Exploring Blended Peer-Assisted Learning in Undergraduate Medical Education

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ABSTRACT

Background: Blended Peer-Assisted Learning (ePAL) platform consists basically on the integration of different existing e-Learning tools and platforms in a coordinated way in order to provide the implementation of PAL strategies. In this context, methodologies, techniques and innovating tools, supported by Information and Communication Technologies (ICTs) have been developed to promote better educational experiences

Objective: To explore the blended Peer assisted learning in undergraduate medical education

Material and Methods: A qualitative single case study in which 4 focus group discussions and two in depth interviews have been conducted from medical students of 3rd year MBBS. North West School of medicine is taken as one case, selected through purposive sampling technique. Each FGD was audio-recorded, transcribed verbatim, analyzed and themes were identified.

Results: Total 22 students participated in 4 focus group discussions and 2 in-depth interviews. Six themes that emerged were" Learning Environment" indicates as a vital factor in effective teaching and learning "Concept Building and Comprehension" indicates understanding the subject matter of the course and clarifying basic and complex concepts "Developing Academic" indicating a PAL learning experience is a good learning experience to improve academics. **"**PAL in the regular teaching program **"**indicates that same year, equal status model of PAL should be part of regular teaching. "Operationalize aspect of PAL" indicating formal training sessions for peer tutors prior to proper PAL sessions improves its effectiveness in delivery of content. "Accomplishment of learning "indicating that peer learners plan and lead their own learning activities with a greater willingness to acquire knowledge

Conclusion: The concept of providing and receiving feedback is deficient and its significance with respect to teaching and learning is lacking. Contextual academic workload and time constraints may impact the quality and timing of feedback provided. There is need of collaborations between university administration and faculty so that feedback can be utilized effectively in the learning process.

Key Words: Blended, Peer, assisted learning, teaching, shortcomings, Benefits undergraduate, medical students, Tutees, Tutors, leader perceptions

Introduction

The methodologies applied in classroom and consequently the successful learning is a constant concern and a focus of attention for the scientific community. This concern leads to the exhaustive search for more and better means to strengthen these two elements: `methodology and successful learning`.

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Therefore, different methodologies, paradigms, and tools have been proposed to provide an insight on the student's academic and professional development and to consolidate the content taught in classroom, such as Blended Learning and Peer-Assisted Learning (PAL).[1]

The field of medical education cannot remain immune to the effects of this aptly called E-revolution. [1] The three primary characteristics of e-learning are the nature of the learning experience, synchronicity of participation, and presence or absence of face-to-face instruction.[2] The integration of e-learning in medical education is the need of the hour. [3]

Therefore, there is a growing need of new methodologies, approaches and tools, in order to foster students' socialization and to improve their

learning outcomes. In this context, methodologies, techniques and innovating tools, supported by Information and Communication Technologies (ICTs) have been developed to promote better educational experiences.[4]

However, with conditions ever changing, PAL also facing new areas and shortcomings like increased utilization of digitalization, web-based PAL or blended-learning formats of it might receive greater interest. More research is needed to identify formats and combinations that could work in favor of PAL.[5]

Blended learning (BL) is an e-learning approach that combines the strengths of both online and face-to-face learning, creating meaningful interactions between students, teachers, and resources.[6,7]

Blended Learning increases the options for greater quality and quantity of human interaction in a learning environment.[8] This paradigm provides realistic practical opportunities for learners and teachers to make learning independent, useful and sustainable.[9]

This study was conducted at the time when traditional face to face Peer assisted learning was implemented at Northwest School of as teaching methodology. Thus, this study was conducted at NWSM to introduced and implemented Blended PAL generic plat (ePAL) environments form from 2019 in 3rd at the undergraduate Students with a rationale of integration of face-to-face interaction and online learning components in Peer-Assisted Learning.

