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Review Article

Group Discussion in Dental Education has Great Potential-An Overview

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Abstract

Students are very passive while attending a lecture. Because of the diversity in learning preferences lecture is not liked by all the students. Some students may like active participation in the learning process and group discussion provides an avenue for that. A fruitful academic environment is obtained in small group teaching, which optimises learning, particularly in the professional colleges of health sciences. In group discussions students get an opportunity to work collaboratively and to build a team. Teacher has an important role of the facilitator in the group. This article is aimed at students of dental colleges and teachers who lead group discussions.

Keywords: Small Group Learning; Team Building Skills; Facilitation; Students of Dental Profession; Problem-Based Learning (PBL); Case-Based Learning (CBL); Dental Education; Buzz Group; Fish Bowl

Introduction

Conventionally dental colleges in India adopted lecture as the popular teaching method. Though it is an efficient and economical way to teach large groups of students, student involvement in the learning process is highly restricted and they tend to be very passive. Presently the emphasis is on student centred learning rather than the teacher centred learning practices. This does not mean that the didactic lecture is totally eliminated from dental education system.

Once the students are provided with theoretical and conceptual knowledge, they are exposed to Group Discussion (GD) to give an opportunity to generate newer ideas. GD gives a chance to improve communication skills especially listening skills. The participant students will develop tolerance to different ideas and to improve interpersonal and social skills. The silent person will be encouraged to speak up and the loud and aggressive student will learn how to moderate and change his ways.

In a classroom discussion, teacher initiates the process and encourages the students to participate in the discussion actively. Newer ideas are generated by the participating students. Students get a chance to build on others' ideas and give suggestions. The collective knowledge generated can be used for the benefit of the group. In depth discussions will also happen in the group and students will learn how to collaborate with other members. The teacher can observe the level of understanding of the participating students and hence group discussion serves the purpose of formative assessment.

Group discussions held in the classroom or in the clinic increase student engagement, improves retention of knowledge, enhances communication skills and helps the student to gain confidence to work in a team. Recent times have witnessed an increasing popularity for group discussions in the learning process of dental health science. However, three factors viz. face-to-face contact, active participation and purposeful activity can be considered as the signature characteristics of small-group teaching which would determine the effectiveness in learning. This article briefly discusses relevance of small group teaching and the method of conducting a group discussion.

How to plan for the group discussion

When the teacher plans for the group discussion, he should have a clear idea about the target audience. The teacher should know the academic needs of the students and should ascertain the background knowledge. Also, the teacher should make sure the availability of resources required for the students. If a complete denture final impression is the target subject for a session, related books, albums containing pictures, videos, handout to be distributed to the students and adequate number of patients for the students to learn the practical skills.

Outcomes

Before starting the group discussion, the learning outcomes should be designed. Learning outcomes or learning objectives are statements on the knowledge, skills and abilities individual students should possess and can demonstrate on completion of the learning experience or the sequence of learning experiences. The outcome statements should be formulated prior to the session and should be brought to the notice of the students at the beginning of the discussion. Students are allowed or in fact encouraged to include more relevant outcomes.

Activities

Once the target group and the outcomes are clearly identified, the activities that are to be undertaken in the group discussion should also be planned. The duration, the breaks, refreshments and the seating should be decided prior to the commencement of the session. To engage each and every student in the discussion, they should be addressed by name. The teacher should tell the participants in advance about the expected behaviour. Usually, the teacher introduces the topic by providing a handout, by making a presentation or by showing a video. An interesting presentation will attract the students and they will involve in the ensuing discussions. Teacher should know how to control the overpowering participant and encourage the silent on to speak up. In a clinical situation, a patient will be involved and for that patient's consent has to be obtained.

Summarise to conclude

Towards the conclusion of the group discussion, the teacher will ascertain whether the participants have understood and the desired outcomes could be achieved by asking questions to each and every participant. The points discussed should be summarised precisely and some learning tasks will be given as a follow up. Time management is important and the discussion should end at the predetermined time [1].

