

Experiences of North-west University Nursing Students in Problem Based Learning (PBL)

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ABSTRACT A qualitative, descriptive, exploratory and contextual research design was conducted using in-depth discussions to describe the nursing students' experiences of PBL. Purposive sampling was used to recruit eligible students for individual interviews (n=8) and three (n=30) focus group discussions in a private location. The study consisted of inductive analysis to identify critical themes that emerge from interview and focus group data. The reporting used "voice" in the text; that is, the researcher gave participants' quotes to illustrate the themes described. Themes that emerged during the analysis were PBL challenged students; problematic group cohesion, PBL as a positive educational strategy. The challenges included: unfamiliarity with PBL, inadequate resources in the library and computer laboratories to support PBL, time pressures and work overload of students. Inadequate clinical learning and support from professional nurses in the clinical services was also noted as a challenge for PBL. Positive conclusions included valuing of the strategy as it promoted critical thinking, communication skills, teamwork and learning from others. Students indicated that the positive experiences outweighed the negative experiences and PBL should be introduced at first year level and integrated into the improvement of clinical learning. Recommendations from key informants include retention of PBL and strengthening of the strategy by empowering both the students and Faculty in the use of PBL and collaborating with professional nursing clinical staff to raise awareness of PBL and engaging them in the educational strategy.

INTRODUCTION

Times are changing. Nursing education in South Africa is increasingly under pressure to focus on developing clinicians prepared to work in rapidly changing, multicultural environments influenced by technological advances and fiscal constraints. To meet these challenges, nurse educators are required to redirect their learning and teaching strategies to ones that promote critical thinking in order to develop nurses who are critical, reflective analytical thinkers (South African Nursing Council -SANC 2001; South African Qualifications Authority -SAQA 2002).

SAQA (2002) and the SANC (2001) emphasise a paradigm shift from teacher-centred to learner-centred teaching methodologies that will ensure that students take responsibility for their own learning, and become independent, self-directed and lifelong students. South African Qualification Authority (SAQA) stipulated the critical cross-field outcomes (CCFO's) as a set of competencies to be achieved for all curricula at any educational institution is essential. Critical Cross-Field Outcomes refer to those generic outcomes that inform all teaching and learning (SAQA 2005). Examples of those CCFO's include: work effectively within a group or team; identify and solve problems using critical thinking

and decision making; organize and manage responsibly; communicate effectively; use technology and science effectively and respecting the environment to mention but a few. To ensure that the CCFO's competencies do not remain visionary benchmarks, attempts should be made by education institutions to operationalize them by embedding in the curriculum activities (Lombard and Grosser 2008). To begin the operationalization of the CCFO's competencies, The Department of Nursing Science (DNS) at NWU introduced PBL to address this legislative requirement.

Not only has the government policy declared nurses as the backbone of health care system, but also there has been a major shift in health care from hospital based to community based primary health care (PHC, Health System Trust 1999 and NEPAD 2007). In South Africa, PHC services is primarily offered by professional nurses and nursing education institutions (NEI) are responsible for training professional nurses who are competent to provide PHC at both rural and urban area. To develop professional nurses with competencies befitting the responsibilities to the health of the population, a paradigm shift from traditional teacher centered methods of education to learner centered modalities including PBL is mandatory to NEI.

Problem-based learning is defined as a student/learner-centered instructional method in which students are given a complex problem to solve that contains no definitive solution. Existing literature (Duch et al. 1999; Rideout 2001; Rideout et al. 2002 and Tompkins 2001) described the following advantages of PBL: The learner is competent to (1) critically think, analyze and solve complex real world problems; (2) find, evaluate and use appropriate learning resource; (4) work cooperatively in teams and small groups; (5) demonstrate effective verbal and written communication; and (6) use content knowledge and intellectual skills to become continual learners.

PBL provides an environment for promoting the skills/competencies outlined above (Duch et al. 1999; Rideout 2001; Rideout et al. 2002 and Tompkins 2001). Unlike institutions recognised for PBL (Woods et al. 1988), The DNS, NWU has been offering traditional nursing education for the last three decades. A change or move to PBL for NWU's nursing faculty and students would therefore constitute what Woods (1994) refers to as a 'giant change' (Gwele 1997).

