour of criteria-based (non-probability) sampling. This type of sampling requires that the researcher specify in advance a set of attributes, factors and characteristics that the study must address (Cohen et al. 2011:229). Purposive selection was used in selective participants for this study. Purposive sampling is selecting a sample 'on the basis of your own knowledge of the population, its elements, and the nature of your research aims'. Purposive sample is also known as judgment or judgmental sampling strategy (Babbie and Mouton 2001:97). This was coupled with intensity sampling to include information rich informants. This sampling was suited for the case study as the researcher wanted a variety of informants to enrich the study and to capture core experiences such as those of people with different view- points on the studied topic. Participants included both males and female students, including those who were repeating modules. After the aims of the study and their right to participate was explained students were instructed to write naïve sketches of 80 to 100 words, consisting of two questions as indicated in appendix 7. The criteria for selection was the ability to explain CBL in question one of the naïve sketches and to articulate their experiences of CBL satisfactorily in question two of the naïve sketches. Participants whose response to question one of the naïve sketches indicated that they

understood CBL and whose response in question two of the naïve sketches gave a description of their experience of CBL were interviewed.

Inclusion criteria

In the present study, the researcher had to ensure that the sample consisted of undergraduate Nursing Science students taught through CBL approach and registered for General Nursing Science and Midwifery. Seventy-eight students were included in the population of the study.

The programme coordinator (PC) for Nursing Science was also included.

Exclusion criteria

Students in the first, second and fourth levels of study were excluded. Students from other departments and the other members of staff were also excluded.

3.2.4 Data collection process

The study's main sources of data were interviews conducted on student participants and the programme coordinator (PC). Programme documents and student records were used to validate interview data.

Programme Co-ordinator (PC)

The PC was interviewed by the researcher using a voice recorder. Her permission was sought for use of a voice recorder. An appointment was made earlier by the researcher Interviews were held in an unused office in the Nursing department. The PC read the letter of information and signed the consent form and the interview was conducted and records, that is, the subject files and the programme files were used to validate interview data. The sessions lasted for fifty-five minutes and one hour respectively.

Students

In case study research, it does not have to be the representativeness in numbers that is used, but a number that will give depth of the information (Rule and John 2011; Barbie and Mouton 2004). The researcher started semi-structured interviews with students from the student population of seventy eight who wrote naïve sketches

until saturation was reached at ten students. Data saturation is when categories and themes in the data become repetitive and redundant so that no new information can be collected by further data collection. The researcher interviewed students over two months at the rate of about two students a week. Confidentiality of the interviews was explained to students. At this level the students were studying their BTech nursing research module. They understood the importance of confidentiality. Students were interviewed and recorded by the researcher, using a voice recorder. Participants' permission was obtained to voice record interviews. The use of an interview guide enabled the researcher to focus on the necessary issues but did not confine the interviewer to the same sequence with each interviewee. Interviews were conducted in a room which offered privacy and quietness for recording. Interview times were agreed upon by both researcher and interviewee to avoid interfering with classes. Their records, that is, the study guides and case studies validated the interview data.

3.2.5 Pre-testing of interview tools

The semi-structured interview questions were pre-tested to assess whether the research questions were realistic and workable and to eliminate any misinterpretations. Out of seventy-eight who wrote the naïve sketches, three students whose naïve sketches indicated understanding of CBL and how they experienced CBL, were phoned and appointments were made for interview dates and times. The questions were answered well by pre-test interviewees and no major changes were made to the semi-structured interview questions. The minor changes involved merging of the questions" Rate your satisfaction with CBL ..." and "Rate your frustration with CBL... ", into one question, "Rate your satisfaction /frustration with CBL. This pre-testing of the tools was to ensure reliability and validity and to identify logistical problems that might occur.

3.2.6 Experience of the interviewer

The researcher is a clinical instructor at the University of Technology under study, in which the case-based learning is being implemented. She has worked at the University of Technology for three (3) years and as a nurse educator for more than

thirty (30) years. The researcher is therefore familiar with both the demands of the nursing profession and the processes within the UoT.

3.2.7 Data analysis

Data analysis is the process of bringing order, structure and meaning to the mass of collected data (De Vos et al. 2005). The study used thematic analysis in which the audiotaped information was transcribed, coded and categorised. The coding and analysis was started immediately after transcribing.

During this stage, the audiotaped information was transcribed, coded and analysed. Assistance of a transcriber and co coder was sought. Data was analysed according to the method described by Tesch, (Cited in Creswell 2009:186). The process involved the following:

- Verbatim transcription and analysis of interviews by the researcher, a transcriber and co-coder.
- The researcher and transcriber read the transcripts and compared them with the audiotaped interviews.
- The researcher and co-coder read the transcripts for the second time in order to identify the underlying meaning.
- The researcher and co-coder separately selected the most informative interviews. Notes were made on the margins of the transcribed interviews. This process was repeated with subsequent interviews.
- Similar topics were formed into clusters under topics.
- The researcher and co-coder formed themes and subthemes from these topics.
- The researcher and co-coder analysed the data separately and met to discuss identified themes.
- Literature was reviewed to verify the findings.

3.3 Research rigor

The rigor of qualitative research is described differently than quantitative research. In qualitative research rigor is determined by its trustworthiness, which ensures the extent to which the results can be trusted (Given and Saumure 2008:896).

According to Lincoln and Guba (1985:290), trustworthiness refers to the 'truth value' of a research study, its credibility, transferability, dependability and conformability.

Credibility

Credibility refers to confidence in the truth of data and interpretations thereof (Polit and Beck 2012: 175). Patton (2002:552) asserts that the credibility of qualitative research depends mainly on rigorous methods, credibility of the researcher and philosophical belief in the value of qualitative inquiry. The triangulation and corroboration of data sources enhanced credibility, as records data supported or refuted interview data.

The researcher conducted interviews, worked with a transcriber and co-coder who is experienced in research, did member checking, analysed with co coder's assistance immersing herself in the data, to ensure credibility; firstly to get the general idea, secondly to code and finally to thoroughly check emerging themes and patterns to make sure nothing was missed. The semi-structured interview questions were pretested to eliminate any misinterpretations and adjusted as recommended.

Dependability

A study meets criteria for dependability if when the research techniques are repeated in the same context with the same methods and with the same participants; similar results are obtained (Polit and Beck 2012:175). Dependability is reliant on credibility. Data was collected from third year undergraduate nursing students who had been exposed to CBL from the first year of the programme continuing to their third year of study. Copies of students' records, which were used for the study, as well as recorded interviews and transcriptions, were retained in a safe place for future reference and scrutiny. Keeping of notes on any of the decisions made during data analysis, keeping raw data for interested researchers to crosscheck or verify how interpretations were made, ensured dependability. The researcher worked under the close supervision of experienced supervisors to ensure credibility.

Confirmability

Confirmability refers to the extent to which the researcher can demonstrate the objectivity or neutrality of the study. Simplified, it means that the study must be free of personal bias (Polit and Beck 2012:175). Participants were selected from a group

of students whom the researcher did not teach. Data collection approaches, decisions on what data to collect, raw data, analysis notes and interpretation of data were documented to ensure confirmability.

Transferability

Transferability is the extent to which findings can be generalised to or have applicability in other settings or groups (Lincoln and Guba 1985:321). The findings of this study confirmed that the same framework can be easily applied to other groups of students and lecturers as it proved that evaluation of CBL could be guided by the standards of the Donabedian model. The experiences of students of CBL can be determined using Bruner's and Piaget's models of Constructivism and discovery learning respectively. The researcher also ensured transferability by clearly describing the nature of the participants, research method, data analysis and interpretation of the findings.

3.4 Ethical considerations

Ethical standards include standards relating to rights: every individual is entitled to the right to privacy and dignity. A research study is subject to codes of ethics and good practice for the protection of the participants (Polit and Beck 2012:152). Ethical codes are based upon generally accepted moral values of respect for individual beneficence, respect for human dignity and justice. To ensure ethical considerations, the following three broad principles, on which standards of ethical conduct research are based, were followed (Polit and Beck 2012:152).

Beneficence

Beneficence imposes a duty on a researcher to minimise harm and maximise benefits. Polit and Beck (2012:152) state that it is the researcher's duty to avoid, prevent or minimise unnecessary harm in studies with humans. The authors further state that participants have a right to be protected from exploitation and should be assured that their participation or the information they might provide will not be used against them. In this research, the right to freedom from harm and discomfort was maintained, as participants were not subjected to any risk of harm or injury. The study was reviewed by the Ethics Committee of the UoT and the clearance thereof

was granted (Appendix IV). Permission was sought from and granted by research management at the UoT; these include the Research Director (Appendix I) and Head of Department of Nursing (Appendix II).