Materials and Methods

It was a qualitative single case study. Self-constructed questionnaires were used to collect the data. The questionnaire comprised of open-ended items for quantitative data (10 items each for PAL Tutees and tutors, which was tested by three subject specialists for internal consistency. Ten open ended items were used for qualitative data and replies were recorded in written and audio recording forms. Questionnaires were drafted in English language and the discussion was also carried out in English language. The study was carried out in with 3rd years MBBS students of Northwest School of Medicine Peshawar from August 2018 to January 2019. For quantitative data, A total 22 participants (20 Tutees, 2 tutors will be participated in FGDs and in-depth interview A total 4 FGDs (3rd year) 2 In-depth interview Tutors. Sampling technique used was Convenience purposive sampling. For data collection, one to one interview was carried out, by the principal investigator. The participants were explained

the objectives of the study. The participants were provided questionnaire to reply as a written document.

All the participants, gave their informed written consent. Under taking and assurance was given to the participants regarding securities of information, anonymity and confidentiality. The participant was also informed that there will be no reward or payment given to them for their participation. The permission from Institutional Review Board (IRB) of was taken. Extensive literature search was done before formulating the questionnaire, the main area of interest that were pertinent to this research were identified and the items were framed accordingly. The areas were explored in further detail to find the answer to the study research questions. To enhance the research quality, ahead of face-to-face interviews, a logical sequence was given to the items. The validation of questionnaire was done, using the question that had to be used. Pilot interviews were conducted with 6 medical student 3 tutors and 3 tutees. The research questions and tools were aligned, followed by deductive coding and thematic analysis. Triangulation was done by taking notes, member checking and interviewee comparison. The participants included were both males and females, students of Northwest School of Medicine Peshawar, who consented to participate. The participants with incompletely filled questionnaire were excluded from the study. The responses to the 10 open ended items were transcribed verbatim and recorded both in writing and audio forms. For open ended items, the participant responses were categorized into themes based upon the strengths and weaknesses of social media value as an educational tool.

Results

Total 22 students participated in 4 focus group discussions and 2 in-depth interviews. Six themes that emerged were" Learning Environment" indicates as a vital factor in effective teaching and learning "Concept Building and Comprehension" indicates understanding the subject matter of the course and clarifying basic and complex concepts "Developing Academic" indicating a PAL learning experience is a good learning experience to improve academics. "PAL in the regular teaching program "indicates that same year, equal status model of PAL should be part of regular teaching. "Operationalize aspect of PAL" indicating formal training sessions for peer tutors prior to proper PAL sessions improves its

effectiveness in delivery of content. "Accomplishment of learning "indicating that peer learners plan and lead their own learning activities with a greater willingness to acquire knowledge.

These results are summarized as Table 1&2. (Annexure attached at the end of Article)

Discussion

Blended learning (BL) is an e-learning approach that combines the strengths of both online and face-to-face learning, creating meaningful interactions between students, teachers, and resources. Blended Peer-Assisted Learning (ePAL) platform consists basically on the integration of different existing e-Learning tools and platforms in a coordinated way in order to provide the implementation of PAL strategies.[10]. The learning environment is perceived as a vital factor in effective teaching and learning. It is not surprising therefore, that this aspect of the PAL process appeared as a recurring theme in the data and was highlighted by both learners and tutors as a unique and fundamental tenant of this approach. The PAL cohort members perceived all aspects of their learning experience to be more favorable than the Lecture group. The social and the environmental features were the most endorsed benefits of peer involvement in teaching This occurs as PAL helps students come to terms with the demands of their course but depending on the context this can be at the cost of understanding the deeper material, they are studying.[11] In my study almost all participants said there are Blended PAL clear their concept and comprehension and critical thinking. The value PAL is improving quality of learning. Blended PAL generated awareness of course expectations and preparing them to attempt workbook exercises. Peer learners in our study found their sessions helpful in valuing viewpoints of others. Similarly, study reported that one of the qualities of PAL which impressed their students was the opportunity to take on board other learners' views and ways of thinking, and analyzing them with their own perceptions.[12] In my study almost all of the participants were of the opinion that one of the biggest benefits of Blended PAL is developing Academic/ personal skills. All participants liked the blended PAL learning experience is a good learning experience. Pal was helpfulness of sessions in planning learners' own learning activities, providing inspiration to use multiple study resources and develop group- study skills.[13] In my study almost all of the participants were of the opinion that one of the biggest shortcomings of

