

## AN INTRODUCTORY NOTE TO REFLECTIONS ON PROBLEM-BASED LEARNING EXPERIENCES

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### **Abstract**

*The ever changing population needs have prompted a number of innovative ways of thinking about learning, one of which is the shift from fact memorization to searching, analyzing and synthesizing information. Being one of such approaches, problem-based learning (PBL) presents a unique way of looking at learning in that, rather than starting with the knowledge base for practice, learning starts with a real problem that the students are likely to meet in practice. This paper reports on how the PBL concept was implemented in a graduate course offering in an environment where the lecture method is dominant. The paper provides a background for the 15 papers that follow, which are authored by 15 graduate students who participated in the PBL course offering that is described. The authors reflect on their experience of the course offering, with each having experienced the course offering in his or her own unique way.*

### **Background and Introduction**

The ever transforming world demands that educational systems keep pace with emerging needs of populations. This has prompted a number of innovative ways of thinking about learning, one of which is the shift from fact memorization to searching, analyzing and synthesizing information (Frenk, et al., 2010). Problem-based learning is one innovative approach to learning that presents a unique way of looking at learning in that, rather than starting with the knowledge base for practice, learning starts with a real problem that the students are likely to meet and that they must be able to effectively attend in practice upon graduation (De Graaff, & Kosmos, 2003). Problem-based learning (PBL) was first conceived in medical education at McMaster University in Hamilton, Canada in the mid-1960s. This was in response to the disappointment of first year medical students who were looking forward to working with “real patients” and therefore did not see the relevance of the basic courses that were failing to bring them closer to the patient (Barrows & Tamblyn, 1980). From Canada, PBL was adopted by other medical schools in the Netherlands, Australia, and the USA, and to the rest of the world (Carrera, Tellez, & D’Ottavio, 2003).

Problem-based learning is a learner-centered educational approach in which small collaborative learning groups of students direct their own learning that uses problems as triggers for learning and tutor as learning facilitator (De Graaff & Kolmos, 2003; Loyens, Magda, & Rikers, 2001; William, 2001). By being active in their learning and working on contextualized problems, PBL students develop critical thinking skills and become lifelong learners. Problems ensure that learning is context focused, thus promoting students' motivation and comprehension. They are constructed in such a way that they are complex and attract multidisciplinary interest, thus providing broad based learning for students. PBL is interdisciplinary in that problem solution can invite people from diverse fields. Other merits reported about PBL include increased retention of what is learned, integrated rather than discipline-confined learning, and development of collaborative skills. However, studies on the advantage of PBL over traditional teaching-focused approaches have yielded conflicting results as some have shown no difference between the two whereas others have indicated superior PBL outcomes. Some researchers have cautioned against the "one size fits all" lens of looking at BPL; particularly that PBL requires resources such as adequate number of learning facilitators, specifically designed learning rooms, and adequately prepared learning facilitators that may be unaffordable for some low-resourced countries.

Although the PBL idea has attracted interest, preparations for taking it aboard are still underway at the nursing school at a university in Botswana. However, the author of the paper has over time, incorporated the PBL concept in offering a specific graduate level course. I must declare that the approach to offering the course is far from meeting the characteristics of problem-based learning reported in the literature; it may be safer to say "the course offering incorporated the concept of problem-based learning" rather than claim the use of problem-based learning method. Fortunately, the emphasis of students' active participation in their learning is shared by both the PBL approach and the learning and teaching policy of the university. In addition, the nursing school engages students in team learning in both theory and practice courses. Student groups work on assigned learning activities and share what they have learned with the rest of students in the larger class. Therefore while the rest of what constituted the learning process was new, PBL's collaborative team learning was not really new to the students. This paper reports how a PBL concept was implemented in a graduate course offering in an environment where the lecture method is dominant. Two consecutive sessions of the course offering are reported with the first and second session having five (5) and 28 students, respectively. The paper describes the learning process that the course offering followed and this includes preparatory work, orientation of the class to PBL, learning scenarios and team learning, and finally learning assessment and the role of integrated essays that are the basis of the 15 papers that follow this briefing.

