Review Article

Organizing and Conducting Small Group Interactive Learning Sessions

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ABSTRACT

Interactive teaching/learning is becoming more common in medical schools. Basic science teaching is often considered dry, uninteresting, and considered by students to be not 'directly' relevant to their future career as practicing doctors and healers. Interactive, small group learning requires basic knowledge of facilitation skills and group dynamics. Students work together in small groups to solve problems and study in a spirit of cooperation and teamwork. Students assume more responsibility for their own learning and teachers must relinquish some of the traditional authority and act more as facilitators. Selection of the case scenarios or problems is important as it sets the boundaries and defines the learning objectives. A detailed lesson plan and timeline for activities is important. Creating a safe and supportive environment where students can make mistakes and learn is important. Group dynamics is important and the flip chart can be an effective learning aid. Small group sessions can be conducted in resource limited settings in developing countries. Students must self-regulate themselves during entire process of learning. Conflicts and disagreements need to be acknowledged and resolved. Both formative and summative evaluation is recommended for small group learning and is usually done both by the facilitator and by peers.

Keywords: Basic sciences, Group dynamics, Facilitation, Interactive learning, Small group learning.

INTRODUCTION

Interactive teaching (learning) in small groups is becoming increasingly common in medical schools. Interactive small group learning is in consonance with modern learning theories especially the principles of adult learning. Lectures continue to be the predominant method of teaching in South Asian medical schools. But interactive learning methods are being more commonly used now.

Bedside teaching

Bedside teaching is a powerful tool in clinical teaching and has many of the elements which make teaching/learning interesting for medical students. There is a patient, a small group, immediate/later applicability of learning, a clinical problem to be solved and immense possibilities for interaction between the patient, the teacher and the students.

Basic Science teaching

In contrast, basic science teaching is often considered dry, uninteresting and considered by students to be not 'directly' relevant to their future career as practicing doctors and healers. In this article, the authors plan to share their experiences of conducting activity-based small group teaching/learning in pharmacology, therapeutics, integrated organ systems and the medical humanities. The authors have substantial experience with these methods for nearly fifteen years at medical colleges in Nepal and at Colleges in Aruba and Saint

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Table 1: Suggestions for small group learning (SGL).
Learn basic facilitation skills
Learn and try to understand small group dynamics
Learn to involve the students in the learning process
Be prepared to give up some of the traditional authority associated with a teacher
Allow students to take greater ownership of the learning process
Spend time on selecting the clinical scenarios or cases
Prepare a detailed lesson plan before the session
Draw up a timeline of activities and stick to it as far as possible
Use role-plays where possible
Create a safe and supportive environment for the students
Pay attention to group dynamics
Use the flip chart and other aids as a learning aid
The assessment system should promote cooperative behavior and group work
Remember SGL does not require sophisticated technology and costly logistics

Lucia in the Caribbean, in Pakistan, Malaysia, and at the United Arab Emirates. The basic principles enumerated can be used for conducting sessions in other basic science and clinical subjects. Table 1 provides suggestions for small group learning.

Start teaching in small groups

The first suggestion which can be offered to faculty members interested in small group sessions is to 'start doing it'. The authors have found the publication 'Teacher's guide to good prescribing' to be very useful for facilitating small group sessions.[1] The book focuses on problem-based pharmacotherapy teaching, but the principles are applicable to other settings. The best way to learn is by doing and practice. But before actually starting a certain level of competence in facilitation skills is required. Small group learning (SGL) exploits the natural curiosity and inclination towards problem solving present among human beings. Students work in small groups and learn in a spirit of cooperation and teamwork. If there are senior faculty who have conducted small group sessions, then the task may be easier. Otherwise, faculty can go for an initial training in facilitation skills at various institutions. The FAIMER fellowship in health professions education provides a good grounding in facilitation skills which are learned and applied in a practical setting.[2] Fellows join an international community of practice with support from faculty mentors and alumni. There are also advanced courses in health professions education offered in various countries.