Respect for human dignity

Respect for human dignity includes the right to self-determination and to full disclosure (Polit and Beck, 2012:154). The information letter explaining intention of the study was provided to the participants before commencement of the study, and the participants signed a consent form (Appendix V). Participation in this study was voluntary and participants were informed of their right to withdraw from the study even if they had given their consent. No form of coercion was used on those individuals who refused to participate in the study. Confidentiality of records was maintained by being handled only by the researcher and her supervisors. When records were not being used, they were kept under lock and key by the researcher.

Justice

Polit and Beck (2012:155) state that justice involves a participant's right to fair treatment and their right to privacy, where participant selection has to be based on study requirements and not on a group's vulnerability. Selection of potential participants was open and fair without any discrimination. To ensure the right to privacy, participants' details were not written in the interview records. Interview records were given numbers in the report.

Reflexivity

The study was conducted by a researcher who is a clinical instructor at the University of Technology under study, in which the case-based learning is being implemented. The researcher has worked at the University of Technology for three (3) years and as a nurse educator for more than thirty (30) years. The researcher is therefore familiar with both the demands of the nursing profession and the processes within the UoT. It was then imperative that the researcher be aware of the intrusion of her experience into the process of conducting the research. Charmaz *(2006:188-189)* defines reflexivity as,

the researcher's scrutiny of his or her research experience, decisions and interpretations in ways that bring the researcher into the process and allow the

reader to assess how and to what extent the researcher's interest, position and assumptions influenced inquiry. A reflexive stance informs how the researcher conducts his or her research, relates to the research participants and represents them in written reports.

The researcher ensured this reflexivity through constantly checking with participants, so that they confirm whether her interpretations of their inputs were consistent.

3.5 Conclusion

The thrust of this case study design of a case study teaching learning approach is in the intensity and depth of the description of experiences of the undergraduate nursing student who has a story to share with those who will have access to the research report. The evaluation of the pedagogy focused on the structure and process, as the outcome can be relevantly measured after completion of the programme. The next chapter will present the results of the analysis of interview data as well as findings of the evaluation against given standards and criteria.

CHAPTER FOUR: PRESENTATION OF THE RESULTS

4.1 Introduction

The previous chapter presented the research methodology. This chapter will present the results of the analysis. This will include data from the records of student participants and the records from the head of the programme. The results of the records analysis will be juxtaposed with interview data as records are not a separate source of information but serve to complement or refute the interview data in this case study. The student participant interview results will further be integrated in the evaluation of CBL. The students are part of the structure of the undergraduate nursing programme and thus their experiences of CBL will serve to inform part of the process in the evaluation of CBL as the unit of analysis in this case study.

Data was analysed according to the method described by Tesch (Cited in Creswell 2009:186). The method of this data analysis is outlined in chapter three. The researcher coded each script using different colours of highlighters to indicate codes and highlights on concepts that were similar. Every transcript was coded in order to develop a comprehensive framework for analysis. The framework was then used for more detailed coding and thematic analysis. All the transcripts were analysed and relevant concepts were grouped, merged and ultimately reduced to four themes.

The main categories that emerged were as follows: group dynamic issues, transfer of knowledge to clinical practice, promotion of self-directed learning, covering of indicative content, role of lecturers, role of students, merits and demerits. These were reduced to four themes.

4.2 Section A: Student interviews

4.2.1 Demographic Data

Table 4.1 Demographic data of the interviewed participants

CATEGORY		STUDENT PARTICIPANTS	PROGRAMME CO-ORDINATOR
Number of participants		10	1
Gender	Female	5	1
	Male	5	0
Age		18-25	50+
Level of study		Third year	Not applicable

As evident from Table 4.1 above, ten students participated in semi-structured interviews, and the data from these interviews was transcribed and validated with participants. The researcher then proceeded to analyse the responses using thematic analysis.

The main question was:

- Describe the case method of learning as you practiced it from the first year to date at this University of Technology (UoT) as well as your experience with case study method of teaching in relation to its impact in your learning and in you as a person.

Further questions were as follows:

- Describe the orientation/guidance that you received from the lecturers regarding CBL?
- Describe the case study classroom activities?
- How do you compare case study learning with high school learning methods?
- Describe the impact that CBL has on you as a student and in your life in general.
- Rate your satisfaction with case studies on a scale of 1-10.

In order to increase the trustworthiness and the transparency of the data analysis process, the researcher displayed collected data using tables. The researcher read the transcripts severally in order to acquire a feel for each description in all the transcripts and got immersed in how the participants experienced CBL at the UoT. Thereafter, significant statements pertaining to participants' experience of CBL was extracted and meanings were formulated from these significant statements. The formulated meanings were then grouped into cluster of categories that reflected a unique structure of cluster of themes, and this lead to exhaustive description of the participants' experience. All the above steps assisted the researcher to arrive at the fundamental structure of the phenomenon and this was validated as correctly represented by all the participants.

4.2.2: Themes

The following section describes how themes and subthemes were generated from significant statements in student's responses to interview questions

Table 4.2: Significant statements

Significant Statement	Participants' Number	Page No	Lines No
It allows you to think critically so that in the future when you are faced with the situation then you will remember the lecturer that has presented the case before	S/F5	29	250-253
With case studies I would say one of the things I didn't like about them …..perhaps in the group where they'll be presenting trigger 2 they didn't go and collect all the information and when they are presenting they don't speak in the clear language in a clear sense that you will understand. So now you get that you didn't understand the next question so you have to go back and do it yourself	S/F1	3	52-53
But here with CBL the learning is advancing and our (building on past knowledge)	S/F6	36-37	354-356
Yes we did receive guidelines from the lecturers when they first introduced the case studies to us, as to how it's going to help us and to acquire our own information and how to apply that information to our studies	S/F2	7 9	173-175
I am more satisfied with group work, because when I work with groups the work load is reduced and if for example, we have six questions and we divide these six questions amongst each other and when we meet we compile the work and discuss it together	S/F3	15	389-390
Yes the guidelines help us because it gives us an introduction of what to be covered and how to prepare us and gives us an introduction of what to be covered and how one should prepare in the whole module	S/F4	25	112-114
I think it is very informative and encourages ones interest and growth to an individual. It has helped me in terms of thinking and some conditions or some of the things we have learnt are not only about the case studies but things that happen in real life			346-349

Table 4.3 Formulated meanings from significant statements

Significant Statements	Formulated meanings
Yes we did received guidelines from the lecturers when they first introduced the case studies to us, as to how it's going to help us and to acquire our own information and how to apply that information to our studies.	Lecturers initiated students into the reality of CBL and this means that lecturers introduced and orientated students to CBL.
At varsity, the lecturer comes with summarized work and what they require from you is to go and obtain 80% of the information. The lecturer will introduce the subject and the student should go and cover most of the content and the lecturer would then check if whether the student is on the right track	CBL means that students are involved in self-directed learning and their need to be involved in the active search for knowledge and information
I think it is very informative and encourages ones interest and growth to an individual	CBL provides participants with stimulating approaches to be a life-long learners
Lecturers really play a big role because when you come and present what you have found, the lecturer would tell you this is right and this is wrong or they'll add on what you have said or they'll tell you, you mustn't answer the question that way you must answer this way	Lecturers serve as the instruments of learning and also complement students' knowledge.
You have to think critically and see beyond not just reading and see what is written. You have to go deep and imagine what they were doing when you were placed in allocations or placed in hospital.	CBL illuminates participants to the need to be critical thinkers and reflectors
It has helped me in terms of thinking and some conditions or some of the things we have learnt are not only about the case studies but things that happen in real life	CBL assists participants to be well rounded learners due to diverse applicability of the knowledge gained through CBL.
Some group members don't cooperate even when there are given certain sections and tasks	Participants had problems and difficulties with group dynamics.

