Education & Training

From student to tutor in Problem Based Learning: An unexplored avenue

Prabhu N Nesargikar

Abstract

Problem Based learning (PBL) has redefined the role of a tutor, from being a teacher in the traditional 'pedagogy' style of learning to a facilitator in the 'andragogy' approach. This has often led to 'tutor difficulties' in accepting, and adapting to this transition. Faculty training remains critical for successful implementation of a PBL based curriculum, and considerable resources are exhausted in teaching new tutors the art of facilitating a PBL group. The aim of this article is to explore the concept that a PBL tutor coming from a PBL background may be beneficial compared to faculty training, and this concept is supported by a literature review that identifies common characteristics between a PBL student and a PBL tutor.

Introduction:

Problem based learning (PBL) has been an important development in health professions education in the latter part of the twentieth century. Since its inception at McMaster University[1] (Canada), it has gradually evolved into an educational methodology being employed by many medical schools across the globe[2,3]. PBL presents a paradigm shift in medical education, with a move away from 'teacher centered' to 'student centered' educational focus. The assumptive difference between a pedagogy learner and an androgogy learner (Table 1) was summarised by Knowles[4], and the androgogy approach underpins PBL. This shift has redefined the role of a teacher in the PBL era, from being a teacher to a facilitator.

Table 1: Differences between Androgogy and Pedogogy learner (Knowles)

Characteristics	Pedagogy	Androgogy
Concept of the learner	Dependent personality	Self-directed
Readiness to learn	Uniform by age-level & curriculum	Develops from life tasks & problems
Orientation to learning	Subject-centered	Task- or problem-centered
Motivation	By external rewards and punishment	By internal incentives curiosity

It is well known that implementing PBL as an educational methodology required additional resources compared to a traditional lecture based curricula[5]. In addition, there was a need to recruit and train a large number of tutors to facilitate the PBL process[6].Training PBL tutors is an important component of a successful curriculum change, and is a continuous process. Training workshops and role plays were employed to train conventional teachers, but challenges were faced in developing them into effective PBL tutors[5].

The aim of this paper is to evaluate the literature for any evidence supporting the theory that a PBL background student may develop into an effective PBL tutor. The Medline, EMBASE and CINHAL databases were searched to look for any pre-existing literature or research supporting this theory.

Results:

To the best of my knowledge, there has been no reported evidence supporting this theory. With limited literature evidence, this paper aims to identify common grounds between a PBL student and a PBL tutor, and whether being a PBL student may contribute to the overall development as a PBL tutor. The discussion evolves around the following domains:

1. Teaching Styles:

The ideal teaching style of a PBL tutor is a facilitative-collaborative style, which augments and supplements the PBL process. The teaching style inventory developed by Leung et al[7] hypothesised four domains of teaching styles: the assertive, suggestive, collaborative and facilitative styles. Though a PBL tutor assumes himself in possessing this style (facilitative), it does not necessarily match with the students perceptions, as reported by Kassab et al[8].

Some of the characteristics of being a PBL student may foster the development of a collaborative teaching style. Being a student, you are expected to be a collaborative learner which is critical for achieving and improving group performance[9]. Initial years as a student in PBL may contribute to developing attributes required to develop a preferential teaching style.

2. Facilitating critical thinking:

PBL is grounded in cognitive psychology and is set out to stimulate curiosity and build durable understanding. One of the

roles of the tutor is to foster critical thinking and enhance the group's ability to analyse and synthesise the given information. This attribute stems from the tutors ability to facilitate, rather than teach. Irby[10] opined that clinical teachers tended to teach as they themselves were taught using traditional approaches, which may affect the process of stimulating critical thinking among the students.

A tutor from a PBL background would have the ability to think critically, through a process of developing thoughtful and well-structured approach to guide their choices[11]. Tiwari et al[12] showed in their study that PBL students showed significantly greater improvement in critical thinking compared to traditionalist courses. Hence, prior exposure to a certain learning style can create a cognitive psychology that can contribute to tutor development.

3. Group dynamics:

One of the prime roles of a PBL tutor is to facilitate the PBL process by keeping the group focused on tasks, and guiding them to achieve their goals. Tutors who are skilled in group dynamics are evaluated more highly than those who are not so skilled[11,13]. Tutors need to develop sound appreciation of the group dynamics, failing which may lead to fostering uncertainty with in the group. Bowman et al[13] commented about the lack of consideration on the emotional implications placed on prospective PBL tutors when tutoring small groups, especially the skills required to balance between short term anxieties and potential serious problems. This imbalance which usually serves as unconscious incompetence may affect group dynamics.

PBL students would have experience of group dynamics and the pressures of working within it. They would have developed a model of working with members with varying attributes. Blighet al[14] showed in their study that students from a PBL curriculum rated themselves better in team working and motivation compared to conventional course peers. This highlights the fact that an apprenticeship model may be necessary in developing the right skills to be an effective tutor.

Table 2: Common ground

Ideal PBL student	Ideals of a PBL tutor
Knows his role within a group	Would help in identifying different roles students may play
Knows to ask empowering questions	Would help in guiding groups in achieving learning objectives
Monitors his own progress by self evaluation and motivation	Would help in monitoring individual progress and motivate group
Bonds with other members to achieve goals	Would help in building trust and encourage bonding of group members
Develops thoughtful and well structured approach to guide choices	Would help in facilitating critical thinking
Fosters collaboration with other group members to create a climate of trust	Would facilitate collaborative teaching style

The characteristics of a student that may foster ideal attributes in a PBL tutor are briefly summarised in Table 2, and has evolved from the work of Samy Azer[9,11].

