

**Original article**

**“Learner Perceptions Regarding the Lecture and the Small Group Discussion as Teaching/Learning Methods in Physiology”**

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**Abstract:**

**Introduction:** Physiology has traditionally been taught through lectures, but other methods are now being tried. One of these, the small group discussion (SGD), is considered to be more tuned to learners' needs compared to the lecture. **Aim:** This study was undertaken to determine learner perceptions on the lecture and the SGD as teaching/learning methods in physiology. **Methods:** Ninety-seven first MBBS students were taught Physiology in both lecture and SGD formats for a whole year. Feedback was then obtained from the students using a validated and structured questionnaire. Data was entered in Excel sheet and analyzed using SPSS software. **Results and Discussion:** Learners felt that both the lecture and the SGD helped them understand basic principles well (93.4 and 93.3%), contributed effectively to the learning process (84.6 and 90%) and fostered critical thinking skills (64.9 and 68.9%). For delivery of basic concepts, learners preferred the lecture for its systematic presentation. SGDs were perceived to promote active participation of learners (85.6%), encourage facilitator-learner interaction (87.8), and retain student interest better (62.2%). Overall, learning was better-stimulated by the SGD (73.4%) rather than the lecture (35.2%). **Conclusion:** In the teaching/learning of physiology, appropriate use of both the lecture and the SGD will serve to nurture and sustain learner interest effectively.

Bangladesh Journal of Medical Science Vol. 18 No. 02 April'19. Page : 274-278  
DOI: <https://doi.org/10.3329/bjms.v18i2.40697>

**Introduction:**

Heraclitus, the Greek philosopher, said ‘Change is the only constant in life’. All aspects of life are constantly changing and the field of medical education is no exception. Teaching/learning methods have evolved over the years and though the lecture has traditionally been and continues to be the predominant form of dissemination of knowledge in physiology, other different and innovative methods are slowly but surely entering the scene.

The conventional didactic lecture is a time-tested format, where a large group is addressed by a single teacher. This method is economical with resources and time and a large amount of information can be delivered to the target audience. However, the learner remains passive<sup>1</sup> throughout the session and therefore, the lecture has quite a few drawbacks with regard to

retaining learner interest and concentration.<sup>2</sup>

The small group discussion is considered more interactive than the lecture.<sup>3</sup> It provides a comfort level where the student feels free to approach the teacher for clarifications<sup>3</sup> and thus seems better geared towards student learning. It has also been said to enhance self directed learning.<sup>4,5</sup>

Current thinking suggests that the small group method is perhaps more tuned to learners' needs rather than the lecture.<sup>4</sup> This study was undertaken with the aim of determining how the learner perceives the lecture as well as the small group discussion as teaching/learning methods in physiology.

**Methods:**

This study was conducted in the Dept. of Physiology at Tagore Medical College, Chennai after obtaining prior approval from the Institutional Review Board.

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Ninety seven first MBBS students participated in the study. The students were given classes in both lecture format and small group discussion (SGD) format over a period of one year. Six faculty members in the department trained in medical education technologies handled both the lectures and the SGDs.

The traditional lecture session was carried out in a lecture hall with plentiful light and audiovisual equipment including a black-board, LCD projector, and teaching slides. In the beginning, the objectives of the session were explained, and during the session we tried to increase the students’ attention by asking questions, giving illustrations, and making conclusions and outlines.

For the group discussion sessions, students were divided into 12 groups (11 groups of 8 and one group of 9 learners; two groups for each facilitator). Every week, each batch spent two hours in SGD with the respective facilitators. In the SGDs, various scenarios in the assigned subjects were covered. All of the needed material was given to the students in advance. Students were expected to come prepared to the SGD.

At the end of the year, feedback was obtained from the students using a validated and structured questionnaire. The questionnaire carried questions looking into learner perceptions on both the lecture and the small group discussions – their conduct, reach, usefulness, pluses and minuses - which students graded on a five point Likert scale (including: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree).

Data was entered in Excel sheet and analysed using SPSS software.

**Ethical Clearance:** This study was conducted in the Dept. of Physiology at Tagore Medical College after obtaining prior approval from the Institutional Review Board.

**Results:**

Our results reveal that learners find lectures useful in that they give lots of information from multiple sources and help in understanding basic principles well (Figure 1). The quality of a lecture depends very much on the lecturer(93.4 %) and an enthusiastic teacher contributes to the learning process(86.8%). Learners feel that interaction with the teacher(46%) and clarification of muddy points(36%) are lacking in lectures. Learners also find it difficult to be focused throughout the session (31.9%). However, interactive techniques and A-V aids are perceived to increase interest in lectures and help in retaining learners’ attention.

