

The advantages of problem based learning education essay

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Objectives: in the modern health care environment, professional nurses are required to respond to dynamic, complicated situations that require skills in problem solving, professional knowledge, decision-making ability, and group collaboration. Problem Based Learning (PBL) is a constructive teaching method that has positive learning outcomes. Yet, no study so far has examined in depth the critical components that makes PBL work. This literature review will outlines the origin of PBL, the characteristics that make PBL work, the advantages of PBL, and the limitations of PBL. Methods: we research different library databases including ACADEMIC SEARCH, ERIC, EBSCOHost, PsychINFO, PubMed, MEDLINE, and CINAHL. Many keywords have been used such problem based learning, student centered teaching approach, traditional teaching approach, Non problem based learning, and teacher-centered teaching approach. Results: this review identifies the components that make PBL work. Incorporating these components in the teaching will leads to better learning outcomes.

Origin of PBL

PBL started at the McMaster School of Medicine in Canada in 1965 (Wells, Warelow, & Jackson, 2009). Explain what was there in the original. A few years later, this approach underwent great revision by Dr. Howard Barrows who refined both the teaching strategy and the process approach (Wells, Warelow, & Jackson, 2009). What is different between the original and the revision? This teaching approach was originated for two reasons. First, this teaching method aims to help graduate medical students bridge the gap between theory and practice. Second, to prepare students cope with the challenges that had been produced by the technologies (Wells, Warelow, &

Jackson, 2009). Soon after its introduction, PBL was adopted in a number of medical schools, nursing and midwifery programs and other health related curricula in many countries worldwide (Applin et al., 2011; Dehkordi, & Heydarnejad, 2008).

Features characterize PBL/ what makes PBL work

In a PBL classroom, students are divided into small groups of 6- 8 students (Bradshaw & Lowenstein, 2011; Kamp, Dolmans, Berkel, & Schmidt, 2012). In their groups, students are presented with an authentic problem that does not have one correct answer (Lee, & Brysiewicz, 2009; Hmelo-Silver, 2004; Savin-Baden, & Major, 2004). Students generate hypotheses about possible solutions for their problem using previous knowledge (Lee, & Brysiewicz, 2009). Next, students would determine what information they need to collect to solve the problem (Hmelo-Silver, 2004). This step allows students to identify knowledge deficiencies in regard to the problem and to begin searching for this information. Hence, learning is student-driven, which allows them to engage in self-directed learning process. The instructor works as a facilitator, guide, and coach, in contrast to the traditional teaching where the instructor assumes the role of knowledge transmitter. After collecting the needed information, students share their thoughts, construct their knowledge, and solve the problem (Hmelo-Silver, 2004). PBL enhances students' learning. For instance, since the problem has more than one correct answer, students use their critical thinking and clinical reasoning skills to come up with about the possible alternatives to solve the problem (Hmelo-Silver, & Barrows, 2008). Situational interest is triggered by the nature of the problem and works as a motivating force that drives the

learner to engage in self directed learning (Schmidt, Rotgans & Yew, 2011; Savin-Baden, & Major, 2004). Students work on a real problem (hands-on activities), which increase students engagement in the learning process which motivate students to learn (Allen, Donham, & Benhardt, 2011). As students continue their self study, their knowledge is continuously modified and refined. Thus, students build their own professional knowledge and help in the knowledge construction retention (Allen, et al., 2011; Klegeris, & Hurren, 2011). In PBL, students reflect on their learning at different stages of the process (Dowing, et al., 2009). For instance, at the beginning of solving the problem, students relate their new knowledge to prior information. Next, students think about the appropriate resources they currently have and what they need. At the end, learners think about the strategies they underwent to solve the problem, and reflect on these by listing both the advantages and weakness of the strategies (Dowing, et al., 2009). This process helps students modify their learning according to their experiences in solving the problem. Hence, the PBL teaching method fosters problem solving skills, critical thinking, meta-cognition process, and clinical reasoning (Hoges, 2011; Kaddoura, 2011; Dowling, et al., 2009; Klegeris, & Hurren, 2011). In their groups, also students engage in a collaborative environment, with group-centered work rather than competitive and individual-centered (Mi, 2011). Students' gain skills in teamwork and group collaboration activities (Hodges, 2011; Rakhudu, 2011). One of the PBL assumptions is that working in small groups help students solve problems in a group that would be difficult to solve alone (Hmelo-Silver, 2004). PBL results from group

collaboration and individual knowledge acquisition, both contribute equally to the learning process (Schmidt, Rotgans & Yew, 2011).

