

Enhancing collaborative learning through peer-assisted learning

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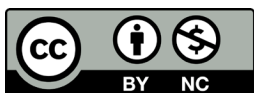
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ABSTRACT

Peer-assisted learning involves students (peer tutors) facilitating small collaborative study groups composed of peer tutees. In a session, learning content is revised through a range of activities that encourage discussion, clarification, elucidation, and evaluation. Peer-assisted learning promotes greater sense of belonging to the academic community. Along with cognitive and psychomotor development, affective components such as an increase in self-esteem, self direction, analytical thinking, self-evaluation, and peer cooperation are also developed. Having similar roles, a similar knowledge base, and similar learning experiences all contribute to social cognitive congruence, which allows for informal and empathic communication and facilitates the creation of a learning environment that encourages an open exchange of ideas and personal concerns of students. An increasing number of medical students are enrolling in medical school worldwide, there are fewer resources available for teaching them, and there is a persistent push for economy and cost-effectiveness where many students can actively learn in a classroom setting. These factors all contribute to a growing interest in peer-assisted learning in the medical field worldwide. Despite empirical evidence pushing for institutions to adopt peer-assisted learning, it is an underutilized tool in Nepal. It is the goal of this review to provide an overview of peer-assisted learning, its underlying theories, benefits and pitfalls, and how it can be implemented.

Keywords: Active learning, Collaborative, Health Professions' Education, Peer-assisted learning



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INTRODUCTION

Acquiring knowledge and skill via active support and help from companions who are not professionals can be defined as peer assisted learning (PAL). It is a process where one learns by doing.¹ In college, we often had seniors or classmates with a higher level of knowledge supervise our learning. Supporting less knowledgeable students, the more knowledgeable students consolidated their previous learning. A mentor who had just experienced the learning and acquired the lesson was able to impart authenticity to students who were less knowledgeable. It was also more comfortable for them to ask questions and confirm understanding in a "safe space" than in an academic setting. There has been an inclined interest in PAL among health science students. The shared similarity in knowledge base and experience in learning 'cognitive congruence' provides a medium for mutual understanding.² An author of this article who was trained in China experienced well-structured peer-assisted learning. She shared "During my undergraduate Chinese language course at Tongji University in China involved institution-supported peer-assisted learning. A Chinese student from the university was assigned to our group and taught us Chinese in small groups. We would schedule a time to meet after class to study Chinese together. Compared to teacher-led classes, these sessions were not intense. We were able to discuss our concerns and confusions in class during the session. Our learning objectives were always met, regardless of session length. Our peer tutors were Chinese undergraduate students specializing in Chinese. A peer tutor may also be appointed from another stream. My experience with the tutors yielded significant results, despite the fact that they were paid very nominally. Similarly, we were also assigned peer tutors who were more experienced in the field during my first year of medical school. But one difference stood out: only foreigners and students having difficulty with the course were included. The course helped me meet the learning outcomes, but it adversely affected my self-esteem."

Globally, there is growing literature and supporting evidence for peer-assisted learning. While peer-assisted learning is quite common in Nepal among health professions' students^{3,4}, formal institution-based implementation is lacking. In this article, we will discuss peer-assisted learning and how it can be adopted into the teaching learning experience of health professions'.

Understanding peer-assisted learning:

A well-known aphorism in educational literature is, 'To teach is to learn twice' (Joubert, 1754-1824). PAL is described as: 'people from similar social groupings who are not professional teachers helping each other to learn, and learning themselves, by teaching'. By this definition, 'peers' are persons who share similar characteristics, but are not necessarily from the same course or year of study. They may also include trainees or students from different medical disciplines, although their status and qualifications should not be significantly different. PAL is regarded as an active learning method in which students work together on an equal footing to accomplish knowledge and skill learning objectives⁵. Systematic review by Burgess et al.⁶ concluded that PAL benefits the development of professional attributes and the understanding of knowledge content. Unlike rigorous faculty-led sessions, PAL was reported to be a relaxing experience by most participants.⁷ Peer teaching provides students with an inquiry-based learning experience that is highly successful as students interact with one another, applying their knowledge and abilities to foster deeper learning engagement.

Theoretical framework of peer-assisted learning

A strong educational theory underpins PAL which explains its success and appeal.