## **The Learning Process**

### **Preparatory Work**

The main objective of the course was to capacitate students with the knowledge, attitude and skill that would enable them to apply nursing knowledge in working with individuals, families

and communities across the age and life course spectra in order to help them engage in activities that enhance wellness. The course syllabus was prepared following the traditional lecture method and it showed learning objectives and content for each unit. Guided by both the main objective of the course and the content that learning needed to cover, four learning themes were identified and these were children, adolescents, adults, and older adults. Learning scenarios were therefore developed from each theme and a theme could have more than one scenario. The first session had five scenarios whereas the second had six. The themes were integrated in that a theme focusing on adults could, for instance, depict families starting childbearing, those approaching retirement, or those taking care of their older adult parents. The integrated themes therefore made scenarios complex such that problems would call for multidisciplinary intervention.

Besides construction scenarios, I prepared tools that were used in learning. These were tools for reflective diaries, individual student's self-assessment tool, and peer assessment tool completed by the learning team for each student. Reflective diary tool had a portion where learners would assess the facilitator. Whereas peer and self-assessment were quantitative and were graded, reflective diaries were qualitative and were ungraded. These tools had to be completed following every scenario assigned to teams. Students had a choice to submit soft or hard copies of completed tools.

I reviewed my learning/teaching philosophy that I use across all course offerings to make sure that it was still relevant. Among other things, the philosophy emphasizes active students' involvement, recognition of the knowledge and experiences that students bring to the learning encounter, and a relaxed and welcoming learning environment. I did not find any thing that I needed to modify. I had to switch from a lecture-designed classroom that I had been allocated to one that would be suitable for discussions.

### **Orientation of the Class to Problem-based Learning**

The first class meeting was used for exchanging introduction, sharing of my learning/teaching philosophy with the class, to take the students through the course syllabus, and to brief the class on PBL. After addressing the first three items, I informed the class that I would be using PBL in the course offering and that I had been doing that for some time. I then presented a brief overview of problem-based nursing that covered its definition, its philosophical underpinnings, its essential features, PBL scenarios and their essential characteristics, and how the learning process proceeds. I provided a handout of what I had shared along with a list of references. There might have been a comment or question here and there but the response of students was rather neutral in both sessions as they only listened and did not voice out any approval or concern.

Following briefing, I gave students the first assignment which was to be group work but not PBL. The assignment was meant to help the students get familiarized to the common concepts that they would find in health promotion literature and to establish mutual understanding of such concepts. In addition, the assignment was to complement what the course syllabus had provided

so as to help students know what to expect from the course. I was not going to be able to be present in the following class and one student volunteered to coordinate the discussions as groups would be reporting on their assignments. We could not form PBL groups yet as registration was still on and students were still enrolling for the course.

### **Learning Scenarios and Team Learning**

The first session of the course offering had only five students and therefore only one learning team. The second session has 28 students who were split into five learning teams of about five to six members each. Before learning scenarios were distributed to group, the facilitator read each scenario to the group. Then groups were allowed to choose scenarios of their interest. Scenarios were assigned only when time was ripe that teams could work on them and present to the larger class. Otherwise premature distribution of scenarios was avoided in order to minimize divided attention of the students as all were expected to get prepared for class contribution when assigned scenarios were discussed.

A minimum of one week was usually provided for students to work on the scenario. However the period could be longer if there were some interruptions in the weekly class meetings or if the team that was supposed to report to class has not completed its assignment. I believe in giving students enough time to work on assigned work rather than expect them to rush and submit sub-standard work. This is because if they produce quality work, then I believe that gives them a chance to know the right stuff and to take that to their practice. Especially when learners take responsibility for their own learning I believe teachers must be flexible enough to appreciate that they have competing commitments and that they learn at different paces. For the same reasons, I would not grade work that was sub-standard but returned it and advised where it needed improvement. I do not want to be understood to be saying we must condone failure to take academic work seriously but am only saying that lack of seriousness may not always explain failure to perform. One must therefore balance disciplining students and supporting their learning because, as it has been noted, the emphasis in transformative learning such as PBL is on meaning rather than rote learning and memorizing (Carrera, Tellex, & D'Ottavio, 2003); Frenk, et al., 2010).

