

FOSTERING DEEP LEARNING APPROACH WITH SMALL GROUP DISCUSSION (SGD)

Qazi Masroor Ali, Syed Hashim Raza, Sadia Masroor

Bahawal Victoria Hospital Bahawalpur Pakistan

ABSTRACT

Objective: To demonstrate the effect of SGD Small Group discussion in fostering deep learning in final Year MBBS students.

Study Design: A Quasi experimental design, single arm study (quantitative method).

Place and Duration of Study: The study was conducted at Quaid-e-Azam Medical College, Bahawalpur, from Dec 2016 to May 2017.

Material and Methods: Final year MBBS students (total students 243) both males and females who were already having background of foundation basic knowledge (theoretical as well as clinical) of the subject from their third year and fourth year learning. The study was conducted in batches of students (20 students in each batch) on clinical rotation in medical ward 2 were included in this study. A pretest was designed question paper was designed comprising of eight MCQs (one best answer) and five short answer questions (SAQs) based on various clinical presentation on upper GI gastrointestinal bleeding. Afterwards, there was a SGD was conducted on the same topic for one hour. After one week of sessions, similar set of post-test of MCQs and SAQs were given. Descriptive statistics of student's scores were calculated such as mean and SD, and comparison of pre and post-test was done.

Results: There were total 243 students who were selected for this study from the final year, QAMC. Before the intervention of SGD, the mean score obtained from pre-test was Mean \pm SD 11.91 \pm 4.22. Score obtained from the post test were Mean \pm SD 18.41 \pm 3.90. Inferential statistics was calculated by applying paired sample t-test and the A *p*-value was <0.001, indicating significant improvement because of intervention. There was generalized increase in knowledge of all participants due to the intervention, presented in terms of post-test scores, establishing the effectiveness of the intervention.

Conclusion: Small group discussion was found one of the best academic strategy.

Keywords: Deep learning, Instructional strategy, Small group discussion.

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INTRODUCTION

Educational research has shown that there is a lot of difference between what we teach and what students learn from this teaching. It looks that what we teach and what students learn are two different things¹. An approach and an attitude to learning, where the learner uses higher-order cognitive skills such as the ability to analyse, synthesize, solve problems, and think meta-cognitively in order to construct long-term understanding. Deep learning actually involves the construction of new concepts which is based on what the students already know². Deep

learning leads to a genuine understanding that promotes long-term retention of the learned material and the ability to retrieve it and then apply it to new problems in unfamiliar concepts³. Deep learning occurs when students immerse themselves in the subject matter, allowing time to critically reflect on their learning⁴. Objective of all the instructional strategies is deep learning so the knowledge may be used in any situation and whenever required. SGD is promoting active learning, interactive learning, self-motivation, enhances relationship of new ideas with the older one, concept to the everyday experience, ideas with each other and at the same time, make use of inquiry and evaluation. All above mentioned features are actually deep learning approach which means that SGD is fostering

Correspondence: Dr Qazi Masroor Ali, Medical Unit-I Bahawal Victoria Hospital Bahawalpur Pakistan

Email: qazi_masroor@hotmail.com

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deep learning^{5,6}. Learning through group discussion, if managed well, can help students to alter their schemata, to elaborate and fine tune their concepts⁷. At its best, small group teaching leads students to reconstruct their conceptual basis⁸. Certain measures will lead to fostering of deep learning such as structuring the course, providing material and lectures, answering student's questions and giving feedback⁹. Inducing a deep approach to learning seems to be quite difficult¹⁰. It is evident from the studies that student to student interaction both formal and spontaneous can enrich learning outcomes¹¹. Fostering of deep learning may be achieved by using approaches like independent learning, projects and group projects, dissertation, problem based learning, active learning and reflection on learning². International studies have shown that students with deep approach to learning tend to achieve better understanding of the material and

fostering deep learning in final Year MBBS students.

MATERIAL AND METHODS

This was a quasi experimental design, single arm study (quantitative method) conducted in Quaid-e-Azam Medical College (QMAC), Bahawalpur. Final year MBBS students (total students 243) who were already having basic knowledge (theoretical as well as clinical) of the subject from their third year and fourth year learning were enrolled using non probability convenience sampling technique. The batches of students (20 students in each batch) on rotation in medical ward 2 were included in this study. The research was approved by QAMC's ethics committee. Students were ensured about the confidentiality of the data. Informed consent was taken from the students. A question paper was designed comprising of eight MCQs (one best

Table: Comparison of Mean increase in Scores of the pretest and post test in the students.