Cognitive developmental theory:

The cognitive tradition explains PAL's effectiveness by examining how new knowledge is acquired, stored, and reproduced. A crucial learning process according to Piaget is cognitive conflict, which occurs when tutors and tutees challenge each other's understanding, preconception, and views. The influence of Piaget is evident in the aspects of PAL, especially the dynamic active learning elements that encourage students to become more self-directed.^{8,9}

Vygotsky's Zone Of Proximal Development

PAL is a collaborative learning process is based on Vygotsky one of the early proponents of scaffolding theory described the 'zone of proximal development'. It represents the gap between what a learner can do on their own and what he or she can accomplish with more experienced assistance.

Interacting with more experienced peers is therefore considered to be very important, when learning independently would not be possible. A peer teacher does not necessarily play the role of the more experienced person in PAL. It is rather the combined prior knowledge of the group that stimulates and supports each learner to advance beyond the level they would have reached on their own⁸. Peer teachers improve not only their subject matter knowledge but also their ability to explain and teach challenging concepts.

Using Whitman's¹⁰ findings, they report that when students learn material for their own purposes, they seem to learn it differently from when they are learning it to teach others.

Social-Psychological Theoretical Bases Of Peer Tutoring

As Vincent Tinto observed, the socially unintegrated students in academia are likely to drop out. By providing a structured environment for new friendships and collegial relationships, PAL sessions encourage and support academic success¹¹. Being on the same wavelength with each other in terms of learning experience and similar role creates a safe learning community. Thus these safe learning environments seemed to be the fundamental building block for both student and tutor confidence. A tutor's intrinsic rewards from tutoring, such as satisfaction and learning, are thought to influence his or her motivation and attitudes toward peer-assisted teaching, just as extrinsic rewards like payment, privilege, and evidence of participation do. Communication takes place and its modeling effects are evident in the exchange of resources and information, feedback given and received, and mutual influence on reasoning and behavior. In the study by Glynn et al.¹² peer learners appeared to gain a newfound confidence in their ability to succeed along the educational journey through the concept of "modeling". With peer-assisted learning, tutors and tutees can work together to develop metacognition, which is the ability to select the right study strategy based on the needs and circumstances of a particular learning situation¹⁰.

Categories of peer-assisted learning

According to Falchikov¹³, peer tutoring can fall into three categories within an institution. The Falchikov categories include:

1. Same level peer tutoring with equal status: Peers with similar levels of experience and attainment are paired together.
2. Same level peer tutoring with unequal status: Students with higher academic achievements but of same education level may be selected to be tutors.
3. Cross level peer tutoring : This entails PAL where more senior students peer tutoring junior students.

The benefits of peer-assisted learning

A PAL model promotes active learning in which the students take on a greater responsibility in delivering course content. PAL represents an inexpensive way to organize small group learning in situations where there are relatively high staff-student ratios. Moreover, it contributes to student socialization, which is a vital component of third-level education. By reflecting on and revising their prior learning, PAL tutors can become more self-directed in identifying and addressing any learning needs they may have related to the topics being taught, and become more confident in their content knowledge and skills. By understanding educational philosophies, tutors can better prepare for their academic journey and engage more fully with the educational programme. A student-led small group learning environment stimulates deeper understanding and enhanced personal development by fostering better sharing of individual perspectives. Learning environment is perceived as less intimidating, and students feel comfortable to express doubts, misunderstandings and flawed concepts.⁵ Near-peer tutors are often better at explaining concepts to junior colleagues than more experienced teachers. Peer tutoring in health professions' education was significantly more effective in improving student academic performance than traditional education, among ten studies that compared academic performance eight reported better performance according to systematic review by Santee et al.¹⁴

Challenges

Organizational challenges are often associated with PAL. Concerns are raised when students who are not trained as teachers supervise or facilitate other students' learning. Tutees may receive incorrect information from PAL tutors due to a lack of depth of content knowledge. The tutor may overburden

the tutees with knowledge or teach in a way that is inconsistent with the rest of the curriculum and causes confusion. Interpersonal conflicts may impede tutee-tutor interactions. PAL must be properly organized and peer tutors must be trained for successful PAL sessions. They should gain a thorough awareness of their mandate, the learning outcomes, and the purpose behind their participation. Written instructions in the form of a manual or guide to serve as a reminder of what they should be doing should also be provided. PAL educators must establish mechanisms for monitoring and supervision that are close enough to ensure consistency in instruction between groups while distant enough to prevent constraints on creativity^{5,8}.