Table 4.4: Theme 1: (Role of lecturer)

Formulated meanings	Theme clusters	Emergent theme
• The lecturers using CBL approach usually communicate to the students what CBL is about, his/her expectation of the students and his/her roles in the learning process. • The students discussed that the lecturers play an active role in guiding them towards the content of specific cases, thereby assisting them to grasp information better.	Orientation to case studies	Role of lecturer
• Participants discussed that covering of the content was majorly the responsibility of the lecturer. • Participants also acknowledged the role played by them to ensure co-learning of the content by searching for information on their own	Covering of the content	

Table 4.5:Theme 2: (Role of students)

Formulated meanings	Theme clusters	Emergent theme
• Participants acknowledged that the case studies required group work which had to be done with cooperation with one another. • Participants described how group work enabled them to share tasks and idea which facilitated learning and better achievement of learning outcomes	Group work	Role of students
• Participants were given study guides to allow them to prepare for the cases in advance and this allowed them to explore broader alternatives to knowledge and information seeking • Participants met in groups to search for information relative to the group task collectively and they discussed strategies on how best to present information gained from various sources to fellow students and lecturers.	Reading through case before class discussion	
• Participants cited various sources where they sought information such as Google, library, Writing Centre and the subject lecturer to arrive at tangible conclusion relative to the cases. • Participant also discussed about the openness to explore new information that would assist in better understanding of cases	Searching for information	

Table 4.5:Theme 2 (Role of students)

Formulated meanings	Theme clusters	Emergent theme
• The participants' search for information about specific cases had to be presented to the class and in the presence of their lecturers using diverse teaching methods such as laptops, markers and drawings	Class presentation	
• Participants discussed that subject lecturers play important roles in making themselves accessible in the provision of insights that assisted students in better grasping of information relevant to specific cases	Consultation with lecturers	
• The relevance of the cases discussed in class transcended the environment of the classroom because they sometimes met familiar cases in real life settings (clinical environment) and this assisted them to apply their previous knowledge • Participants discussed that CBL equipped them with confidence to approach real life cases that patients presented with in the hospitals	Relating case studies to clinical experience	

Table 4.6: Theme 3 (Merits of CBL)

Formulated meanings	Theme clusters	Emergent theme
• Participants discussed how it assisted them to be able to work in groups • Participants could relate the knowledge gained from CBL to other aspects of learning such as during exams and this assisted in better grades • Participants had developed thirst for knowledge and self-directed learning strategies		Merits of CBL

Table 4.7:Theme 4 (Demits of CBL)

Formulated meanings	Theme clusters	Emergent theme
• Participants discussed frustrations with group members because some of them were uncooperative and difficult to work with • Participants also discussed that some groups discussed less sufficient information which meant more task for the individual learner who wanted to be well grounded in the cases		Demerits of CBL

4.2.3 Themes and Sub-themes

The following themes emerged from the responses given:

- Role of the lecturer
- Role of the student
- Merits/Benefits in CBL
- Demerits/Challenges in CBL.

4.2.4 Discussion of interview themes

(a) Role of the lecturer

Most participants discussed the role of the lecturer as the following:

- **Orientation to case studies**

Most participants indicated that they received study guides with case studies from the lecturers on the first day of the study block. Participants differed on the issue of the study guide. Some participants confused learning outcomes of each case with orientation to case studies. Some students said

> "*Orientation of the case study is very good…it gives one a picture of the outcomes and of what to expect throughout the case studies"* (Participant S/F 2).
>
> *"Guidelines help us because it gives us an introduction of what is to be covered and how one is to prepare in the whole module"* (Participant S/F4).
>
> *"CBL its case study where by you are given a study guide that has got a case study that you have to read*"(Participant S/F 7).
>
> *"the lecturer would give us study guides at the beginning of the semester on the first day." (*Participant S/F 4).
>
> "*guidelines are in the study guide and everything is explained there for us"* (Participant S/F3).

- **Covering of the content**

Participants saw the covering of content as the responsibility of the lecturer. Most participants stated that indicative content was covered in the case studies as case studies covered what was in the specific learning outcomes. When asked how the gaps were covered in cases where content or learning outcomes were not covered, some students stated that it was covered in

focus questions and by individuals who search the internet and in books. This is supported by the following statements:

"Now you know the content and outcomes and so forth, but it's for the student to research more and cover the content" (Participant S/F2).

"As a student I should see to it that I fill the gap, then I also need to ask myself if that content is going to come up in exams" (Participant S/F3).

> *"When we go to placements, you get to learn some of the things that you were not taught at the university. That's also when you go to your books and look at the conditions that you have learnt outside and see what you came across and this is what you were not taught in class but you came across it later on"* (ParticipantS/F 4).

Lecturers were also seen as having a clarifying and filling-in role during presentations as put by some students

"The lecturer poses comments, compliments and also adds on the information that we have provided" (Participant S/F6).

Students experienced various ways of covering content which also impacts on their role as CBL students.

(b) Role of students

Most students seemed to have a clear view of what their role was within CBL as follows:

- Working in groups or as individuals
- Reading through the case studies before they are discussed in class
- Searching for information
- Presenting in class
- Consulting the lecturers between classes for problem areas of work
- relating case studies to clinical experience.

This is evident in the following excerpts:

"After getting the case study we acquire more information through the use of search engines" (Participant S/F5).

"It's no longer the teacher's responsibility to tell the student information so it's the student's responsibility to find information" (Participant S/F5).

*"What they require from you is to go and get 80% of the information" (*Participant S/F3).

*"We usually gather information….then we go as a group and present it in class" (*Participant S/F4).

"The role of the student would be to ask questions to the lecturer where you feel there is a need for clarification about the case study" (Participant S/F7).

"I have benefited to work in groups, now I'm able to work in groups because you get to share ideas with colleagues" (Participant S/F6).

"*We work in groups and present our work in class"* (Participant S/F 3).

(c)Merits of CBL

All participants perceived CBL to be a better learning strategy than high school strategies where teachers stood in front of the class and gave them information. They were asked what impact CBL had in their learning and their lives in general and how they rated CBL on a scale of one to ten. All except one rated CBL at eight. One rated it at five. Some participants believed that case studies improved their learning styles.

The merits experienced by participants are evident in the voices of the following participants:

*"Case studies taught us how to answer questions, they taught us how to read scenarios and understand what is happening, take out important points and underline them" (*Participant S/F7).

*"I go back and recall what lecturers taught us in case studies that you first highlight the important information, read and read the case study until you fully understand it. So whenever I read something, I read and look for important points and read it again until I fully understand and then I will be able to answer questions" (*Participant S/F8).

Students also found CBL to be very informative and encouraging the individual's interest and growth, as one participant commented;

"It (CBL) encourages one to continue acquire the information because you always interested to know more about that topic or that particular illness, so

that when I come across a similar situation I would have enough information for me to be able help that person" (Participant S/F10).

Some students felt that the case study method of teaching and learning allowed for better performance in tests and examinations. For these students, passing tests and examinations was an important factor and a prime benefit as some participants stated:

"*For me, so far I think I normally pass exams and tests because most of the questions asked are the same questions asked on our case studies, so all that has changed my study pattern as compared to high school" (*Participant S/F2*).*

"As a student, I also need to ask myself if that content is going to come up in exams, or maybe it was left out purposely and it's not going to be set for exams" (Participant S/F3).

The participant quickly checked himself and added;

"…the main purpose of covering the whole content is to gain knowledge rather than exams…

I can work in groups and listen to other people's ideas … Case studies are more specific on what they want, you don't study everything even what you don't need" (Participant S/F1).

Group dynamics were highlighted both as merit and demerit issues by most students. Most students felt that working in groups made work lighter as it is shared among members and some saw group work as an opportunity to learn from others as evidenced by the following comments:

"I can work in groups and listen to other people's ideas… The case studies are more specific on what they want, you don't study everything even what you don't need" (Participant S/F1).

(d) Demerits of CBL

On the other hand, most participants regarded group work as a frustrating aspect of CBL. Some students scored group work between one and ten. Statements such as these were expressed by participants:

"The problem is with groups…….we are not the same as students. Some students they know that if I'm with so and so I know that work is going to be done and they don't do their part" (Participant S/F 5).

"At some point it does, (meaning that CBL does have frustrations) cause we normally work in groups cause some group members don't co-operate, so with regard to the frustrations I have, I'll give it 2/3" (Participant S/F3).

"The same people do the work and present. Other people hide behind others and don't do the work" (Participant S/F1).

Practical relevance was regarded as a merit by all participants who expressed it as one highly esteemed merit. They reflected that it was as if the clinical facilities were brought to the class-room.

"The case descriptions give us information about the patient that you going to find when you go for the 'clinicals'. So for us we would have the pre knowledge before we do the practical part of the care" (Participant S/F5).

"In case studies it is mostly things you experience in hospital" (Participant S/F1).

"Some of the scenarios we do experience them when we are doing practicals in the wards and you say I did this in class and this is what I must do and it does actually help" (Participant S/F4).