Blended PAL is that PAL is not regular schedule in their academic time table /Plan. PAL results in higher levels of cognitive reasoning and improved interpersonal skills. Other research conducted in this field also recommended addition of PAL in the regular teaching program phasing it in gradually.[14] The study found that Blended PAL could be situated in curriculum as a formal mode of instruction after pilot testing. Almost all of the participants were of the opinion that one of the challenges of Blended PAL is that PAL is Blended PAL was not structured nor plan at student's level. Published evidence illustrates that arrangement of formal training sessions for peer tutors prior to proper PAL sessions improves its effectiveness in delivery of content, its coverage and quality of instruction. However, there was substantial unease at faculty's end curriculum in the local context.[15]

Conclusion & Recommendations

This study provides preliminary yet important evidence to support intentional PAL in undergraduate medical education. The contribution of this study lies in its layered and dense descriptions of participants' experiences and views on peer learning. It opens for the reader a window into how peers learn from one another in order to achieve their intended outcomes. This study showed that the Lack of productivity or structure of blended PAL was one of the major shortcomings in current study.

Some of the recommendations are as follow:
1. Blended PAL should be part of regular teaching methodology and integrated System based Curriculum.
2. Training of the PAL Leaders should be mandatory on regularly basis after induction in the PAL program
3. PAL Leaders are drawn from the same or a very similar course of study to their first-year students, are matched to a particular group (enabling them to build up a relationship with them) and are supervised from within the course by the teaching team who meets with them regularly to review and plan PAL sessions.
4. post-session reflection forms should be filled by tutors and tutees to comment on positive and negative aspects of the PAL session in general, group learning, their own skills, activities and self-development.

5. Central PAL Co-coordinators aim to observe PAL Leaders in their PAL sessions on two occasions during the course of the academic year, and give them feedback on their techniques and group management. PAL Co-coordinators also operate an open-door policy so that we are available wherever possible to support PAL Leaders.

6. Blended PAL generally is fraught with methodological issues: unless PAL is implemented experimentally, that is with a genuine control group rather than self-selecting 'non-attenders'

7. PAL sessions are timetabled and course teaching staff encouraged contributing 'guided activities' for use by PAL Leaders

CONFLICT OF INTEREST: No conflict of interest is declared by all authors.

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KEY FOR CONTRIBUTION OF AUTHORS:
   A. Conception/Study/Designing/Planning
   B. Active Participation in Active Methodology
   C. Interpretation/ Analysis and Discussion

Table.1 Axial Codes and sub-Categories'

Q. NO.	AXIAL CODES	CATEGORIES
1	• Help me to interact with my fellow • Friendly and joyful experience • We get to learn a lot from each other • Comfortable to ask about my problems • Helps ask questions frequently • Friendly environment • Relaxed environment • Enjoy interacting • Concentrate and learn better • Mutual exchange • Good time management and planning • Where we teach and learn more easily each other • A beneficial opportunity to ask queries related to the assignment • A good, easy atmosphere.	**Personal Experiences regarding Blended PAL**
2	• understanding of the difficult topic • use their knowledge and experience • he understood where we were coming from and what problems we were facing • Clarify our concepts easily. • understanding of the subject • we use to solve the questions • acquire knowledge faster • clear understanding and builds confidence • Educating a person about the problem	**Value of Blended PAL**
3	• better to discuss with Pals then a teacher • problem was easily solved through discussion • Repetition made my learning stress-free and effective. • self-study aspect • independent learning skills • improved my presentation skills • professional setting • improved and built my personal confidence • communicated better • active learning • They teach us how to score better • effective mode of studying	**Beneficiaries of Blended PAL**
4	• improve my grades • helps in my exam's revision • good preparation for the final exam • quite favourable for the preparation of class test and final preporf exams • answering past exam questions • improved academic grades	**Assessment drives learning**
5	• We went to one PAL session and they were really under-prepared and I came away more confused and they didn't understand it either so it didn't help" • "It was right in the middle of a day where we didn't have any other lectures. The problem was that you wouldn't want to come in on your 'lazy' day • It needs structure so you know you're there for a good reason and what	**Process of PAL**