Despite increased attention to PBL as an appropriate andragogic approach to teaching in professional practice, the researcher found little research on evaluating the process outside of the medical and educational professions. Moreover, few studies have explored the perceptions of PBL graduates and undergraduates. Consequently, there is still a need to explore the effects of PBL in nursing education, from both undergraduate and graduate perspectives in the South African context and as a Historically Disadvantaged Institution (HDI). Given that students are the primary consumers of teaching and learning, it is very important to determine their experiences and perceptions of teaching and learning. Accordingly, this study assessed the effects of PBL through students' descriptions of their experience of PBL.

Since its' introduction in educational practice, PBL and its outcomes have been examined, but little research has been done on its application from the learner's perspective in different cultural backgrounds (Connolly and Seneque 1999: 738; Delva et al. 2000; Morales-Mann and Kaitell 2001). The study therefore adds to existing research by including a student population from South Africa, that is 100 percent Black and therefore, bring the perspective from different cultural backgrounds to students at universities in Western, English-speaking countries, hence the researcher was of the

opinion that it would be enriching to obtain their experiences of PBL.

The purpose of this study was to explore and describe third and fourth year nursing students' experiences of PBL at NWU with the aim of providing recommendations to facilitate learning and teaching in the institution.

Based on the problem and the purpose, the study wished to answer the following questions:

- ♦ What are nursing students' experiences of PBL?
- ♦ How can PBL be improved?

Assumptions

This study was based on the following assumption that PBL is ideal for North West University nursing students despite their disadvantaged educational backgrounds, as the strategy will improve their motivational and critical thinking skills.

METHODOLOGY

Research Design

Qualitative, exploratory, descriptive and contextual paradigm was chosen for it particularly suited to study human experience, capturing unique stories and uncovering social processes. (LoBiondo-Wood and Haber 2010).

Data Collection

The researcher acted as a data collection tool and individual in depth interviews and focus group discussion (FGD) were used. Purposive sampling was used to enrol the key informants (n=8) for individual interviews and three groups (n=30) for focus group discussions inclusion criteria included the following: (1) be South African citizens from disadvantaged backgrounds; (2) have done PBL nurse training in the third- and fourth-year programme; (3) be registered for Bachelor pre-registration nursing education. Exclusion criteria included the non South African citizens and those coming from the traditional teaching method, which was used before PBL was implemented but returned to complete the programme.

The individual interviews (8) and FGD's were conducted with purposively sampled students who were awaiting the final examination results, namely, (n=10) from 2003 group, (n=8) from 2004 group and

Table 1: Measures to ensure trustworthiness

<i>Strategy</i>	<i>How ensured in the study.</i>
<i>Truth value</i>	Data were gathered through one-on-one interviews and focus group discussions using the phenomenological research approach. Leading of participants during the interview sessions was prevented through the application of bracketing. At the end of each interview participants' contact details were exchanged (the researcher and the students' details) for use should the need arise.
<i>Applicability.</i>	Results of the study were compared to those of similar studies done previously
<i>Consistency.</i>	A full description of the data collection and analysis findings of the study were verified through existing literature, other relevant research studies, as well as experts in the field of health sciences education and in the field of qualitative research.
<i>Neutrality.</i>	Data collection and analysis were free from bias.

(n= 12) from 2005 group to explore their experiences of PBL. In addition, field notes were also used to capture the researcher's observations. Audio-taped data from individual interviews and FGD's were transcribed and carefully read, coded by the researcher.

To ensure the trustworthiness in this study, the researcher adopted the model of Lincoln and Guba as described by Krefting (1991). The table below depicts how trustworthiness was ensured in this study (See Table 1).

In addition, the researcher took the following steps to increase neutrality: (1) *Literature control*. Compared findings with other research findings and literature (2) *Member-checking*. Checked the categories/themes found in the data with the respondents (3) *Auditing*. All raw data, field notes, interview schedules, data analysis and interpretation were made available for auditing by participants (Holloway and Wheeler 2002).