Table 4.8: Overview of the themes and sub-themes

NO	THEMES	NO	SUB-THEMES
1.	Role of the lecturer	1.1	Orientation to case studies
		1.2	Covering of content
		1.3	Case discussion
2.	Role of the student	2.1	Participation in discussion
		2.2	Searching for information
		2.3	Preparation for discussion
		2.4	Consulting lecturers
3.	Merits of CBL	3.1	Practical relevance
		3.2	Improve learning
		3.3	Improve performance in assessments
		3.4	Specificity
		3.5	Group dynamics
		3.6	CBL versus high school methods of learning
4	Demerits of CBL	4.1	Group dynamics

4.2.5 Students Records

Table 4.9: Presentation of student Records

ID	RECORD ID	RECORD TYPE	CONTENT	CBL EVIDENCE
S/F1 ***to*** **S/F10**	SRa - studyguide	SRa GeneralNursingScience 11	Specific Learning Outcomes Orientation to CBL in study guide	• 8 specific learning outcomes and assessment criteria • The orientation to CBL states the following: - *Method of teaching is case based* - *Student to participate actively to develop the subject content and meet expected learning outcomes* - *Preparation for class activity is compulsory* - *a critical thinking approach will be encouraged throughout the learning and assessment phase* - *Learners to read recommended and prescribed material before class attendance.* - *Class sessions will focus mainly on discussion, critique of and analysis of material not only on presentation of content.* - *Participation in class discussions cannot be productive if students do not prepare well for class.*
S/F1 ***to*** **S/F 10**	SRb-case studies		General Nursing Science11 Case studies in case study package	Case studies: each has a purpose, Specific Learning Outcomes, case description, triggers, focus questions, practical and resources
	SRa-study guide	SRa-Midwifery	Midwifery study guide	Class sessions will focus mainly on case studies, class discussions and self-directed learning. Students are expected to use the library and computer lab extensively in order to prepare well for class sessions
	SRb-Case studies	SRb-Midwifery	Case studies- a case study package within the study guide	The format of case studies is similar to that of GeneralNursingScience11

4.3 Section B: Programme coordinator (PC) Interview

This section will discuss the interview data of the PC as well as the supporting records related to the structure and process of the undergraduate nursing programme which embeds CBL. The PC was interviewed in her capacity as head or coordinator of the undergraduate nursing programme. She experienced the programme from its inception as lecturer and deputy to the then PC. The following main question was asked:

Describe case based learning according to your understanding with special reference to your role as programme coordinator and lecturer as well as the role of the case based learning student

4.3.1 Themes

In her discussion of CBL, the PC alluded to the following themes, which will be discussed at length in the following section: Understanding of CBL; Lecturers' role; Students' role, and; PC's role.

Table 4.10: Significant statements

SIGNIFICANT STATEMENTS	Participants' Number	Page No	Lines No
From the first year we introduce students into what the concept of case based teaching and learning is and they can understand it. From the first time they start with the syllabus it is engaging with the case. They engage with the case in order to develop the content.	1	1	10-12
My understanding of case based teaching and learning is where cases are almost real life cases are brought into the classroom situation for the students to interact, to analyze with them and to develop the content and each case has got specific learning objectives.	1	1	15-16
Instead of giving information the students are now bringing the information and share it with the rest of the class, and the lecturer merely facilitate and builds the student's knowledge by interacting and questioning the information that they present in the classroom..	1	3	56-57
In class students are expected to engage with learning so when they are presenting with the case work load is divided amongst groups. Within groups students are supposed to come together and read different texts and resources and come together with suitable set of questions related to the case…Then they have to present that case, then they have to present in a form of presentation in front of the class or it is a poster presentation, they can be as innovative as possible as they present that work to their to their fellow colleagues. The other students are supposed to be listening to the presentations so they all also engaging while they got their own work to do.	2	5	35-41
From the first year rite in April I remember, there was a workshop and an outside consultant came to do CBL. A kind of facilitation to enlighten the staff on how CBL should take place in the classroom. So they had workshops in every semester there has been workshops to develop cases. Staff was given that kind of support in developing cases and how to utilize them in the classroom.		7	63-65
Yes the curriculum is very broad and because the curriculum is very broad and the curriculum has been designed according to health needs in KZN. The common conditions are presented to the class and by virtue of being presented with most common conditions it is expected that once students have clear understanding of how the case unfolds. When they are exposed to something new they will continue with same method of learning and self-directed learning managing to learn the other conditions that they are exposed to.		6	51-54
It doesn't have to be monitored by the lecturers because if the student's need to know about the condition they will go and read about the condition, otherwise they not going to function effectively.	1	5	49-50

Table 4.11: Formulated meanings from significant statements

SIGNIFICANT STATEMENTS	FORMULATED MEANINGS
From the first year we introduce students into what the concept of case base teaching and learning is and they can understand it. From the first time they start with the syllabus it is engaging with the case. They engage with the case in order to develop the content.	The PC acknowledges that CBL is used in the UoT and that students were introduced to CBL right from their first year.
My understanding of case based teaching and learning is where cases are almost real life cases are brought into the classroom situation for the students to interact, to analyze with them and to develop the content and each case has got specific learning objectives.	The PC provides rationale for the CBL approach that is being used at the UoT by providing clarification about the cases that students work with.
Instead of giving information the students are now bringing the information and share it with the rest of the class, and the lecturer merely facilitate and builds the student's knowledge by interacting and questioning the information that they present in the classroom..	Students become more active in the learning process becomes they come to class prepared with knowledge that was acquired through their own personal and self-directed learning.
In class students are expected to engage with learning so when they are presenting with the case work load is divided amongst groups. Within groups students are supposed to come together and read different texts and resources and come together with suitable set of questions related to the case. Then they have to present that case, then they have to present in a form of presentation in front of the class or it is a poster presentation, they can be as innovative as possible as they present that work to their to their fellow colleagues. The other students are supposed to be listening to the presentations so they all also engaging while they got their own work to do.	The expectation of the students involves engagement with learning by becoming part of a group and also becoming innovative with their class presentations. Other students are expected to provide a conducive learning environment that facilitates learning.
From the first year right in April I remember, there was a workshop and an outside consultant came to do CBL. A kind of facilitation to enlighten the staff on how case based learning should take place in the classroom. So they had workshops in every semester there has been workshops to develop cases. Staff members were given that kind of support in developing cases and how to utilize them in the classroom.	The UoT provides workshops to orientate lecturers into the concept of CBL to assist them to become better prepared and positioned to effectively play the role of learning facilitator.
The lecturer has to prepare for the classroom, know and be familiar with the case and also have background learning and homework so that when students are presenting the case, the lecturer should have an idea of what is expected in the presentation. The lecturer has to know background information about the case, also need to have resources to refer students to when they can find information in the specific books the lecturer has to refer students to alternative resources it could be human resources or material resources.	The lecturer is involved with the ongoing learning of students using CBL in a number of ways such as prior class preparation, referring students to appropriate resources and a host of other roles.

Theme 1: Understanding of CBL

The PC seemed quite confident as she explained her understanding of case-based teaching and learning. She gave very comprehensive and substantial insights:

"Where cases which are almost real life cases are brought into the class-room situation in order for the student to interact with them, analyse them, in order to develop content, because each case got specific learning objectives. Those learning objectives would be covered within the case and in that way, students don't just interact with the information or the teacher just teaches the information or give the information" (PC).

She continued to explain:

"In a CBL situation, the lecturer becomes a facilitator for the students' learning instead of giving information. Students bring information and share it with the class. The lecturer merely facilitates and builds students' knowledge by questioning and interacting with the information that they have presented" (PC).

Table 4.12: Theme 1 (Understanding of CBL)

FORMULATED MEANINGS	EMERGENT THEME
• The PC displayed a good knowledge of CBL by outlining its components and the roles of lecturers, students and the institution. • The PC provides clarification on the CBL approach that is being used at the UoT.	Understanding of CBL

Theme 2: Role of the lecturer

From the PC's account, the following list of the lecturer's role can be developed:

- prepare for the class- room
- familiarise with the case, meaning that she has to know background information about the case so that when the students are presenting the case, the lecturer already has an idea of what is expected in the presentation
- refer students to resources if they don't find information in the book
- develop content where there is no case in a particular area of content

- develop new cases
- facilitate learning
- modify cases according to the changing health needs
- evaluate learning in the form of tests, examinations, according to the level of the students.

From her perspective, "*the lecturer has a big role to play"* in CBL.

The PC was asked whether orientation or guidelines were given to students as introduction to case studies. She explained the orientation in these words:

> *"In the first year, orientation is given in the study guide as to what the role of the facilitator, the role of the student during the case and how the case would be presented. There is a structured format given to the students as to how the case would proceed during the semester"* (PC).