4. Tutor training

Considerable resources are exhausted in teaching new tutors the art of facilitating a PBL group[6], and the usual cohort is teachers from a conventional taught background. The shift from didactic expertise to facilitated learning is difficult for those tutors who feel more secure in their expert role. Finucane et al[5] published their study which showed that only a minority of staff had volunteered to be PBL tutors, possibly reflecting the fact that absence of prior exposure to PBL style of learning may have contributed to this. In spite of tutor training workshops, they could only retain 73% at the end of two years.

Prior exposure as a student may help negate much of the stigma associated with PBL. They would have observed and learnt from their PBL tutors, and would have analysed their contribution to the PBL process. They could reflect on their experience and evolve into an ideal PBL tutor. This would help in minimising resource expenditure and contribute towards retention of staff.

5. Tutor comfort zones:

PBL contextualises learning to practical situations, with integration across disciplinary boundaries. Dornan et al[15] reported on how some teachers felt PBL to be a frustrating drain on time as it did not fit their educational style, and was a distraction from clinical teaching, demonstrating the 'conditioning effect' of prior experiences. This further fuels the debate between content vs. process expertise, but prior knowledge of the process would benefit the students and the PBL process.

6. Role modeling:

Role models have long been regarded as important for inculcating the correct attitudes and behaviors in medical students. Being an ideal role model is considered as one of the prime requisites of a teacher. In a recent study, Mclean et al[16] showed that PBL students tended to have a higher percentage of role models compared to students from a traditional programme (73% vs. 64%). In an ideal setting, a "content and process expert" would be the perfect role model for the PBL students, but this may not be realised in all settings.

Paice et al[17] commented on the resistance to change within the medical profession, and highlighted the need for training to emphasise the values and attitudes required. This puts an added emphasis on the tutor to demonstrate tenacity and virtues to be an effective role model, avoiding 'cognitive clouding' from previous experiences.

As a PBL student, they would be exposed to variety of PBL tutors. They would have incorporated the good points of an effective PBL tutor, and would have reflected on the negative aspects. Reflective practice enables them to develop the right attributes. Though these attributes may be difficult to develop through training workshops, having a background of PBL education may help mould the tutor characteristics.

Conclusion:

As PBL continues to be employed across different specialties, there would be increased emphasis on the medical schools to match the resources needed to implement it. There is an argument for developing an apprenticeship model or recruiting tutors from PBL background, which would help in reducing the cost in training new tutors, along with nullifying the negative influences a new tutor may bring. The biggest limitation in the present setting is finding a cohort of PBL background tutors, but an apprenticeship model may benefit teachers from conventional background. A prospective research study exploring the attributes of tutors, successful and less successful, from traditional, PBL and hybrid curricula and those who have crossed the Rubicon from traditional to PBL can effectively answer this question.

Competing Interests
None declared
Author Details
Prabhu N Nesargikar, MRCS, Clinical Research Fellow, University Hospital of Wales UK
CORRESSPONDENCE: Prabhu N Nesargikar, Flat 52, Heath Park Drive, Cardiff CF14 3QJ
Email: drbhu@hotmail.com

REFERENCES

1. Neville AJ, Norman GR. PBL in the undergraduate MD program at McMaster University: three iterations in three decades. Acad Med 2007; 82: 370-4.

2. Neville AJ. Problem-based learning and medical education forty years on. A review of its effects on knowledge and clinical performance. Med Princ Pract 2009;18: 1-9.

3. Galey WR What is the future of problem-based learning in medical education? Am J Physiol. 1998 ; 275:S13-5.

4. Knowles, M.S.. Applying principles of adult learning in conference presentations. Adult Learning 1992; 4:12.

5. Finucane P, Nichols F, Gannon B, Runciman S, Prideaux D, Nicholas T. Recruiting PBL tutors for a PBL-based curriculum: The Flinders University Experience. Med Educ 2001:35; 56-61.

6. Epstein RJ. Learning from the problems of problem-based learning. BMC Med Educ 2004; 4:1.

7. Leung KK, Lue BH, Lee MB. Development of a teaching style inventory for tutor evaluation in problem based learning. Med Educ 2003: 37; 410-16.

8. Kassab S, Al- Shboul Q, Abu-Hijleh M, Hamdy H. Teaching styles of tutors in a problem based curriculum: students and tutors' perception. Med Teach 2006: 5; 460-64.

9. Azer SA. Becoming a student in a PBL course: twelve tips for successful group discussion. Med Teach 2004: 26; 12-15.

10. Irby DM. Models of faculty development for problem based learning. Advances in Health Sciences Education 1996: 3; 69-81.

11. Azer SA. Challenges facing PBL tutors: 12 tips for successful group facilitation. Med Teach2005: 27; 676-81.

12. Tiwari A, Lai P, So M, Yuen K. A comparison of the effects of problem-based learning and lecturing on the development of students' critical thinking. Med Educ2006: 40: 547-54.

13. Bowman D, Hughes P. Emotional responses of tutors and students in problem based learning: lessons for staff and development. Med Educ 2005: 39: 145-53.

14. Bligh J, Lloyd –Jones G, Smith G. Early effects of a new problem based clinically oriented curriculum on students' perceptions of teaching. Med Educ 2000; 34: 487-89.

15. Dornan T, Scherpbier A, King N, Boshuizen H. Clinical teachers and problem based learning: a phenomenological study. Med Educ 2005; 39: 163-70.

16. McLean M. Clinical role models are important in the early years of a problem-based learning curriculum. Med Teach 2006: 28; 64-69.

17. Paice E, Heard S, Moss F. How important are role models in making good doctors? BMJ 2002: 325; 707-10.