Ethical Considerations

Formal permission for the study was obtained from the Department of Nursing and North West

University School of Environmental and Health Sciences. The students received information about the study in a letter of explanation and in personal meeting with the researcher prior to the data collection. Written informed consent was obtained from student participants. Confidentiality was assured and voluntary nature of participation was pointed out. During pilot study final student were recruited to participate and gave only positive experiences of PBL fearing victimization despite reassurance. Thus during this study only student who completed the programme and awaiting the graduation were enrolled.

RESULTS AND DISCUSION

Characteristics of Participants

From the eight individual interviews, 50 percent were male and the 50 percent were females; whilst from the Focus group discussions (FGD) 43 percent were males and the remaining 57 percent were females, two (n=2) participants from the individual interviews repeated a module during the programme.

Table 2: Respondents' gender, language and year of training commencement

<i>Individual interviews</i>		<i>Year of training commencement</i>		<i>Language</i>		
<i>Gender</i>	<i>Number of student</i>	<i>2003</i>	<i>2004</i>	<i>Tswana</i>	<i>Sepedi</i>	<i>Xhosa</i>
Female	4	2	2	3	0	1
Male	4	1	3	3	1	0
Total	8	3	5	6	1	1

<i>Focus Group Discussion</i>		<i>Year of training commencement</i>			
<i>2003</i>		<i>2004</i>		<i>2005</i>	
Males=	4	Males =	3	Male=	5
Females=	6	Females=	5	Females=	6
N =10		N=8		N=12	

Table 2 depicts the characteristics of the participants. During the pilot interview, the students from third and fourth year level were not comfortable providing information for they feared victimisation and gave only the positive experiences. Therefore, the researcher revised the recruitment plan and then used the final year students who already had their results to minimize their fear of retaliation if they reported negative outcomes of PBL. These nursing students had registered for the pre-registration programme (SANC R425 Nursing degree) and gone through PBL in their third and fourth years of study. The participants were following four year baccalaureate degree and awaiting community service placement

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Categories, Themes and Sub-themes

The following themes, sub-themes and categories emerged from the data Table 3.

PBL is Challenging

All the respondents found PBL challenging. The challenges included unfamiliarity with the strategy; library and computer laboratory challenges, and time consumption.

The respondents indicated that at the beginning they found it difficult to seek information on their own even though they were orientated to be information seekers. These are what some of the participants said:

“It was challenging because at first I was not acquainted with it, with the process, and going to the library looking for information for myself was something that I was not used to”.

“PBL is challenging and demanding because as a student you have to look up information yourself. The facilitators do not give you information. They just give you a scenario and problems and you have to search for information”.

Table 3: Categories, themes and sub-themes from the data

Category	Theme	Sub-theme
3.1 PBL is challenging	3.1.1 Unfamiliar with PBL	3.1.1.1. Students not used to the strategy
		3.1.1.2 PBL only used by Nursing
	3.1.2 Library	3.1.2.1 Search for information
		3.1.2.2 Information not available
	3.1.3 Computer laboratories	3.1.3.1 Laboratories always full
		3.1.3.2 Closing times
	3.1.4 Time pressures	3.1.4.1 Overload
3.2 Group collaboration	3.2.1 Group cohesion	3.1.4.2 Clinical placement
		3.2.1.1 Group domination
	3.2.2 Meetings	3.2.1.2 Uneven group participation
		3.2.2.1 Attendance
	3.2.3 Work allocation	3.2.2.2 Cooperation
		3.2.3.1 Completion of work.
		3.2.3.2 Excuses
3.3 Positive attributes of PBL	3.3.1 Learning	3.3.1.1 Promotion of critical thinking
		3.3.1.2 Learning from others
		3.3.1.3 Promotion of broad and wide reading
	3.3.2 Teamwork	3.3.2.1 Diversity management
		3.3.2.2
	3.3.3 Communication	3.3.3.1 Improvement of oral communication
		3.3.3.2 Improved presentation
3.4 Improvement of PBL	3.4.1 Orientation on PBL	3.3.3.3 Improved information seeking skills
		3.4.1.1 Development of facilitators
	3.4.2 Focus on clinical learning	3.4.1.2 Orientation of students
		3.4.2.1 Clinical follow-up by facilitators
		3.4.2.2 Engagement of preceptors
		3.4.2.3 Change of professional nurses' attitudes