Differences between the role of a teacher in traditional and problem-based learning

The main difference between a 'lecturer' in a traditional curriculum and a facilitator in SGL is the change in the role of the teacher. A lecturer is an expert in his/her subject, an authority in class and a subject expert. Students are regarded as 'empty vessels' to be filled with knowledge. The teacher dominates the classroom and students are mostly passive recipients of knowledge. In active SGL sessions, the teacher acts as a facilitator and helps students to learn. The teacher gives up some of his/her traditional authority and becomes more of a friend and mentor to the students. The teacher stops lecturing and starts asking questions. Students assume more responsibility for their own learning and the teacher must exert indirect control. Many teachers find giving up the traditional authority associated with a teacher to be very difficult. In a recent article ten basic guidelines for successful implementation of small group learning have been provided.[3] Among these are having a clear understanding of institutional objectives and priorities, develop and implement process guidelines for the sessions, show compassion and treat each student fairly and equally, refrain from acting as a knowledge provider, support group dynamics, do not express an overt opinion on the correctness or quality of any student's contributions, promote and develop self-directed learning and plan ahead.

Using clinical problems or cases

A major complaint among students is that they fail to understand the clinical relevance of much of the course material and teaching during the basic science years. An ideal way to show the clinical relevance of a subject or organ system is to give the group/s a clinical problem (case scenario) which they solve using their current knowledge and accessible resources. We have used this successfully in pharmacology and in different organ systems like nervous system, cardiovascular system etc. for many years now. Selection of a 'problem', 'scenario' or 'case' is vital as it sets the boundaries within which the students learn and defines the learning objectives.

Lesson plan

A well thought and written lesson plan is vital for success in SGL sessions. The first impression is that in an SGL session the teacher/facilitator has a much more laid back and relaxed role; after all most of the work is being done by the students. However, appearances can be deceptive. The facilitator is busy chalking out

the learning objectives, deciding on learning modalities which can fulfill these objectives, designing the case scenarios and problems and facilitating the group dynamics. With several different learning modalities, audio-visual aids, interaction, student presentations and others 'time management' becomes important. Mark out the approximate time frame for various activities but be flexible when required. Student groups may often need more time than that allotted to them. Some groups may have more difficulty in working together compared to others. Without a well written lesson plan as a road map there is a high chance that the facilitators will get lost during the session.

Team-based learning

Today's medical students are highly interconnected, enjoy working in teams and have a positive attitude toward social media.[4] These students want frequent, directed feedback and structured learning activities with a clear sense of achievement. A modification termed team-based learning (TBL) where students work together in various small groups under one or two facilitators may be more suitable in South Asian medical schools with their large student numbers. A recent article mentions that TBL may be a suitable technique to introduce medical humanities sessions in Indian medical schools.[5]

Role-plays

Role-plays have several benefits especially when learning communication skills and putting oneself in the position of different characters. Students love to act out various roles and many ethical issues and other issues of practice are best dealt with using role-plays. Decision making skills, communication skills, counselling skills and problem-solving skills can be addressed using role-plays. We have used role-plays to explore social issues in use of medicines, teaching students to communicate drug and non-drug information to patients and during the medical humanities module. Our students loved the role-plays. Student feedback about the use of role-plays as a tool to counsel patients about their medicines was evaluated.[6] The concept of role-play was appreciated by students, and they considered it an effective tool to learn medication communication skills. Role-plays were used to explore five subjects, namely anamnesis, shared decision making, prevention, breaking bad news and difficult interactions during a course.[7] The course was highly appreciated by the students and could be implemented without additional costs.

Creating a 'safe' environment

Create a 'safe' and supportive environment; one in which the students can take risks and fail without inviting rebukes and harsh criticism. Students are learning and we all learn through our mistakes. It is better that the students make the mistakes during the sessions rather than during practice. SGL emphasizes the role of students in sharing and discussing ideas and arriving at possible solutions in a safe learning environment without being dominated by the facilitator/tutor.[8] Have a positive view of students as bright, inquisitive minds rather than a negative one of troublemakers, problem cases and persons not interested in studies. The attitude can make a world of difference!