Advantages of PBL

In the United States, McCurry and Martins (2010) compared PBL with NPBL (lecturing approach) and found that more than 75% of PBL students (sample size, who was the students, high school or BSN?) enjoyed the group work, research negotiations, group worksheet activities, and group oral research presentations. In addition, PBL students perceived this teaching approach as more effective than NPBL students in helping them to meet the course expectations. Moreover, (sample size, who was the students, high school or BSN?) evidence suggests that PBL enhances learning, creates enthusiasm, and promotes an appreciation for nursing research and evidenced-based practice (Clark, Stanforth, & Humphries, 2009; Pardue & Morgan, 2008).

Applin, Williams, Day, and Buro (2011) sample size compared the difference in self-reported competence between graduates from PBL and NPBL nursing programs in Canada. The findings suggest that PBL graduates have more abilities to think critically and engage in self-directed evidence-based practice. In Sweden, sample size both students and staff nurses believe that PBL is helpful in bridging the gap between theory and practice (Staun, Bergström, & Wadensten, 2010). In Australia, Vittrup and Davey (2010) suggested that PBL improves knowledge acquisition and professional development in graduate nurses. In a randomized controlled trial (RCT), in the Mansoura University, Egypt context, Gabr, and Mohamed, (2011) found that PBL students engaged in self-directed learning and gained more skills in solving problems. In Iran, Dehkordi and Heydarnejad, (2008) found that

students perceived PBL as more effective compare to the NPBL students. In Saudi Arabia, Ali, and El Sebai (2010) conducted a one-group pre-test and post-test design to investigate the effects of the PBL approach. The study examined the impact of PBL on nursing students' learning and their self-directed learning abilities. PBL was introduced in the Evidence Based Nursing Course for one semester only. The results showed significant differences between the pre-test and post-test mean scores for this approach to learning. At the beginning of this century, PBL started to spread among other health professions such as medicine, dentistry, and physiotherapy colleges (Khalil & Al Rukban, 2010). The author outlines that the majority of the medical colleges in Saudi Arabia are planning to change their curricula to PBL curricula, and most new medical colleges are adopting the PBL curricula (Khalid, 2008). King Saud University Medical College, Riyadh, has implemented PBL in the undergraduate programs (Husain, 2011). This shift has shown great results in the knowledge retentions (Husain, 2011). In Qassim Medical School University, Saudi Arabia, PBL encourages students to communicate effectively and work collaboratively (Kaliyadan, Amri, Dhufiri, Amin, & Khan, 2012). In addition, 75% of PBL students were able to answer problem- solving questions correctly versus 25% of NPBL students (sample size, sample characteristics) (Al-Damegh, & Baig, 2005).

Policy for nursing education

In February 2010, a forum was held about the challenges and future of nursing education by the Institute of Medicine (IOM) and the Robert Wood Johnson Foundation, to discuss the different teaching methods that have the greatest impact on learning outcomes (IOM, 2010). This forum outlines many

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recommendations about the future of nursing education. The main goal of these recommendations was to improve the link between theory and practice. For instance, Recommendation 6 spoke to ensuring that nurses engage in lifelong learning. PBL teaching method has been shown to improve nursing students' self-directed learning skills. Thus, graduated nurses will be responsible for updating their own professional and personal knowledge. In a Carnegie National Nursing Education Study, Benner and colleagues discovered that many current educational practices do not promote critical thinking and clinical judgment (Benner et al., 2010). Benner (2010) called for radical curriculum reform in nursing education through student centered teaching and learning approach as the way to prepare graduate nurses. Benner, (2010) stated that " The educators in nursing science need to improve the teaching methods to ensure that all graduates are safe and effective clinicians, as well as lifelong learners who develop clinical knowledge" (p13). In this study, Benner and colleagues (2010), reported that many students complained about the amount of information given in the class via PowerPoint presentations, where the students' role was to sit, watch the slides go one after the others, and agree with everything that teachers are saying. A few hour later students were not able to recall most of the information given in the lectures. Benner (2010) postulated that by mentioning that when lecturers rely on memorization only, student will not get the entire concept because they did not understand it. Also, students reported that their classroom teachers lecture without examples of what they might see in clinical settings. Benner (2010) concluded the study by stating that " the research team was struck by the variability and even poor