'lecturers are having it nice when we are doing a lot of work for them. One weekend my colleague and myself were very annoyed when we spend almost the whole night doing Ms X learner issues. We thought she is comfortable at her home when we were doing her work and they are being paid for that'

This agrees with Barrows et al. (2002) finding that many students initially found PBL stressful due to the deliberate ambiguous nature of the scenario and the requirement that students direct their own learning. The respondents were from rural areas of the North West Province where high schools provided teacher-centred or traditional teaching. Consequently, they had expected the lecturers to be information providers and in this instance the roles changed dramatically. The respondents stated that initially they felt abused, as only the Nursing Department in the university uses the strategy.

"Initially, we felt abused, as you will only find the nursing students in the library searching and discussing the learning issues while students from other departments just attend their lectures or are given notes to study"

"The students from other faculties and departments view our programme as unnecessarily demanding because we are the only department that is always running around to look for the information"

"It was worse when we were expected to use more resources from books, and the Internet"

"The nursing students are the only group in the whole university who do not have time to socialise with other students on campus because they are always looking for information in the library or working in the health care services"

"Even law students were surprised to see us working so hard and spending so much time discussing and searching for information ourselves"

The results coincided with those of Lam (2008) at the University of Hong Kong in the social work programme where students expressed great anxiety upon the introduction of PBL in 2000.

O'Shea (2003) found that students in PBL initially experience anxiety and fear about self-directed learning and report the need for an orientation and introduction to the concept. Furthermore, students may find self-directed learning stressful and may require support and direction, particularly at the beginning of the course.

The students felt overwhelmed by searching information by themselves and the following are how they verbalised their experiences:

"It was not easy to go to the library by yourself especially during the limited hours of after classes

of four modules. Searching was not a challenge in some other modules because we were given the handouts and material by the facilitators."

"The facilitators would always remind us to act as information seekers, which was challenging whilst Facilitator X gave us information readily available for us to read. This used to make our life easier."

In their study on faculty and student perceptions of self-directed learning, Lunyk-Child et al. (2010) found that students undergo a transformation that begins with negative feelings (i.e., confusion, frustration and dissatisfaction). All the respondents experienced inability to access the Internet because the computer laboratories were always full, especially the undergraduate laboratories.

"Regarding the use of the Internet, you find that the computer lab is full and you have to wait for others to finish waiting for others to finish. You end up not getting a chance to use the computer and you end up leaving."

"You go because you cannot get access to the computer to check the Internet."

The computer lab is always full ... especially the undergraduate lab."

"Students from information technology departments are always occupying the computers ... and we don't have a chance."

"Students who are not attending classes are always on the computers and when we go there after classes and group discussion, we do not get a chance to use the computers."

The Tertiary Education Linkage Project (TELP) (1998) found that "the lack of computers makes it difficult to teach the students' learning skills". Tertiary institutions and HDIs in particular, are not equal in terms of their access to resources; they have very different levels of infrastructure (Department of Education [DOE] 2004).

Time Pressure

The respondents experienced PBL as time consuming and felt overwhelmed, especially since four facilitators expected them to search for information, and discuss the learning issues on four modules (General, Community, and Psychiatric Nursing, and Midwifery).

"We were given learning issues by four facilitators on a weekly basis and all of them wanted their work during the next class. The challenge was worsened by the fact that we had to work in the health services for three days every week and only came to class for two days."

"It is not easy, as this takes a lot of time. We are expected to do this during our own time. We are expected to come to classes two days per week and the other three days go to health care services for working. In the wards we are as the working force because of shortage of staff. We don't get a chance to learn and discuss issues."

Overload

The respondents felt that they were overloaded with work, spending most of their time looking for information.

"In the library, you would only find the nursing students while other students were not stressed up. We felt abused by the facilitators."