Table 4.13: Theme 2 (Lecturers' role)

FORMULATED MEANINGS	EMERGENT THEME
• In order to facilitate the learning process using the CBL approach, lecturers prepare before the class, refers students to sources where information can be obtained, devel new cases and modify content in response to changing health needs	Lecturers' role

Theme 3: Role of the student

According to the PC "…*the students have an active role to play in the teaching and learning*". She continued to articulate some expectations for students in the CBL context:

> *"In class students are expected to engage with the learning, when they are presented with the case*" (PC).

> *"Within the groups, students are supposed to come together and read different texts and resources and come up with suitable answers to the questions related to the case…present the case in a form of a presentation, it could be a poster presentation, they can be as innovative as possible"* (PC).

> *"The other students are supposed to be listening to the presentation, engaging and giving comments or want more clarification"* (PC).

She went on to explain;

"Outside class they are expected to go and read about the case" (PC).

Table 4.14: Theme 3 (Students' role)

FORMULATED MEANINGS	EMERGENT THEME
• Students are expected to engage in self-directed learning which involves presentation of cases that was researched on their own. • Students work within groups and use varieties of methods to position themselves as active learners	Students' role

Theme 4: Role of the PC

The PC was asked to discuss the measures that the programme had in place in support of lecturers in ensuring their transition to the CBL method. She explained that regular workshops were planned to assist lecturers in developing and modifying case studies as well as conducting case studies in class. These workshops were conducted by the project director who is also a nurse educator and a professor who has written books and articles on CBL curriculum.

Table 4.15: Theme 4 (Role of the Programme Coordinator [PC])

FORMULATED MEANINGS	EMERGENT THEME
• The PC positions herself in such a way that staff are involved in awareness workshops about the basics of CBL. • The PC also ensure openness so that staff needing further knowledge about the use of CBL are assisted	Role of the Programme Coordinator

4.4 Evaluating the structure and process of case-based learning

Evaluation is the process by which a judgment is made concerning the relative value of something (Alspach 1995:112). In as much as there are different types of evaluation studies, there are many things that can be evaluated, from systems, policies, programmes to projects. The process of programme evaluation takes into account the various components of a program. For the purpose of this study, CBL is the programme under evaluation. The programme will refer to CBL as a component of the nursing undergraduate programme under study. According to Yin (1989: 11), the boundaries between a case and its real life context may not be clearly evident. John and Rule (2011:12) also add that a case study can place the

programme within its spatial and temporal context and explore the potentially complex relations between case and context.

Donabedian's model for evaluating health-care programmes has been used and adapted from its application to evaluation of a personnel development programme. The Framework consists of three main indicators: structure, process and outcome. The former two will be assessed in detail below, in line with the study objectives.

4.4.1 Structural standards

(a) Standard 1: Vision and mission statement

Criteria for evaluation

1.1 Prominently displayed

1.2 The mission statement refers to student development

Evaluation Outcome:

The head of programme displayed a University student hand book which has the vision and mission statement on its front pages.

"The nursing department is committed to respond to health care needs of the people of South Africa Through:

1. providing holistic nursing education in a values –driven environment;

2. providing the highest standard of teaching, learning, research and community engagement;

3. ensuring the development of critical reflective nursing practice;

4. empowering staff and students to succeed."

(b) Standard 2: Programme Management

Criteria for evaluation of PC:

- Coordinator of the programme is nationally certified as a nurse educator
- Has minimum qualification as a university lecturer

Evaluation Outcome:

- *Curriculum vitae of PC*
- *Current SANC receipt*

- *Job descriptor*

The above documents appear in the institution records

(c)Standard 3: Human resources – Lecturers

Criteria for evaluation of lecturers:

- Nationally certified as nurse educators
- Minimum qualification as a university lecturer
- Job descriptor as lecturer

Evaluation outcome:

- *Curriculum vitae of PC*
- *Current SANC receipt*
- *Job descriptor*

The above documents appear in the institution records

(d) Standard 4: Human Resources – Students

Criteria for evaluation of students:

- Admission criteria specific to program
- Registered for general nursing science and midwifery

Evaluation outcome:

All students have an active status for the modules that they are registered for as evident in the respective ITS registers and electronic class lists.

(e) *Standard 5: Material learning resources (classrooms, library, computer laboratory)*

Criteria for evaluation:

- Size, lighting, temperature control, learning equipment

Evaluation outcome:

Class-rooms:

- *Size is not adequate. Some class-rooms are smaller than the number of students. That shortfall has been compensated by dividing the groups into two.*
- *There is adequate lighting*
- *All class-rooms are temperature conditioned.*
- *They are equipped with: Writing Boards, data projectors, video screens,*
- *adaptable half-round shaped desks, movable, stackable chairs.*

Computer laboratory:

- *Size is not adequate. This is compensated by rotating the students at two hourly sessions per student, this is still not adequate.*
- *There are 44 computers. They are not enough*

Library

- *There is a library that is used by other facilities as well. The library is adequate. The Nursing lecturers are involved in updating of library material*

Table 4.16 Structural standards of CBL at the UoT

STANDARD No.	KEY CONCEPT	CRITERIA	EVALUATION OUTCOME
1	**Vision and Mission statement**	1.1 Prominently displayed 1.2Has referral to student development	• Appears in the nursing hand book • Empowering staff and students to succeed Appears in the nursing hand book • Empowering staff and students to succeed
2	**Human Resource** PC:	• Curriculum Vitae of PC • Certificate as Nurse Educator/SANC registration • Current SANC receipt • Job descriptor as PC	The PC is a registered nurse educator with a Masters' degree as evidenced by : • Curriculum vitae of PC • Certificate as nurse educator • Current SANC registration receipt, • PC's job descriptor
	Lecturers	• Nationally certified as Nurse educators • Minimum qualification as a University lecturer	All lecturers are registered nurse educators with a masters' degree as evidenced by: • Curriculum vitae of lecturer • Certificate as Nurse Educator/SANC registration • SANC Receipt • Minimum of Masters' degree • Job descriptor as lecturer
	Students	Admission criteria specific to the programme • Registered for general nursing science and midwifery	All students have an active status for the modules that they are registered for as evident in the respective ITS registers and electronic class lists.
3	**Material resources**	Size, Lighting, equipment	Class-rooms: • are small for the student numbers. This is compensated by dividing groups into two, has good lighting Computer laboratory: • Size is small, students use two hourly rotation, insufficient computers, has good lighting Library: • Size is adequate, well equipped, has good lighting

4.4.2 Process / Through-put standards

(a) Standard 6: Programme curriculum and curriculum design

Criteria for evaluation:

- The undergraduate nursing programme is congruent with National Standards (Council for Higher Education) and Department Of Higher Education.
- The programme is accredited by the professional regulating body, the SANC.
- The programme evidences appropriate course sequencing.
- Cases for each module are designed.

Evaluation outcome:

- *The programme is approved by Council for Higher Education and Depart of Higher Education. It is also accredited with the SANC.*
- *The program overview and module descriptors are reviewed and approved by higher education structures every three years.*
- *The programme has a master plan which outlines the sequence of modules*
- *Half-yearly workshops are conducted by a curriculum expert. Study guides for each module and module case studies are designed, modified and discussed by all lecturers.*
- *Module timetables reflecting adequate distribution of hours between theory and practice and self-learning are reviewed half yearly for semester courses by the head of programme and lecturers.*

(e) Standard 7: Processes in CBL

Criteria for evaluation:

- Logic framework for the four-year community and case-based undergraduate nursing programme at the UoT under study. The document states processes regarding teaching and learning as follows:

- Case studies, field work, developmental case study group discussions (face-to-face and web-based asynchronous discussions).
- Staff capacity development workshops for teaching in active teaching /learning programmes (case studies, e-learning, reflective learning and enquiry-based learning environments) and for developing active teaching/learning materials(digital and text-based).

Evaluation outcome:

- *The processes of the programme are based on the logic framework for the four-year* community and case based undergraduate nursing programme at the UoT under study.
- The programme document is part of the project proposal that was made by the UoT under study to establish a Bachelor of Nursing programme in response to the need for increased training of professional nurses in South Africa.
- Case studies referred to in the programme document are developed by lecturers under expert guidance and used for teaching and learning.
- Students do cases in group discussions face-to-face. Some lecturers use e-learning for other parts of their modules.
- Staff capacity is developed in workshops for teaching in case studies.
- The undergraduate students in sharing their experience of case based teaching and learning stated that they were:
  - given case studies to discuss in class, focus questions which prompted them to research further in groups, present and discuss in class, thus developing content from case studies.
  - orientated to case study method of learning as reflected in their study guides.
- Class discussions were consolidated and learning was reinforced with assessments.