Types of small group teaching

A number of small group teaching methods have been developed to suit medical and dental educational process. Recently many online small group activities were also introduced to comply with social distancing necessitated by the pandemic.

Problem Based Learning (PBL)

PBL group consists of 6 to 10 students and a teacher who serves as a facilitator. A clinical problem is selected for discussion and self study to find a solution. An initial meeting of the students is held to discuss the issues requiring further self-study. The participants use all possible resources to find a solution. Later the group reconvenes the meeting to present the findings, the participants collected and to discuss and synthesise their learning. In the second meeting the facilitator intervenes very limitedly to provide directions. A typical PBL session is conducted as follows

- A case is presented to the group in printed or audio visual format
- Participants will be directed to define the problem and formulate key questions related to the problem
- The participants will then divide the problem into learning issues/tasks and they will collect information from available resources
- Participants will then do a self study (Self-directed learning)
- Participants will reassemble in the group to share the learning
- Group will generate hypotheses and
- Integrate the knowledge
- Finally the group will evaluate the process and the level of learning [2].

Team based learning (TBL)

In TBL one teacher can facilitate a greater number of groups for example 10 to 12 groups consisting of 6 students in each group. It makes use of 'flipped classroom' technique, and a structured in-class learning format is adhered to. TBL follows a number of steps which are logically sequenced and which are given below. In PBL sessions, students are encouraged to take the lead and explore the topic in width and depth. Faculty need only clarify misconceptions if the student/group has confusions.

Steps of TBL

(Adapted from John Dent, Practical guide for medical teachers, Chapter 19)

- **Advance assignment for TBL:** Students shall receive a list of learning activities, accompanied by a set of learning goals. Learning activities include reading passages, seeing videos, attending labs, tutorials, lectures, etc
- **Idividual readiness assurance test:** Each student completes a set (10-20) of multiple-choice questions that focus on the concepts they need to master in order to be able to solve the problems posed to the team.
- **Team readiness assurance test:** The same set of questions that each student has answered as an individual task will now be administered to the team to find an answer through a consensus-building discussion.
- **Instructor's clarification:** Students can get clarification from the instructor on the concepts they have been discussing during the previous step. At the end of the clarification session, students should feel confident that they can solve more complex problems for the next TBL step.
- **Team application:** Students are presented with a scenario which they may face in the future of their career. They are asked to make interpretations, analyses and syntheses of the given information. A significant problem is usually given which is common to all the teams. They have to discuss and arrive at a consensus and prepare a display board. All teams will be asked to show it simultaneously.
- **Appeal:** The instructor selects the best solution. All the teams will be given a chance to modify the solution they have arrived at. The teams can ask for an alternate solution from the teacher.
- **Peer evaluation:** Team members will be asked to evaluate each member of his team as an outside the class task [3,4].

Case based learning (CBL)

CBL is characterised by small group learning (6-10 students per group), using an inquiry-based learning format, with facilitation by one teacher. Compared to PBL, CBL is less time consuming, and draws the focus of the students to key points of the clinical case. A structured and critical approach to clinical problem-solving is encouraged in CBL, where the facilitator is a content expert who directs and redirects the students.

Number of participants in a group

In different situations and in different countries, the number of participants varies between 4 to 20. When the number is low, more of critical thinking and decision making happens. When the

number increases, the knowledge resources also increase but the opportunities of interaction may get considerably reduced. Small groups function well with PBL probably because of the well defined tasks and structure. In small groups, discussion skills develop effectively along with the potential of thinking. Within practical limits, in the dental colleges where admission strength of BDS students is hundred, it is possible to limit the number between 10 to 15 especially in a clinical situation [5].