quality of teaching in classrooms" (p. 65). Thus, the author recommended teachers to work as a coaches or facilitators to create an optimal learning environments that enhance learning outcomes. Hence, PBL is a teaching method that satisfies this call.

Limitations of PBL

Challenges related to PBL as a teaching method

Not all of the implementations of PBL have been successful in eastern countries such as China, Korea, South Africa, and Macao (Huang, 2005; Hwang & Jang, 2005; Rakhudu, 2011; Yuan, et al., 2011). In Korea, Hwang and Jang (2005) found that students expressed their frustration with not being able to readily understand the essential content of the course using the PBL method. In Macao, half of the students indicated that PBL was a stressful (why?) time-consuming process that increased their workload (how?) (Yuan, et al., 2011).

Challenges non- PBL related

There are many challenges for implementing PBL that are not related to the teaching method per se, but related to many factors such as the faculty members' attitudes toward PBL, the leadership, the culture, and the infrastructures of PBL. For instance, the faculty members' attitudes toward PBL can play role in failing this teaching approach. Lim (2012), found that some PBL opponents believe that the only way to teach is through direct transmission of information by someone who is expert in the content. Other instructors perceive PBL as time consuming for teachers because of the workload (Ribeiro, 2011). In addition, PBL opponents worry about the course

content coverage (Ribeiro, 2011). In Lee, Yoo, and You (2009), (SAMPLE AND SIZE) most of the teachers believed that there is no need to change their lecture-based instruction since both the teachers and the students were satisfied with the current teaching method. Some teachers argued that PBL prevented them from sharing their knowledge and experience with the students (Rakhudu, 2011), made their role passive (Rafetery, et al., 2010), where others worry that not all students would be active participants in the group (Chiang, Champan, & Elder, 2010). The leadership role in facilitating PBL includes funding staff to attend classes about PBL, recognizing teachers who embrace PBL, facilitating rooms equipped with computers, approval, and enforcement of this approach (Ribeiro, 2011). Lim (2012) outlines that a large part of resistance towards PBL is natural resistance against change, as it is expected from teachers who spent an entire career teaching in the traditional teaching method. Hence, leadership enforcement could solve this issue. Educating faculty to use this approach is crucial in embracing it. For example, Lee, Yoo, You, (2009), found that most of the teachers who were not using PBL were not familiar with the terminology "constructivism teaching methods". Culture plays a role in succeeding or failing this approach. For instance, Huang (2005) noted that the Chinese culture emphasizes respect for knowledge and wisdom. Students respect their teachers and those who provide them with knowledge (Huang, 2005). In PBL, the students had difficulty in debating a subject with their lecturers. One of the students commented "I feel more secure and confident to learn new knowledge by the Chinese style of learning, because I know exactly what I have to learn." These attitudes contradict the PBL approach where students

are encouraged to ask and challenge the teachers as a way of critical thinking practice. In order for PBL to work, initial infrastructures should be in a place. For instance, adequate resources such as the library access and computer labs should be available (Rakhude, 2011). Lim (2012) found that when student numbers increase without recruitment of more tutors, the size of PBL groups would inevitably increase beyond the typical recommended maximum of 8 to 10 students, making PBL difficult to work as intended.

Conclusion

PBL has many positive learning outcomes. It satisfies the call for the nursing education curriculum reform. This teaching method helps in bridging the gap between theory and practice and prepares graduate students to work competent in the clinical settings. The quality of nursing care will be improved if nursing students prepared to be critical thinker and have skills in problem solving. However, this teaching method has many assumptions in order to be beneficial. Violation of these assumptions will minimize the outcomes of this approach.