In their scenario analysis and address to the presenting problems students were expected identify and a theory or conceptual framework for organizing their work, as well as to determine the ethical, cultural, and policy implications for their proposed solution to problems. Although none of these areas has anything to do with problem-based learning, there were considered as important to PBL as they are in the usual lecture-based method of learning and teaching in nursing. The selected theory could be a nursing or non-nursing one. This expectation is not unusual in nursing, where systematic approach to problem solving is highly valued. A framework assists in ensuring that problems are addressed comprehensively and that matters that do not belong do not cloud important issues. The application of frameworks proved to be of one

of the challenging aspects of the learning process, particularly at the beginning. However, over time it became easier.

The consideration of policy implications turned to be one of the interesting aspects of the learning process as students got acquainted to many policy documents that have a bearing on health promotion and had an opportunity to examine such policies for their relevance. It was important that nursing students interrogate public policy documents for their ability to address population's health needs because nurses are pivotal in the implementation of health policy. In addition, nurses often play the voice of the inarticulate and influence policy toward meeting the needs of the otherwise marginalized populations. Consideration of cultural implications was also important in that our socialization to nursing is based on the western model of health care. However, we have traditional health care practices that communities that nurses serve use along with modern health care practices. It is therefore important that address to the health care issues negotiates the traditional and western health care systems. Discussions on both health policies and culture allowed sharing of experiences between local and non-local students and therefore promoted cross-learning. No significant health ethics issues emerged in the class discussions. This may be because health promotion deals with cold or non-life threatening situations that would be rarely prone to ethical dilemmas.

I did not usually attend small meetings as I was the sole facilitator for the class. It was only during the initial stages of the process that I would walk from one team to another trying to find out if students understood what they were supposed to do and advising accordingly. Sometimes I would reserve a class period for teamwork and then sit briefly with each team to study the flow and content of communication. Initially, students seemed to be expecting me to approve or disapprove what they had come up with. However, slowly they worked like people who had taken ownership of their learning, even though there were times when they would like to hear my opinion. And this is reported to be usual especially when students are used to the teacher-controlled approaches to learning and teaching (Das, Mpofu, Hasan, Stewart, 2002). It is also usual that tutor guidance is intense at the beginning and gets gradually reduced as student grasp the concept of PBL and reduce looking upon the tutor for answers (Das, Mpofu, Hasan, Stewart).

Office consultations were rare because the majority of students were full-time employees and only came to the university in the evenings. As all their classes were in the evenings, that rarely left students with a free evening. This was therefore a limitation as tutors are expected to attend group meetings so as to facilitate team learning (De Graaff, & Kosmos, 2003). Teams always appointed presenters for the class but other members would comment or clarify if they found it necessary. At the completion of the presentation, the floor would be opened for discussion. I would regularly reserve my comments until all had commented and the presenting team had responded; and my contribution usually involved probing for bridging any gaps and for further reflection on the issues being discussed. If I believed the report needed to be re-focused, I would usually make my contribution and expect the team to improve the report before distributing it to class members and submitting it for grading. De Graaff and Kosmos noted that students may fail to get a comprehensive view of the problem and that the facilitator's role in such situations

should be to help students bring in the missing pieces of the puzzle. Furthermore, Woods (1994) argued that students only identify about 60% of teacher intended goals when learning is not facilitated.

As the PBL learning method had not been formally adopted by the school, obviously the course offering did not have any resources other than those provided for the usual lecture method. However, having developed a special interest in the concept of PBL from a few exposures to it, including discussions with those who implement and from the literature review, I had taken it upon myself to make do with resources at my disposal and incorporate the concept in the course offering. Fortunately, we had a well resourced university library, the Internet, and students' personal laptops available. The course was community oriented and communities were readily available; and the students were licensed to practice nursing. Of course there were some setbacks as for instance, students were not able to project their presentations on a large screen because the screen the room was not working. It has been argued that it is not wise to take PBL as a "one size fits all" approach because otherwise some developing countries with limited resources would have a challenge doing justice to the method; and that a hybrid approach to PBL would be ideal in such situations (Carrera, Tellez, & D'Ottavio, 2003).