Questions asked in a group discussion

Questions are an essential component of the group discussion which can arouse interest of the participants on the subject discussed. A properly framed question asked at a critical juncture can direct or redirect the flow of conversation. Questions should be specific and narrow so that a response with factual and correct answer will be received. Broad questions can easily confuse the students. Brown and Atkins have suggested that "if we want to ask questions that get students thinking then we have to think about the questions we are going to ask". This serves as a good guideline for the teachers who make use of GD. Asking questions should have a strategic approach of Pose, Pause and Pounce. First the question should be addressed to the group, then wait for some time so that the group can think and the facilitator should select someone in the group by name to answer the question. This is otherwise termed as the 3Ps of questioning [6,7].

Listening and responding

Listening and responding are two other essential components of successful discussion. Both the facilitator and the participants should listen to each other. Facilitator should develop exquisite listening capability otherwise he cannot respond appropriately. The teacher's response should encourage the discussion. Students are often nervous and reluctant to speak out in the group. A positive encouraging response will make the student feel safe and shielded against criticism. The facilitator/teacher should be extremely diplomatic in tackling the situation when the student telling a wrong answer. A blunt confrontation with the student should be avoided and at the same time the flaws in the answer should be pointed out giving a chance to modify the answer. Only with experience, the teacher can acquire this quality of responding in a group discussion [8].

Explaining

Many definitions may not give a clear understanding to the students. The facilitator can ask the participants or he himself can give a detailed description containing the relevance, meaning and purpose of the definition. Explaining is a skill which can be developed and mastered with practice. Explanation should be simple and clear and should avoid vagueness and confusion. Fluency can add to the quality of explanation. Appropriate examples should be cited while explaining a fact. In a discussion on dental implants when the term '*osseointegration'* is used, students may not understand it fully. The explanation can be like this - '*Osseointegration is a phenomenon that happens in the human body when a dental implant is surgically placed in the jaw bone. It is a direct structural and functional connection between ordered, living bone and the surface of a load-carrying implant and it is critical for implant stability. Masticatory load can be applied on the restoration placed over the implant when adequate osseointegration and stability is obtained.'* For explanation, appropriate words are used and they make a sentence with clearly linked words [9].

Other forms of group discussion

In the course of the discussion the group can be given different experiences by employing strategic changes and some of them are described below. These changes should stimulate the students and should provide the participants' knowledge and understanding.

Buzz groups

During the discussion students will be asked to turn to their neighbour to discuss for 3 to 5 minutes the difficulties they face in understanding and to get a clarification on that. Even questions can be framed to be asked to the teacher with the help of the neighbour. (Figure 1) In Buzz groups students will express difficulties which they would not have revealed in front of the whole class. For the first three minutes, one person will be speaking or asking questions and then for the next three minutes the direction of asking can be reversed. While the entire class is doing this, there will be a humming sound and that is why the term 'Buzz' [10].

Fishbowl

The participants will be divided into two groups and one group will be seated in an inner circle and the other group will stand in an outer circle observing the participants of the inner circle. The inner

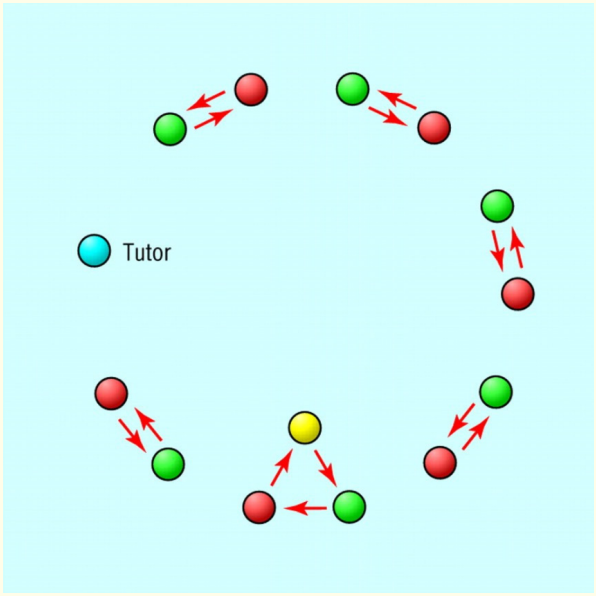

Figure 1: Buzz group discussion.

group will discuss a given topic and the outer group listens, looking for patterns of arguments or group behaviour based on a given checklist to give a feed back to the inner group on its functioning. The roles may then be reversed (Figure 2).