"As nursing students, we had no social life and this is how I felt in my room when I had to do the work" (this is the picture drawn by the student who requested pen and paper to reflect his feelings about PBL (See Fig. 1).



Fig. 1. Emotional experience drawn by one participant.

"One other challenge was minimal time given to work on our learning issues."

"In the sense that I have to go to the library, look for certain information in the library for certain concepts and at the end you find I am not able to cover all the things I am supposed to for the next lesson."

"In the beginning when I started PBL, it was not easy for me to adjust because I was not used to it and my findings were that during the strategy ... eh ... eh ... I found it to be time consuming."

The respondents reported that PBL was time consuming as they spent most of their time looking for information and discussing the learning issues. The challenge was aggravated by the fact that they only came to campus for theoretical learning two days per week and the other three days were spent at the clinical services, which were very busy and short staffed.

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This concurred with Biley's (1999) finding that students reported that it was time consuming, with a large volume of knowledge to learn, and they could see themselves spending days in the library under piles of books and having great difficulty getting other work done. In Seaberry's study (2002), students found it way too much, and needed more explanation about how to work with the case material and the groups. With regard to Chinese international students' perceptions of PBL, Huang (2005) found that 32.9 percent claimed time was wasted in class; 32.9 percent felt that teaching was not focused, and 28.2 percent complained that the workload was heavy and required extra effort and work outside of class.

Positive Attributes of PBL

The respondents indicated that PBL was good in terms of empowerment, teamwork and communication. The respondents indicated that PBL empowered them through promoting critical thinking, learning from others, and promoting broad and wide reading.

"It also helps you to think critically and read broadly. Because the facilitator will always ask the following questions:

"What do you mean?"

"Can you please say in your own understanding?"

"How does this differ from other concepts or issues?"

"Please, unpack your statement" ... and you have to do that."

Lee et al. (2003) found that during group discussions, students develop effective cognitive strategies for problem solving through clarifying thoughts, sharing ideas, exploring and thinking through problems, proposing and evaluating possible solutions. As the group tries to work on a common task, the discussion provides members with an opportunity for group interaction by explaining and elaborating the problem-solving process (Lee et al. 2003)

The respondents acknowledged that PBL helped them to work as a team. Koh, Khoo and Wong (2008: 35) found that PBL promoted affective competencies such as team skills and appreciation of social and emotional aspects of health care. Furthermore, PBL in medical school had positive effects on students' social and cognitive dimensions.

"We also learn to understand different personalities. For example, there are those who by nature are domineering and others are submissive."

"This helps us to be able to work with different people and approach them differently."

The students commented positively on the benefits of PBL, which included improvement of oral communication and presentation skills.

"PBL empowered me in many ways. I am now able to discuss and argue with my colleagues, something that I could not do before."

Smyth (2005) found that students experienced personal and professional development in technical skills, particularly formal presentation skills. According to Biley and Smith (1998), graduates reported confidence in their thought processes and decision making and perceived themselves as more than capable of functioning independently. Horne et al. (2006) found that the benefits of PBL included working as a team; improvement of interpersonal/communication skills; development of teaching and presentation skills; encouragement of independent learning skills, and encouragement of more effective utilization of resources.

Horne et al. (2006) found that the benefits of PBL included working as a team; improvement of interpersonal/communication skills; development of teaching and presentation skills; encouragement of independent learning skills, and encouragement of more effective utilisation of resources.

The respondents appreciated PBL and recommended a longer students' orientation on PBL and the development of facilitators in this student-centred approach. In addition, the students appealed for introduction of PBL at first-year instead of third-year level of training.

"Firstly, I would suggest that PBL must be introduced at first year level to allow students to be acquainted with the method."

The respondents' comments support the McMaster medical school PBL approach used as a model for other PBL programmes, and still used as a benchmark for PBL (Barrows 1998). Today, few Western medical schools do not include at least some aspect of problem-based learning in their instructional itinerary, and conversely many have

built their entire curriculum and instructional procedures around problem-based learning (Barrows 1998).