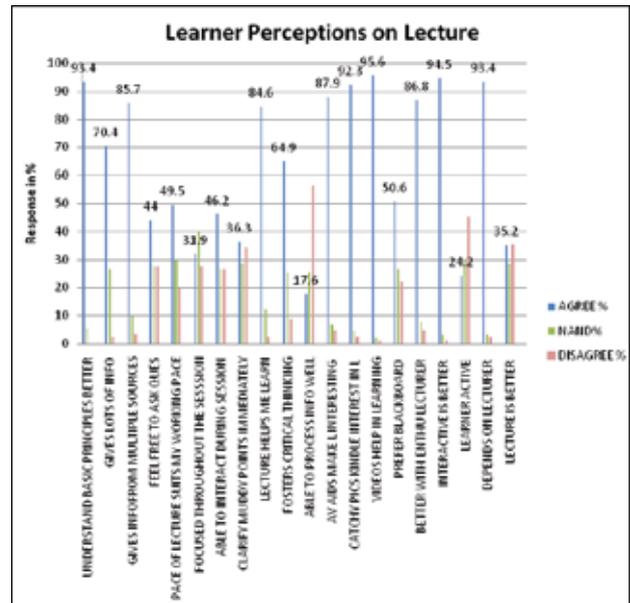


Figure 1: Learner perceptions regarding the lecture as a teaching/learning method

Regarding the small group discussion (Figure 2), learners felt that it helps to delve deeper into a topic compared to the lecture. The pace of SGD is more suited to the pace of learners. SGDs also promote interaction and doubt-clarifying with the facilitator and peers. They allow engagement with the peer group facilitating learning, communication and self-assessment. The main drawback here appears to be that not everybody is given a chance to contribute to the discussion.

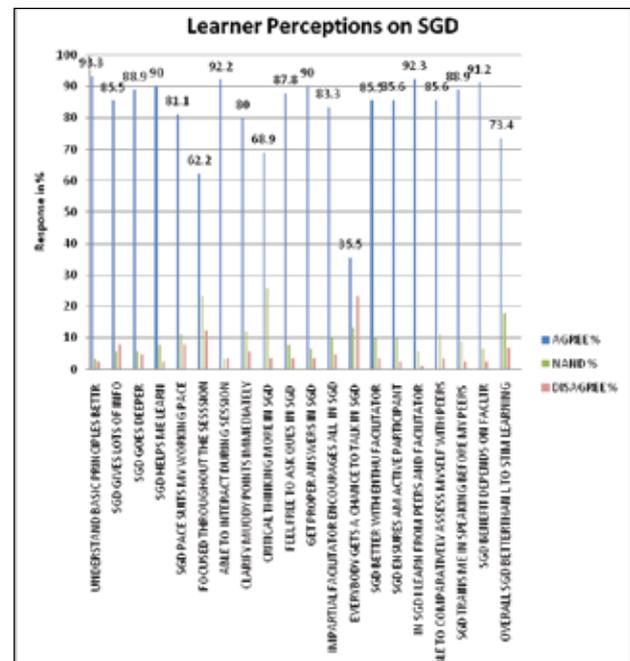


Figure 2: Learner perceptions regarding the small group method as a teaching/learning method

On comparing the two teaching/learning methods (Figure 3), it was observed that learners felt both methods helped them understand basic principles equally well (93.4 and 93.3%), but they also felt that the SGD gave more information (85.5%) compared to the lecture (70.4%) and them go deeper into a topic (88.9%). Both methods were perceived to contribute effectively to the learning process (84.6 and 90%) and fostering of critical thinking skills (64.9 and 68.9%). However, small group discussions are perceived to proceed at a more student-friendly pace (81.1%), promote interaction and doubt-clarifying with the facilitator (87.8), encourage active participation of learners (85.6%) and retain student interest better (62.2%). The quality of both kinds of sessions depends much on the facilitator and is greatly improved by an enthusiastic facilitator (86.8% & 85.5%). SGD additionally enhances communication skills (88.9%) and enables self-assessment (85.6%). The method that overall stimulates learning better is the SGD (73.4%) rather than the Lecture (35.2%).

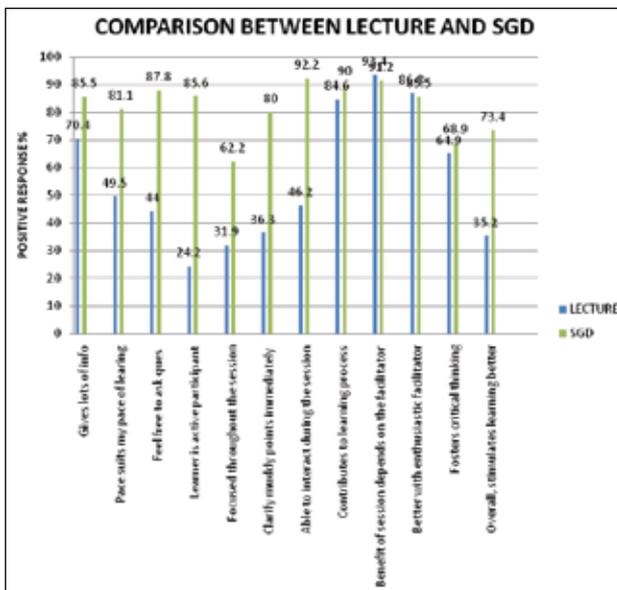


Figure 3: Comparison between the lecture and small group discussion as teaching/learning methods