In normal PBL, student's reflection is guided. This was done through students writing reflective diaries after every scenario and submitting those for the tutors' comments. In the smaller class (session 1) that happened without any problems. However, in the second session that had a very large class, it did not happen. Students were provided with a tool that provided areas to reflect on and encouraged to submit diaries to the facilitator. However, only a few of them did that and that was toward the end of the course offering term. With the high student number and their full time employment, as well as a single facilitator, it was difficult to make a follow of submission of reflective diaries. However self and peer assessment were submitted. As a remedial action, midway along the duration of the course, a session to get students' feedback on their learning was organized and each student was invited to share her or his view. Of course some students may have missed the opportunity as it was rare to have full class attendance. Although they did not say much about their concerns, there were indications that some students could not relate some problems posed in the scenarios to the content listed on the course syllabus. Some were expecting that the scenarios would address content in their clinical courses while the course was purely community oriented with a focus on promotion of healthy lifestyles. The focus was therefore more on social determinants of health than clinical conditions; and the students had been given a chance to research on what the concept "health promotion" is concerned with. However, the issue was not unique to the class as it is reported that PBL students are often worried that they may not be learning what they are supposed to be learning. In the second session of the course offering, however, more biological issues were incorporated in the scenarios.



## **Assessment of Learning.**

There were about five pieces of assessment for the course. Four of these are typical in PBL course offering while one was inserted into the course to provide students' with an opportunity to apply what they had learned in real life setting. The typical PBL pieces of assessment were individual student's self-assessment, individual student's assessment by the peer group, scenario analysis and plan for problem solution, and integrated essay. Self and peer assessment used a 9-item 5-point Likert scale rated 1 through 5 with a score range of 9-45. They constituted only 5% and 10%, respectively, of the course grade; and this was based on the fact that marks tended to be highly inflated. Assessments on teams' scenario assignment and integrated essays were done by the facilitator. Integrated essay was an individual student's assignment. The fifth assignment was the teams' design and implementation of a health promotion program in an area and on a community selected by the team. Assessment was done by the facilitator.

In PBL, the integrated essay is prepared from a compilation of the reflective diaries, self and peers assessment, and the assessment of the facilitator that student accumulate over the period of the course offering. In other words, integrated essay represents each student's reflection on his or her personal experience of learning. Reflection is an experience-triggered process through which a person internally examines and explores the experience in order to understand and derive meaning out of it and to arrive at new understandings, appreciations, and a new conceptual perspective (Williams, 2001). A reflection of PBL may cover thoughts, feelings, wishes, frustrations, triumphs, disappointments, and any other thing about the experience that the person finds worthy of consideration. It may address areas such as learning scenarios, team learning, learning facilitation, what one learned from the experience and how that could change his or her personal and professional life.

Ideally, integrated essay must be the last piece of the course work. However, for the course offering reported here, that happened only with the first session that had fewer students. In the second session, students were asked to submit their integrated essays before they had completed the last or fourth assignment. This was done for two main reasons: 1) Student had delay in starting their community health promotion programs, and 2) the facilitator needed time to complete grading 28 integrated essays and submitting marks at the university's stipulated time.

The 15 papers that follow are authored by 15 graduate students who participated in the PBL course offering that has just been discussed and that I facilitated. Four of the authors were in the first session (2015 class) of the course whereas 11 were in the second session (2016 class). The authors reflect on their experience of the course offering. Although all of them address the same subject, each experienced the course offering in his or her own unique way; and the titles of their papers depict themes that exemplify their experiences. I have avoided making reference to any of the papers, lest I deny the reader the opportunity to hear the voices of students.

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