No document guides lecturers or that lecturers refer to as a directive on how case studies are to be conducted in class and outside class.

Table 4.17: Process standards of CBL at the UoT

Standard Number	Key Concept	Criteria	Evaluation outcome
		-	
1	Programme Curriculum	Congruent with National Standards (Council for Higher Education) and Department Of Higher Education	Programme overview, Module descriptors- approved by higher education and accreditation by South African Nursing Council
	Curriculum design	Evidences appropriate course sequencing	PC's file Programme overview and module descriptors
2	Programme participation and co-operation	Programme review and working time tables Adequate distribution of hours between theory and practice, self -learning	Master plan - PC' s file Programme for each level
3	Curriculum design and implementation of CBL	Cases for each module are designed and discussed by lecturers	PC's file – Workshop minutes Study guide for each module with module cases
	Implementation of CBL	• Students given case studies ahead of classes • Cases discussed in class • Trigger questions allocated to groups or individuals • Students research case information • Groups/individuals present in class • Lecturer asks further questions • Lecturer adds information • Lecturer summarises • Covering of gaps in content	Students' interview Students' module file

4.5 Conclusion

This chapter presented the data from interviews conducted with the respondents of the study. Following the purpose of the study and the

Donabedian Framework of analysis, the chapter basically deals with two aspects of CBL namely structure (context) and process (activities). The students and PC interview responses were analysed to categorise these two aspects of the programme. The next chapter will discuss the results and make recommendations.

CHAPTER FIVE: DISCUSSION OF RESULTS

5.1 Introduction

The previous chapter presented the research results. This chapter will focus on the discussion and interpretation of the findings. This will enable the researcher to draw conclusions and make recommendations regarding CBL. The discussion of the research results will be framed by the two research objectives as reflected in the first chapter- the framework for evaluation of structure, process and outcome; and the outcome of the analysis of the interviews.

The purpose of the study was to evaluate the structure and process of CBL at the UoT. This evaluative part of the study distinguished between structural and process standards of the case study, as identified by the Donabedian framework. On the other hand, whilst student experiences may constitute a stand-alone objective, the study contends that most of what students said in the interviews augment the process standards of the case study, therefore they will be used on both accounts. Having said that, whereas this section will maintain this distinction in discussing the results, attempts in integrating the evaluative part and students experience will be made towards the end in an effort to provide a comprehensive picture on the case under study. This has a dual purpose of using students' experiences in the evaluation, while also understanding the bearing of structural and procedural aspects on the way students experience CBL.

5.2 Evaluation of CBL

The evaluative aspect of the study consists of structural and process standards, as guided by the Donabedian Framework. In essence, these make up the context of the pedagogy on which students experiences will be understood.

5.2.1 Structural standards

According to Donabedian (2003), the structure consists of human resources, the physical facility and equipment, as well as organizational characteristics

such as staff training and payment methods. The study found that in terms of structure, the programme, as it formed the context for CBL, met the criteria set for vision and mission statements, as they appeared in the departmental handbook. These sufficiently referred to the development of the student as the prime objective of the programme. The mission statement resonates with the graduate attributes which the programme modules are built to develop. Ideally, the vision and mission statements should identify the organisation's key stakeholders and set out how the organisation will serve them (Deazeley 2011:1). This is sufficiently met in the case under study.

The human resources needs for efficient implementation of CBL were also found to be of acceptable standards. According to the framework human resources in this context consist of management, academic staff and students. The programme has a PC who represents the management. However, the study found that the PC did not meet the set criteria in respect of qualifications as an acting head of a university programme. This is evidenced by her qualification credentials in the institution records and her job descriptor. The argument made in similar studies is that a Bachelor's programme would ideally be headed by a nurse educator with a doctoral degree or higher qualification.

As for lecturers, the study found that all met the set qualification criteria as lecturers in an undergraduate nursing programme (with a minimum of Masters' degree in their area of specialisation). On the same vein, all students had an active status for their respective modules as evidenced by the ITS register and electronic class lists, which were compiled at the end of registration period. This is important as the number of students' impacts on other resources such as transport to clinical facilities. Participants from the student population were registered for General Nursing science and Midwifery modules. Students are viewed as being at the center stage of the CBL case (Bambini, Washburn and Perkins, 2009). In the current study, the students experienced the phenomenon for four years, that is, for the entire duration of the undergraduate programme.

The study also found that there were adequate physical learning facilities, necessary for the successful implementation of CBL. The lighting and temperature control in classroom facilities were adequate. Class-rooms were equipped with writing boards, data projectors, video screens, adaptable half-round shaped desks and stackable chairs. This met the criteria of 'a conducive and learner-enabling environment' advocated for in other studies (Blackmon et al. 2007; Hussain-khaliq 2007). However, the size of the class-room was found to be inadequate for accommodating registered students. This was, however, efficiently rectified through dividing students into smaller groups, and giving the groups turns in the usage of the classroom space. This was essential, since in CBL, the size of the class-room impacts on class discussions and the effective deliverance of case studies.

Other facilities such as the library and computer labs were found to be available. Through the perusal of catalogues and relevant sections, the library was found to be sufficiently equipped, to aid comprehensive engagement with different cases requisite within CBL. The library also consisted of an e-learning compartment, made up computers with internet access. This, in addition to several on line journals to which the library is subscribed to, were seen as invaluable in aiding student's access to relevant material for realistic case based reasoning. However, computer laboratory with 44 computers was seen to be inadequate, given the continuous need for CBL students to access the facility. Even though, the facility operated on a two-hour rotational systems, to allow sufficient student access, the study saw this as an inconvenience to CBL student who may need more time in the computer laboratories to prepare for their case study discussions. This is further compounded by the fact that because CBL students are self-directed students who must research information and use the computer, comprehensively, as one of the learning resources. However, the provisions made by the UoT for Wifi, which students can access with their laptops, iPads and/or smart phones, was a welcome move.

5.2.2 Process standards

Process standards are the activities that are carried out by management, lecturers and students, to meet set standards and to articulate policies and procedures which are used to facilitate the implementation of CBL within the nursing programme (El Haj et al. 2013). In the present study, these included the programme curriculum and curriculum design, the roles of lectures and students.

The study found that the programme was congruent with national standards, namely as set by CHE and the Department of Higher Education as well as the professional regulating body the SANC. This was documented in the institution file. This is important for the credibility of the programme and for ensuring that the standard of the programme meets the training needs of the profession and of the country- the primary rationale for CBL (Thomas et al. 2001; Conti 2006; Choi, Lee and Kang 2009). The mutual interaction between the UoT's Health Sciences Department and the various professional and clinical organisations is a desirable practice for the effective implementation of CBL. To that effect, all students were registered with the SANC within three months of their registration with the UoT. This aids CBL, in the sense that it becomes easy for students to visit clinical facilities as members of a professional nursing body, than on their own capacity. To this effect, the review of working time tables also indicated this interaction between theory (classroom instruction) and practice (clinical activities). This was further supported by SANC, which stipulates minimum hours for clinical learning experience for each level of study, as well as per module. This was a desirable output for CBL, since students were simultaneously grounded in theory as well as in clinical contexts.

In terms of curriculum design and implementation, this study found that the case studies for each module were prepared in departmental workshops, where all lecturers had a contribution on cases to be studied at particular levels. These would then be included in the study guide or special case study package, per module. This practice, though not emphasized in other studies, was viewed as positive, since it had dual benefits. The presence of a case-

study expert in these workshops served to benefit the participating lecturers on the skills and requirements of preparation of case studies. This was further supported by the PC, who observed that these case study workshops bridged the knowledge and skills gap for lecturers who were not familiar with the case study method and refreshed those who had the case study experience. On the other hand, the expert ensured that relevant and recent case studies were included in each study pack, which benefitted the students, who were to acquire relevant skills from relevant real cases.

However, the PC attested to the fact that there was no follow-up support for the implementation of this pedagogy, between workshops. This is seen as short-coming, which needs rectification, since the delivery of CBL and the facilitation of discussions is an indispensable skill for the success of CBL (Lee and Choi 2008).