	you're going to achieve and also allow space for extra-curricular talk • It's really good how it's informal at the moment but maybe make it more structured at the beginning so people know what they were going to be covering • Timetabling was OK at first but when it changed and PAL was on a day when there wasn't anything else, no one turned up after that • I must admit I think some of the PAL Leaders were a little bit depressed themselves which wasn't a great thing to pass on" • "Sometimes information given was incorrect and contradicts lecturers" • "That we were being given advice and guidance about the course by people with no more qualifications than ourselves - they could fail their degree" • "I have had some miss guidance on an assignment" • "Students do not have the knowledge of lecturers so we could be miss informed		
6	• they may not properly cover subject matter and can create miss conceptions • We were supposed to learn a whole topic from students who were inexperienced in giving lectures • therefore, it's a bit hard to concentrate • not a real lecture • Often repeating what we know or have recently learnt • PAL leaders often come unprepared • attitude was too relaxed, should be more serious • a specific plan was needed for each session • . If there was not a big assignment it can seem like a waste of time.**"** • not a clear plan - better structure needed". • Not structured enough • The lecture time was limited cannot understand some of the concepts so I need someone to teach me	**Shortcomings with Blended PAL session**	
7	• more input from teachers to the PAL Leaders • information given to PAL Leaders from faculty • More structured approach would help. "Better constructed lessons • PAL twice a week • More PAL sessions • There needs to be more input from teachers to the PAL Leaders • plan their lesson to make them more interesting" • More time with PAL • PAL should be timetabled • Leader should have a clear plan and learning outcomes	**Solutions to shortcomings identified**	

TABLE-2: Categories or Sub themes and final themes derived from the data

Sub Themes	Dominant / Super ordinate Themes
• Helps ask questions frequently • Friendly environment. • Increases my communication skills and confident to ask questions • Comfortable environment • Enjoy interacting • Boost my confidence • Built my personal confidence, • Found to be suitable for learning • More relaxed • Enjoyable experience • Didn't feel sleepy • Not boring at all • Free to ask questions • Senior junior relationship • Acting friendly	**Learning Environment**
• Understanding of the difficult topic • Use their knowledge and experience • Understood what problems we are facing • Clarify our concepts easily. • Understanding of the subject in depth • Solve the questions • Acquire knowledge faster • Clear understanding and builds confidence • Educating a person about problem areas	**Concept Building and Comprehension**
• Improve my grades • Helps in my exam's revision • Good preparation for the final exam • Quite favorable for the preparation of class test and final pre-professional exams • Answering past exam questions • Improved academic grades	**Accomplishment of Learning outcome 1.**
• PAL should be timetabled • PAL should be a part of teaching methodology • PAL should be twice a week as other teaching methodology • There needs to be more input from teachers to the PAL Leaders • More time with PAL	**Incorporating PAL in the regular teaching program**
• Under-prepared lectures • Didn't have any other lectures. • Needs structure lecture • Incorrect and contradicts lecturers" • Misguidance on an assignment" • "students do not have the knowledge of lecturers so we could be misinformed • May not properly cover subject matter and can create misconceptions • Missed the main idea about the topic • Often repeating • Attitude was too relaxed, should be more serious	**Lack of productivity or structure of PAL**

• A specific plan is needed for each session • Not a clear plan • Better structure needed". • Not structured enough • *Dissatisfaction with the operational aspects*	
• Better to discuss with pals then a teacher • Problem is easily solved through discussion • Repetition made my learning stress-free and effective. • Self-study aspect • Independent learning skills • Improved my presentation skills • Professional setting • Improved and built my personal confidence • Communicated better • Active learning • They teach us how to score better • Effective mode of studying	**Developing academic/ personal skills/ Effective teaching strategy**