Paired Samples Statistics			
	Mean	Std. Deviation	<i>p</i> -value
Pre-Test	11.91	4.225	0.001
Post-Test	18.41	3.905	

remember it for a longer time and in a better way as compared to the students who are having surface approach. Passing examinations and assessment becomes incidental to their quest for comprehension¹². It also shown in one of the study that there are many attempt to optimize student's approaches towards deep learning and meaningful learning by means of implementing student-centered teaching strategies¹³, however, these efforts have not always been successful^{14,15}. Local data is not available about fostering of deep learning through SGD. Therefore if we prove that fostering of deep learning is achieved by using SGD then we may convince the stakeholders like principal, curriculum designers, regulators and teachers to use this teaching strategy. Students may also be convinced for use of this teaching strategy for their learning. The purpose of this study was to demonstrate the effect of SGD in

answer) and five short answer questions (SAQs) based on various clinical presentation of the selected topic (upper GI bleeding). These questions (MCQs-1 best, SAQs) were best way of assessment of deep learning in students. Upper GI bleeding is one of the very common presentation in the emergency department and most of the times it is either because of esophageal varices rupture or bleeding peptic ulcer. The same set of MCQs and SAQs paper was administered immediately before and after the small group discussion (SGD). These questions were based on learning outcome of the topic/subject.

Every batch on rotation was given a question paper of MCQs and SAQs about the selected topic as mentioned above. Afterwards, there was a SGD on the same topic for one hour. After one week of sessions, similar set of MCQs and SAQs were given. Descriptive statistics of

student's scores were calculated such as mean and SD, and comparison of pre and post-test was done by applying paired sample t-test. *p*-value less than 0.05 was found statistically significant

RESULTS

There were total 243 students who were selected for this study from the final year, QAMC. Before the intervention of SGD, the mean score obtained from pre-test was Mean \pm SD 11.91 \pm 4.22). Score obtained from the post test were Mean \pm SD 18.41 \pm 3.90. The mean difference in the scores from pre-test to post- test is Mean \pm SD 6.5 \pm 0.32. Inferential statistics was calculated by applying paired sample t-test and the *p*-value was <0.001, indicating significant improvement because of inter-vention (table). Normal distribution curves were generated to establish the normality of data. There was normal distribution of the knowledge in terms of pre-test scores before intervention as mentioned. While there is generalized increase in knowledge of all participants due to the intervention, presented in terms of post-test scores, as presented, establishing the effectiveness of intervention.

DISCUSSION

It is often proposed that lectures may not be the paramount way to impart knowledge to students¹⁶. Though, a majority of the medical and dental colleges in Pakistan depend upon lecturing to a large group of students to convey knowledge¹⁷, but small group teaching is adopted in all the Medical schools of USA and Europe¹⁸. Medical educationists have found that SGD is better strategy for deep learning because of many reasons like, it increases understanding of the subject, it increases ability to assemble and present the information, by asking the questions, it provides opportunity for critical thinking and the students become more articulate and they are able to talk better in public because of increase in confidence. It is said that "smaller classes are a key ingredient of student success¹⁹. The present study demon-strated that SGD is effective in fostering deep learning. Statistically significant differences were observed when the

marks scored by the same group of students after the SGD were compared with the marks scored by the same students before the intervention of SGD in the same topic. The results from this study provide evidence that small group teaching is more effective and that it facilitates a better recollection of the knowledge, which is taught. As far as limitations of this study is concerned, the students in this study had a single encounter and as this is a study which is non comparative so cannot be generalized. Not many similar studies are available for comparison among the medical colleges in Pakistan. *Curtis et al* have also found that the students who were taught in small groups scored higher marks as compared to the scores in the subjects which were taught by other methods²⁰. *Hofer et al* also concluded that small group teaching facilitated high quality results²¹. However, there are some studies which have not positively favoured small groups^{22,23}. *White et al* found that small group teaching was only as effective as the large group lectures approach and not superior to it²⁴.

In most of the medical colleges (both public and private), teacher taught ratio is not proper because it is the most expensive part of medical education for the institution. So, education strategies like SGDs cannot be practiced in developing countries like Pakistan²⁵.

CONCLUSION

Small group discussion was found one of the best academic strategy. Because this teaching strategy offers critical thinking, self directed learning, team work ability, self motivation and peer-peer interaction.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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