The role of the lecturer was also identified to be part of the process standards for CBL. The evaluation of this standard found that, in the present case, the role of the lecturer was understood to be three-pronged namely student orientation, presentation of case studies, and curriculum content coverage. According, to the PC, student orientation took place in the first year of the programme, and was included in the study guide. The programme directed the students with regard to their role and responsibility during CBL classes and outside the class-room. The lecturer presented case studies to the class before the classes begun; cases were discussed and focus questions were allocated to groups. According to Skyes and Bird (1992) learning from cases will depend on the interaction among what the case presents, what the reader brings and what the teacher does with the case. It is worth noting that the lecturers in this case were seen to be fulfilling their duties. However, when student participants were asked about their orientation and guidance in CBL, some of them referred to their study guides and learning outcomes as guidance. This gave the impression that there might be a discrepancy between what the programme ought to do (as articulated by the PC) and what it actually did, as experienced by students.

The PC also described the role of the lecturer as that of summarising or wrapping up discussions. He or she had to have good questioning skills to encourage a fruitful discussion in class. This concept is supported by (Eshach and Bitterman (2003 cited in Kaddoua 2011:6) who advocates that the instructional method for improving the process of CBL should include building up students prior knowledge; assessing students' knowledge and skills; providing specific feedback to students and embedding various teaching aids to support student learning. In this regard, Blackmon et al. (2007) regards the CBL lecturer as student, listener, analyst, questioner, paraphraser and minuteman.

On curriculum content coverage, most students acknowledged that the content was adequately covered, and that if there were any gaps, these were covered by the interaction of cases; as one case study led to another. However, one student argued that case studies do not cover all curriculum content, and noted this as one disadvantage of case studies. The PC confirmed the objective of CBL on this, as she argued that since CBL aims at producing self-directed learners, case study presentations were only meant to be instructional. The student had to fill the gaps through case based reasoning and comprehensive personalized research. However, the response to this question by students gave the impression that the study would have benefitted if this question was directed on lecturer who, arguably, knew more about curriculum content coverage. However, Uys (1998 cited in Kaddoura 2011:6) suggests that CBL focuses more on the process of learning and covers the required content through a set of complete cases.

Authors on CBL advise that the role of the CBL learner should consist of; preparation, research, evaluation of proposed solutions, and commitment to collaborative work (Blackmon et al. 2007; Cassimjee 2007; Dupuis and Persky 2008). The evidence gathered from student interviews show that students perceive their role as those of; reading through the cases before they are discussed in class, working in groups to find and present information in class, and consultation with the lecturer for challenging areas. This is seems

to be a confirmation that the students, in the present case, fulfill their roles as CBL learners.

5.3 Student experience of CBL

This study recorded an overwhelming positive attitude among students towards CBL. Most of them contended that CBL prepared them well for clinical practice. They highlighted practical relevance as a benefit of doing case studies. This shows that students actually understood the objective of CBL, which is to produce practical-orientated and critical thinking graduates. This corroborates the study done by Marcus, Taylor and Ellis (2004) among Vertinary Science undergraduates, who found the same practical-relevance consciousness among students when evaluating CBL. In the present study, the Nursing students saw case studies as the clinical practice brought to the class-room. Malesela (2009), in another study conducted among undergraduate Nursing students confirmed this theory-practice integration of CBL.

However students experienced group work, integral to CBL, in both positive and negative ways. Almost all student participants appreciated the benefits of working in groups citing, learning from each other, synergistical advantages and personal development in accommodative attitudes. However, some identified the dynamics of working in groups as demerits of CBL. This experience may however, need to be looked into by management so as to ensure that the benefits of CBL are not hindered by these procedural matters. This is because, group-work is viewed and valued as an integral aspect of CBL and cannot easily be discarded without losing the essence of the pedagogy. As emphasized by Cassimjee (2007:416), group learning is a positive way of affirming knowledge that one already possesses. Group-work, in this case, is essential as part of the preparation for nursing students to function well in the professional world, which is characterized, almost exclusively, by team-work.

5.4 General discussion

The above discussion show that, apart from few minor discrepancies CBL is sufficiently implemented, and experienced as invaluable by students, at the UoT under study. The study argues that, in as much as these two aspects are assessed differently for conceptual clarity, in practice they are mutually-reinforcing. As can be extrapolated from the preceding discussion, the fact that basic structural and procedural requirements are in place may have a bearing on the experiences of students. This may be because CBL, as a pedagogical instruction, can only be experienced through the medium of structural and procedural contexts. In turn, the context impacts on how the pedagogy is experienced. Needless to say, if the context is unsupportive of the pedagogy, the experiences can only be negative. As a result, this study sees as valuable for the implementation of CBL, the provision of adequate contextual requirements.

The study argues that if the noted inadequacies within the structural and process standards are not resolved they may cripple the delivery of the whole programme. Attention therefore needs to be paid to monitoring CBL and ensuring the provision of adequate human and physical resources, as well as to making sure that both students and lecturers are adequately informed and prepared for their respective roles within CBL.

5.5 Limitations of the study

The study identified several limitations that may have had bearing on the finding of the study. These are:

- The study appreciates that focusing only on students' experiences and leaving out the lectures' perspective may have limited a comprehensive understanding of CBL as implemented in the UoT under study.
- The researcher also feels that the language used when conducting student interviews may have limited the results. This is due to the fact that, in as much as the drafting of the interview schedule and the conducted interviews assumed a functional knowledge of English among participants, the researcher has realised that language

challenges may have limited what participants could realistically express during course of discussion

- The study would also benefit more from observation as an additional source of information. However from the perspective of overwhelming data, observation may become delimitation.
- The researcher also saw it as a limitation that the sample was from one level of the programme, and the views gathered may as well not be representative of all students within the programme.

5.6 Recommendations

In light of the experiences of the researcher in conducting the study, as well as from the results obtained, the study makes several recommendations:

- Since it was acknowledged by the PC that there is no policy document guiding the implementation of CBL at this UoT the study proposes the creation of such a policy, with specific attention to be given to the experiences gained thus far and several mid-terms assessments, including this one.
- In view of insufficient computers, the study recommends that a laptop lending system for students be implemented within the nursing department.
- In view of the academic appropriateness of the PC, the acting period could be shortened by advertising the post to procure an appropriately qualified person.
- The study also recommends the investigation of student's performance during clinical practice as a comprehensive assessment of CBL.
- It is recommended that a further study be undertaken that would include lecturers and observation as additional sources of data, and which would also draw the sample from all four levels of the programme.

5.7 Conclusion

The findings of this study have demonstrated that most aspects of structure that are in place in the programme and the CBL processes are adequate and support CBL. There are however areas that need attention. It is vital for the

structural and process standards of a qualification programme to meet the standards set by South Africa's quality assurance bodies and also that follow the framework that results from the vision and mission of the programme as well as the intended outcomes.

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APPENDIX 1: LETTER OF INFORMATION AND CONSENT (STUDENTS)

INSTITUTIONAL RESEARCH ETHICS COMMITTEE (IREC)

LETTER OF INFORMATION

Dear Participant,

Welcome to my research project. Thank you for participating in my study

Title of the Research Study: Case Based Learning in the undergraduate nursing programme at a University of Technology-A case study

Principal Investigator/s/researcher: Ms T. M. Sinqotho Clinical Instructor

Co-Investigator/s/supervisor/s:

1. Prof J. K. Adam, D Tech Cinical Technology, Professor, Durban University of Technology.
2. Prof M.N. Sibiya, D Tech Nursing Science, Professor, Durban University of Technology.

Brief Introduction and Purpose of the Study: Case based learning is a teaching learning strategy that is used at the University of Technology under study as a teaching method. It is introduced during the first year, and increased progressively thereafter. The programme is at its fifth year since its inception in 2010.There is a total of 340 undergraduate nursing students. In the third year, there are 89 students. There are 11 lecturers and 10 clinical instructors. The study seeks to evaluate the implementation of CBL as a teaching learning strategy, including assessment practices, if structures enable case based learning; and how lecturers and students experience it.

Outline of the Procedures: During the study your responsibility is to answer a demographics questionnaire and two questions of 80-100 words both questions, in the first phase, in one sitting and to be interviewed in the second phase for about 15-20 minutes each participant. These interviews may be repeated where a follow up is necessary. Your records, that is, your student file will be used to support the interview information; but it will not be evaluated or rated on its own. All third year students will be invited to participate. Interviews will be conducted at the skills laboratory where there is privacy and quietness, outside class time. The audiotaped information will be transcribed, coded and analysed. An inductive method will be used and themes identified. (De Vos et al. 2005). An

expert in data analysis will be consulted for the use of CAQDAS software packages – Nvivo. Participants will be selected for the purpose that they have been learning in case studies for two years.