Group dynamics

Paying attention to the group dynamics is important. Select or ask the group to select a group leader, a recorder, a presenter, and a timekeeper and rotate these roles from session to session. Certain groups need more help to get going as mentioned previously. The best method would be to stay in the background and provide help to the group, if needed. We generally keep the groups constant each semester and find that after a period most groups start working as a cohesive unit. Encourage the quieter members of the group to take a more active part in the group deliberations and presentations. A recent article mentions five elements of cooperative learning and states that groups are successful if facilitators organize and structure the groups to include the elements of positive interdependence, promotive interactions, group and personal accountability, interpersonal skills and group processing.[9]

Arranging the room

The arrangement of the room where the session takes place is important. We find that working tables with chairs (armless) grouped around the work area are effective in promoting group work and are comfortable. There should be enough space for the participants to move around and discuss. However, students are adaptable and often work well in sessions conducted in a traditional classroom setting of desks and benches.

The flip chart and other devices

The flip chart is a very effective tool for group presentations and deliberations. Its flexibility and ease of use makes it very versatile. The groups can note down the main points of their group work and present their work to the larger group. So, invest in flip charts and flip boards for the room. Today many medical students have laptops, tablets, or smart phones. Many of these have software to prepare slides and other presentations or project graphs and word documents. An interactive system to which multiple laptops or devices can be connected makes it easy for students

and faculty to project and present from their devices. The smart board offers the ability to capture the major points and concepts of the group work as drawn on the board. These are available for later reference when required.

Getting students ready for SGL

SGL requires more active participation from students and they must assume greater responsibility for their own learning. Self-regulated learning is a process by which students set goals for their learning and then try to monitor, regulate and control their cognitive processes, motivation and behavior considering their goals and the learning environment.[10] A recent study found that during the process of transition from traditional learning to a flipped classroom learning model promoting peer learning and help seeking behavior could significantly improve the academic performance of students.[11] At a medical university in Pakistan, a ten-hour learning skills was conducted for medical students to introduce them to small group, problem-based learning and acquaint them with small group dynamics and make them independent life-long learners.[12] Sessions on study skills session and on self-regulation of learning are important for students to accept increasing responsibility for their own learning. At a medical school in the United States, the reasons for reluctance to engage in educational activities while in class were explored.[13] Among the reasons were passive classroom activities which were not always well-designed, students' perception that they have still not achieved the developmental level which is required for active and adult learning and problems with the physical learning space.

Virtual small group learning

Many medical schools were already using some form of online distance learning, but the COVID-19 pandemic and the suspension of face-to-face teaching provided a major push toward online learning. SGL sessions can be conducted online using various software platforms which are available. There are institutionally supported platforms to which the faculty's institution has subscribed and freely available resources. The basic principles for online SGL are like what we have described. The two essential aspects of all group facilitation which are also applicable to online SGL are to ensure overall adherence to a clear objective and supporting the needs of all group members.[14] The major challenges are ensuring the participants are focused and committed to the task. Monitoring student interest and facial expressions using the students' camera device is one of the options.

Many softwares have the facility of creating 'breakout rooms' where groups of students can engage virtually, and the facilitator/s can either remain in a particular room or visit different rooms and facilitate the group processes. Assessing the contribution of an individual group member to the group task always remains a challenge and not all members may contribute equally. Recently an online web-based self and peer assessment kit has been created called SPARK Plus to judge self and peer contribution to a task.[15] The software automates data collection, collation, calculation, distribution of results and feedback. Further feedback on the tool may be required. Bandwidth issues and issues of stability of the internet may be challenges to be considered while doing synchronous small group sessions in low and middle-income countries.[16]

Group composition and reducing conflicts and disagreements

Conflicts and disagreements are inevitable in any group learning exercise. These are challenges and need to be acknowledged and resolved. Here facilitator plays active role helping to resolve conflict and disagreements. As we had mentioned previously the facilitator should not provide an overt opinion about the correctness or otherwise of a student's answer or response. Each group will have students who dominate the conversation and students who are shy and reluctant to answer. Shy students should be encouraged while 'active' students can be encouraged to also include others in the conversation.