The respondents commented that facilitators should be developed and trained in PBL:

"I think work shopping of facilitators, and work shopping of the students before they start PBL... the facilitators doesn't use PBL the same way."

"Work-shopping and training of other facilitators in PBL....as all facilitators do not apply it the same way."

Murray and Savin-Baden (2000) emphasise that the preparation of facilitators is crucial in developing a sense of consistency across a large group of facilitators. The facilitator's role is to encourage wide debate around the issues raised by the trigger and to assist the group to identify individual and group learning needs (Murray and Savin-Baden 2000). One approach would be to introduce the concept and rationale for the use of PBL in the programme.

All the respondents expressed a need for the employment of full-time preceptors to address the clinical learning needs.

"We are sometimes referred to as theoretical nurses by doctors in the wards as we are not so good in the clinical skills."

"Another important thing is to have preceptors who will assist in clinical learning and have assessments in the ward situations and avoid triple jumps as assessment of clinical procedures."

These comments coincided with Johnston and Mohine (2008) who emphasise that the important contribution of preceptorship as an educational model for professional practice development and the need to support the members of the preceptorship triad (student, preceptor and nursing faculty member) provide the rationale for the Nursing programme's creation. Specifically, the programme's mission is to strengthen senior undergraduate clinical nursing education, foster the professional development of the triad members, and enhance senior student preparation for professional practice.

The respondents commented that facilitators should be developed and trained in PBL:

"Other facilitators give us topics from the study guides or course outlines to go and read on and come and present in class. Some give us scenarios and ask us to identify the problems and learning issues. They want us to formulate the hypotheses and take those as learning issues to read broadly and come and discuss those in class. That is why I am saying that they approach PBL differently. Again, others give us notes and photocopied

material in class while others would say we should go and look for information on our own from the library and Internet."

McLoughlin and Darvill (2007) emphasise that for teaching and learning quality improvement, the PBL curriculum team need to visit centres of excellence in PBL as a way of capacitating and empowering the facilitators. It is essential to prepare and support students and facilitators for the change to PBL.

Staff development is at the heart of institutional development and any organisation that neglects this factor will fail to adapt to change and be relevant to its clientele and society (Van der Linde 2002).

The respondents reported a need to focus on clinical learning, which is given little attention:

"Secondly, the facilitators should also focus on clinical learning and come to evaluate us at the services instead of the triple jump tests that are imitations of the real situation."

These results concurred with McKenna and Wellard's (2004) finding that the move of nursing education to tertiary educational environments has placed great demands on educators with increased focus on academic achievement and nurse academics, subsequently leading them to question their roles and expectations in the clinical setting.

Ehrenberg and Häggbloom (2007) point out those new approaches to learning and teaching including PBL have been implemented in theoretical aspects, but limited efforts have been directed to clinical education. Furthermore, clinical learning is still traditionally regarded as an apprentice system mainly left to professional and registered nurses in the wards instead of facilitators intertwining theoretical and practical experiences (Ehrenberg and Häggbloom 2007).

Limitation

The limited ability to generalize the results because the sample is handpicked and bias may increase with greater heterogeneity of population. However, the researcher selected the homogeneous members of the group. Secondly, the researcher's being part of facilitation team might have influenced the respondents' answers

CONCLUSION

The rationale for this study was to explore and describe the experiences of nursing students on

PBL and recommend guidelines for implementing PBL in the North West University. The study found that, despite the respondents' previously disadvantaged background and the limited resources, they recommended that PBL be strengthened through staff development and introduced either from first year or throughout the NWU. The findings should assist facilitators, faculty and authorities in restructuring and reviewing the curriculum. Moreover, the findings should assist in providing a customer compliant or sensitive PBL that is comparable with other higher education institutions.

RECOMMENDATIONS

Key recommendations from key informants include retention of PBL as teaching modality, use of collaborative efforts with professional clinical staff to raise awareness of PBL and engaging them in the educational strategy. The students valued the strategy and recommended additional training and orientation of both the students and faculty members.

Students should be trained in time, and conflict management, and study skills as well regular team building exercises. The clinical model should be reviewed to provide uninterrupted weeks of clinical service.

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