Risks or Discomforts to the Participant: There will be no risks during this research

Benefits: The participants will benefit since the study is evaluating part of their curriculum.

Reason/s why the Participant May Be Withdrawn from the Study: Your participation in this study is voluntary. You may withdraw at any stage of the study. Your termination will not result in any adverse consequences. You will be withdrawn if you fail to cooperate as agreed in the information letter and consent.

Remuneration: No remuneration will be paid for the study

Costs of the Study: There will be no cost to the participants

Confidentiality: All data that will be collected will be private and confidential and will be used only for the purpose of the study. Interview tapes will be kept under lock and key for 15 years. They will be accessible only to the assessor.

Research-related Injury: no risk or harm to participants is expected. You may report harm if it occurs due to the study, to the research council and the researcher.

Persons to Contact in the Event of Any Problems or Queries:
Please contact Ms T.M. Sinqotho (082 857 1555.), my supervisor-Professor J.K. Adam (031-373 25291) or the Institutional Research Ethics administrator on 031-373 2900.
Complaints can be reported to the DVC: TIP, Prof F. Otieno on 031-373 2382 or dvctip@dut.ac.za.

APPENDIX 2: LETTER OF INFORMATION AND CONSENT (PROGRAMME CO-ORDINATOR)

INSTITUTIONAL RESEARCH ETHICS COMMITTEE (IREC)

LETTER OF INFORMATION

Dear Participant,

Welcome to my research project. Thank you for participating in my study

Title of the Research Study: Case Based Learning in the undergraduate nursing programme at a University of Technology: A case study

Principal Investigator/s/researcher: Ms T.M. Sinqotho Clinical Instructor

Co-Investigator/s/supervisor/s:

1. Prof J. K. Adam, D Tech Clinical Technology, Professor, Durban University of Technology.
2. Prof M. N. Sibiya, D Tech, Head of the department of Nursing Science, Durban University of Technology.

Brief Introduction and Purpose of the Study: Case based learning is a teaching learning strategy that is used at the University of Technology under study as a teaching method. It was introduced during the first year, and increased progressively thereafter. The programme is at its fifth year since its inception in 2010.There is a total of 340 undergraduate nursing students. In the third year, there are 86 students. There are 11 lecturers and 9 clinical instructors. The study seeks to evaluate the implementation of CBL as a teaching learning strategy, to assess if structures enable case based learning; and how students experience it.

Outline of the Procedures: During the study your responsibility is to be interviewed for about 30 – 45 minutes. Your records, that is, programme file will be used to support the interview information; but it will not be evaluated or rated on its own. Suitable time for both programme Co-ordinator and researcher will be negotiated. A follow up interview may be requested where clarifications may be made if necessary. The audiotaped information will be transcribed, coded and analysed. An inductive method will be used and themes identified. (De Vos et al, 2005). An expert in data analysis will be consulted for the use of CAQDAS software packages – Nvivo. Participant is selected for the purpose that she is coordinating the programme in which case studies are the teaching-learning method.

Risks or Discomforts to the Participant: There will be no risks during this research

Benefits: The participants will benefit since the study is evaluating part of their curriculum.
Reason/s why the Participant May Be Withdrawn from the Study: Your participation in this study is voluntary. You may withdraw at any stage of the study. Your termination will not result in any adverse consequences.

Remuneration: No remuneration will be paid for the study.

Costs of the Study: There will be no cost to the participants.

Confidentiality: All data that will be collected will be private and confidential and will be used only for the purpose of the study. Interview tapes will be kept under lock and key for 15 years. They will be accessible only to the researcher.

Research-related Injury: no risk or harm to participants is expected. You may report harm if it occurs due to the study, to the research council and the researcher.

Persons to Contact in the Event of Any Problems or Queries:
Please contact Ms T. M. Sinqotho (082 857 1555), my supervisor-Professor J.K. Adam (031-373 25291) or the Institutional Research Ethics administrator on 031-373 2900.
Complaints can be reported to the DVC: TIP, Prof F. Otieno on 031-373 2382 or dvctip@dut.ac.za

DUT
DURBAN
UNIVERSITY OF
TECHNOLOGY

FACULTY OF
HEALTH
SCIENCES

DEPARTMENT OF
NURSING

Ms TM Sinqotho

Department of Nursing

PO Box 1334

Durban

4000

17 June 2014

Dear Ms Sinqotho

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN THE UNDERGRADUATE NURSING PROGRAMME

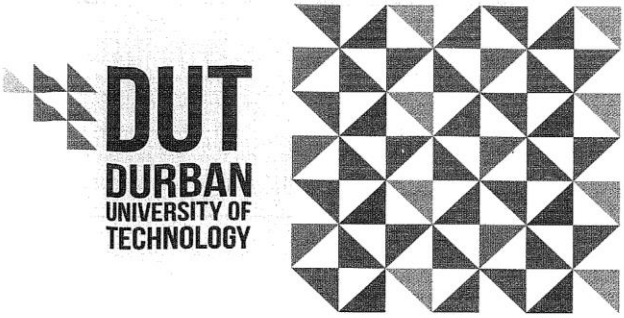
Your letter dated 13 June 2014 is acknowledged. I am pleased to inform you that permission is granted. The Department of Nursing wishes you the best of luck for your studies.

Regards

[redacted]

Ms DG Sokhela

APPENDIX 4: ETHICAL APPROVAL OF DATA COLLECTION TOOL



Institutional Research Ethics Committee
Faculty of Health Sciences
Room MS 49, Mansfield School Site
Gate 8, Ritson Campus
Durban University of Technology

P O Box 1334, Durban, South Africa, 4001

Tel: 031 373 2900
Fax: 031 373 2407
Email: lavishad@dut.ac.za
http://www.dut.ac.za/research/institutional_research_ethics

www.dut.ac.za

12 June 2014

IREC Reference Number: **REC 78/13**

Ms T M Sinqotho
P O Box 3473
Pietermaritzburg
3200

Dear Ms Sinqotho

Case Based Learning in the undergraduate Nursing programme at a University of Technology: A case study

The Institutional Research Ethics Committee acknowledges receipt of your final data collection tool for review.

We are pleased to inform you that the questionnaire has been APPROVED; you may now proceed with data collection on the proposed project.

Yours Sincerely

[redacted]

Prof M N Sibiya
Deputy Chairperson: IREC

APPENDIX 5: INSTITUTIONAL RESEARCH COMMITTEE ETHICAL CLEARANCE

Directorate for Research and Postgraduate Support
Durban University of Technology
Tromso Annexe, Steve Biko Campus
P.O. Box 1334, Durban 4000
Tel.: 031-3732576/7
Fax: 031-3732946
E-mail: moyos@dut.ac.za

4th August 2014

Ms TM Sinqotho
Department of Nursing
Durban University of Technology

Dear Ms Sinqotho

PERMISSION TO CONDUCT RESEARCH AT THE DUT

Your email correspondence in respect of the above refers. I am pleased to inform you that the Institutional Research Committee (IRC) has granted permission for you to conduct your research at the Durban University of Technology.

We would be grateful if a summary of your key research findings can be submitted to the IRC on completion of your studies.

Kindest regards.
Yours sincerely

[redacted]

PROF. S. MOYO
DIRECTOR: RESEARCH AND POSTGRADUATE SUPPORT

APPENDIX 6: DATA COLLECTION TOOL (STUDENTS)

SEMI-STRUCTURED INTERVIEW GUIDE

1. Describe the case method of learning as you practised it from the first year to date at this University of Technology.

2. Describe your experience with case study method of teaching in relation to its impact in your learning and in you as a person.

ANNEXURE: 7:LETTER INVITING THIRD YEAR STUDENTS TO PARTICIPATE IN THE STUDY

Dear Third year student, Cellphone No_____ email----------

I am kindly requesting you to fill in the demographics part and then answer the two questions below.

Please write only **80 to 100 words** each question.

Thank you,

T. M.Sinqotho (033-8458985 / 0828571555)

DEMOGRAPHICS

1. Gender:

Male	Female

2. Age: Please tick what is relevant:

18 – 25yrs	26 – 35yrs	36yrs or more

Case based learning is a method that is used to teach nursing students at this university of technology

A. Explain the case based method according to your understanding. (80 – 100 words)

B. Describe how you experience case studies as a learning method. (80 – 100 words)

APPENDIX: 8 DATA COLLECTION TOOL: PROGRAMME COORDINATOR

Describe case based learning according to your understanding

Describe your role as lecturer

Describe your role as programme coordinator and lecturer

Describe the role of the case based learning student.