Peer-assisted learning: getting it done

The survival of any educational initiative will often depend on faculty support. There is a prerogative that teaching is for teachers, which is held by many teachers. Fears of potential substitution of professionals by less qualified manpower are fueling the professionals' concerns. So a good relationship between management and faculty members is mandatory. Defining a peer tutor's responsibilities clearly may reduce opposition. Faculty members must be given empirical evidence that holding

control over students is undesirable, and much current educational discussion highlights the advantages of transferring authority of gaining knowledge from teacher to learner¹⁵. If PAL is perceived as an add-on or an odd educational practice, it will not be successful. Instead, it needs to be formally scheduled, reviewed, and timed. The students must also know that PAL is an integral part of their academic program; otherwise, they might undervalue its importance and decide not to participate. An ideal way to conduct PAL is in small group settings where peer learners discuss and reflect with their tutors and, if necessary, the tutor corrects misconceptions and explains difficult concepts. Training sessions should focus on developing facilitation skills for peer tutors, preferably led by experts in health professional education. Setting learning goals, encouraging critical thinking, and giving effective feedback can be taught through these methods. Evaluation is a crucial component of initiatives such as PAL as it provides empirical evidence of their success. A pre-PAL and a post-PAL assessment would be an ideal approach. Nonetheless, a different approach would be a process evaluation, where learners provide feedback on the PAL's implementation and experience. The PAL planning framework is presented in Table 1:

Table 1: Peer assisted learning planning framework (contd on page 10)

Domain	Definition	Question
Background	It is critical to understand the rationale behind PAL's adoption, be cognizant of the broader context, and clarify who will be in charge of the project.	Where does the curriculum stand currently and in what context?
		What are the reasons behind considering this PAL project now?
		How will the project be led, and who is responsible for it?
Aims	Aims often relate to PAL's delineated advantages.	For tutors, what are the aims and objectives of the project?
		For tutees, what are the aims and objectives of the project?
		For institutions, what are the aims and objectives of the project?
Tutors	Tutors must know what is expected of them and be adequately prepared.	How will tutors be recruited?
		How will tutors be trained, and what will be required of them?
		In what other ways will tutors prepare themselves and reflect afterward?

Table 1: Peer assisted learning planning framework Contd.

Domain	Definition	Question
Tutees	A tutee's prior learning and experience should be considered.	What will the selection process for tutees be?
		How much prior experience and knowledge will tutees have in relation to the subject?
		Before students interact with tutes, what information and preparation do they need?
Interaction	To give tutors a diversity of teaching experiences, curriculum developers may want to explore multiple kinds of PAL.	How will the interaction be structured, and what resources will be needed?
		The PAL interaction typically involves what kind of activities?
		What will be the timing and location of PAL interactions, and how will they be arranged?
Evaluation	The effectiveness of PAL engagements can be comprehended through participant interviews, focus groups, observational studies conducted by staff or simulated patients	How will participants' feedback be collected and used?
		What will be the piloting and evaluation process for the project?
		How will the academic hypotheses be tested?
Institution	It is advised that PAL be carried out methodically, logically, and reflectively, aligning processes and topics with learning objectives for the academic program, and soliciting approval and stakeholder participation as necessary.	How can stakeholders be involved in the project?
		What are the implications of the project for staffing and funding?
		What are some ways the project could be developed and how might it impact the curriculum?
Realization	By anticipating potential problems early and recognizing them, problems can be minimized.	Are there any potential pitfalls or barriers to this project's success?
		What is the timeline for this project?
		What steps must be taken to develop the project, and by whom?

Adapted from Ross et al.¹⁶

RECOMMENDATIONS

The research on effectiveness on reverse tutoring where a weak student acts as a peer tutor is advised. Also, we recommend the study on effectiveness of structured peer tutoring especially to students in the first year of their undergraduate studies and during their internship.

SUMMARY

PAL is a highly beneficial educational innovation

that should be considered by medical education providers given its well established benefits for students and faculty alike. It's a preferred method for helping healthcare students learn from each other as well as to learn themselves through teaching. Especially for institutions with limited resources, it can be an alternative way to manage large batches. The benefits of PAL outweigh the risks, but with careful planning, these drawbacks can be minimized. Thus, incorporating PAL strategies into curriculums can potentially enhance the learning experience for medical students.

Acronym:

PAL : Peer-assisted learning

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