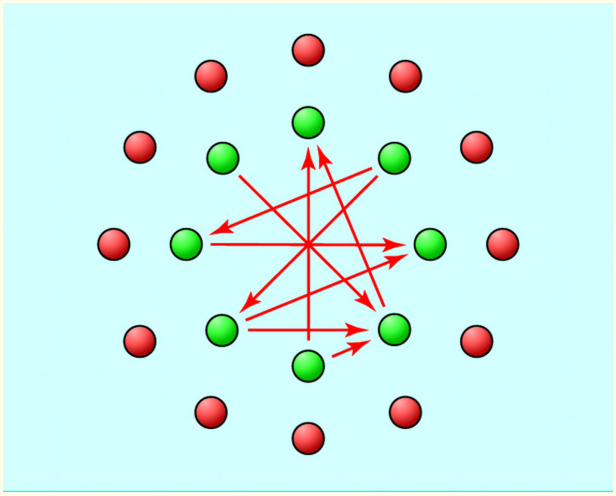

Figure 2: Fish bowl.

Horseshoe groups

This method provides freedom to alternate between lecture and discussion formats. Groups are arranged around tables, with each group in a horseshoe formation with the open end facing the facilitator. Switching of formats is convenient in small classes where the furniture can be rearranged easily (Figure 3).

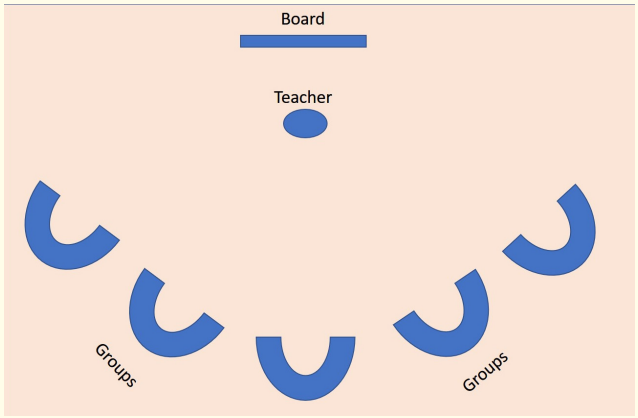

Figure 3: Horse shoe group.

Demonstrations

Live demonstration has been used in skill development of students in dentistry. This can improve students' confidence, enhance communication skills and can provide better understanding of the taught subject. Demonstrations are usually preceded by a lecture to provide the theoretical background of the procedure taught. The group number should be limited so that everyone can see the demonstration done by the teacher. If the number of students are increased, the visibility gets reduced. Demonstration sessions cannot be repeated many times due to time constraints, and the burden of manpower needed. Video demonstrations can solve the problem. Mastery of the teacher has a greater role in improving the quality of demonstration and videos serve as a good addendum. Students learn the techniques equally well both in live demonstrations and in video demonstrations [11].

Conclusions

Teaching and learning that happens in small groups can be very rewarding, for both the learners and the facilitators. Through the interactions that happen in group discussions, thinking improves

along with developing positive attitudes and values. The core skills developed in GD are questioning, listening, responding and explaining. Both facilitator and students can attend GD after a thorough preparation of the topic discussed; otherwise, GD will not be effective. Students learn interpersonal skills through direct experience which they may not get through other forms of teaching. A collection of individuals cannot be considered as a group unless they interact.

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Figure credits

Fig 1, 2. David Jaques, ABC of learning and teaching in medicine, Teaching small groups, BMJ Vol. 326 (2003) bmj.com