The size and composition of the group can impact its effectiveness and influence the potential for disagreements and conflicts. Groups should be large enough so that the assignment/s does not deplete the reserves of any one member.[17] The authors mention that a rough rule or rule of thumb is that each group member can speak for at least ten minutes during each session, but it again depends upon number of participants in the group and time allocated for group activity/activities. Men and women think and work differently in small groups and a group should have a balanced gender composition as far as possible. Married couples should not be allotted to the same group. A group should have students of varying academic abilities and should foster cooperative learning where the stronger students will support the weaker ones. The assessment system should ensure that this 'cooperative' behavior is rewarded.

Assessment of small group learning

Assessment offers the opportunities to immediately assess students' learning and understanding about a

topic and to provide dynamic and live feedback. Both formative and summative evaluation is recommended. Formative is important for identifying problems early and ensuring they do not grow bigger and can be done by the facilitator meeting regularly with the group. Cooperative learning and contribution to the group should be assessed. Elizondo-Montemayor has described a criterion-referenced system for assessment of the tutorial sessions.[18] The assessment focuses on five main areas which are application of knowledge base, clinical reasoning and decision-making skills, self-directed learning, collaborative work and attitude and professionalism. We have been using modified versions of this instrument for assessment during small group sessions. Assessment is usually done both by the facilitator and by peers and should focus on the overall objectives of the session and of the group exercise. Knowledge before and after the session can be assessed using a variety of instruments.

CONCLUSION

Small group learning follows the principles of modern learning theories especially the principles of adult learning. It can be used in all fields of health professions education in varied types of curricula and is an equally effective learning method both in basic sciences and clinical sciences provided norms of small groups learning are followed and group dynamics is maintained. In this method of learning teachers act as facilitators to facilitate learning of learners. SGL requires careful planning, orientation training both for teachers and students in the beginning, enabling environment and assessment strategy. SGL contrary to the traditional perception does not require sophisticated rooms, backed by the latest in technology and information sources. SGL can be conducted in most medical schools in developing countries and even virtually during the ongoing pandemic.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ABBREVIATIONS

SGL: Small group learning; **FAIMER:** Foundation for Advancement of International Medical Education and Research; **TBL:** Team-based learning; **COVID-19:** Coronavirus disease-19.

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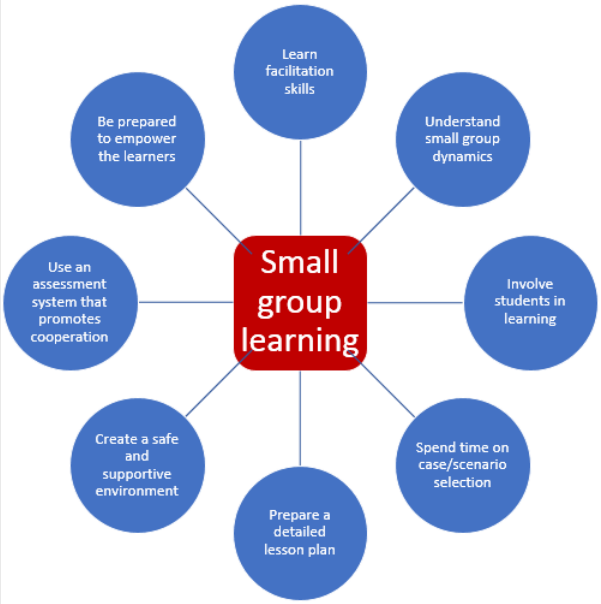
PICTORIAL ABSTRACT



SUMMARY

- Small group interactive learning sessions are becoming increasingly important in health professions education. In this article, the authors put forward suggestions for faculty to organize and conduct small group interactive sessions wherever applicable.
- Among these are to utilize opportunities to learn basic facilitation skills, be prepared to involve students more in the learning process and relinquish some of the traditional authority of a teacher, spend time on selecting the problem or clinical scenarios, and prepare a detailed lesson plan for implementation.
- Also, the assessment employed should promote group work and cooperative behaviour, close attention should be given to group dynamics and the creation of a safe learning environment.

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