### Discussion:

The traditional lecture format is a standard vehicle for delivering knowledge in the medical curriculum.<sup>6</sup> It remains an irreplaceable way of large group teaching, especially for explaining important concepts and transferring information.<sup>7</sup> It is also useful to stimulate interest in learners and direct them to further learning.<sup>7</sup> Furthermore, learners remain passive the whole time and this format does

not encourage critical thinking skills.<sup>7</sup> Therefore, it is not an effective method of teaching skills or changing attitudes<sup>6</sup> and has serious drawbacks when it comes to retaining student attention.

The SGD, by virtue of its nature, has four key strengths: flexibility, interaction, reflexivity and engagement.<sup>8</sup> Because of these, the SGD is better able to meet individual needs of students.<sup>8</sup> This differentiation (individualized approach) helps learners to develop not only a deeper understanding of the subject but also critical thinking and analytical skills.<sup>8</sup> These skills are invaluable in a physician and can contribute to the creation of competent doctors. SGDs also help the teacher learn from the student and improve his/her teaching skills<sup>8</sup>. It is also an excellent means of formative assessment, which serves as 'assessment for learning' and acts as another rung in the learning ladder.<sup>8</sup>

The thrust in medical education nowadays is for the learner to move beyond mere knowledge and develop higher order thinking skills, which will help to bring about an attitudinal change towards the practice of medicine.<sup>1</sup> To this end, the attitude of learners has to be moulded in such a way as to develop and hone their critical thinking skills. This cannot be taught in a lecture<sup>6</sup> and this is where SGDs prove useful.

Our study found that with regard to understanding basic principles, both the lecture and the SGD were able to deliver (93.4 and 93.3 % respectively). Learners also felt that both contributed well to the learning process (84.6% for lecture and 90% for SGD). However, the method that overall stimulated learning better was the SGD (73.4%) rather than the lecture (35.2%). Our findings are in keeping with those of Ghotbi and Khodami (2013), who found that students of physiotherapy in Tehran University of Medical Sciences reported a significant increase in interest in learning with small groups compared to the lecture.<sup>9</sup>

SGD is a process of active learning compared to the lecture. With an able facilitator, it enables peer-peer interaction and fosters active discussion among the participants. In our study 85.6% of learners felt they were active participants in SGD whereas only 24.2% felt they were active participants in a lecture; 88.9% felt that SGDs helped train them in speaking in front of their peers. Our finding is similar to that of Majhi P and Sulakhe R (2014), where 89.6% of learners found SGDs an active way of learning and 88% felt that their interaction skills were improved by SGD.<sup>10</sup> Our experience has shown that in the teaching/learning of physiology, both the lecture and the

SGD have a place. When it comes to delivering basic concepts and information, the lecture is most suitable. Learners like the systematic presentation offered in lectures, but prefer it in more interesting and interactive formats.<sup>11,2</sup> The SGD helps them to particularly delve deeper into a topic and fosters their critical thinking skills.<sup>4</sup> It also encourages doubt-clarifying, interaction with peers<sup>4</sup> and self-assessment and serves to stimulate learning.<sup>9</sup>

The problems we faced while doing this study were mainly with the organizing and conduct of the small group discussions. Finding suitable classrooms for SGD, incorporating SGDs into the regular teaching schedule, planning and guiding all faculty members with the content for the sessions, and motivating and enlisting their cooperation all proved to be uphill tasks for us.

**Conclusion:**

Carefully planned and properly executed use of both teaching/learning methods – the lecture and the small group discussion - will go a long way in kindling, nurturing and sustaining learner interest in

physiology and contribute to laying the foundation for the creation of competent medical personnel in the days to come.

**Acknowledgement:**

We thank the faculty members of the Dept. of Physiology, Tagore Medical College and Hospital for their cooperation in conducting this study. We also warmly thank each and every student of the I MBBS batch for their enthusiastic and whole-hearted participation in this study.

**Declaration of Interest:**

The authors report no declarations of interest.

**Authors' Contribution:**

Data gathering and idea owner of this study: Paul P, Subramanyam L, Raghunathan G

Study design: Paul P, Subramanyam L

Data gathering: Paul P, Subramanyam L, Raghunathan G

Writing and submitting manuscript: Paul P, Arumugam B

Editing and approval of final draft: Paul P, Subramanyam L, Arumugam B



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