

## Review Article

# SMALL GROUP TEACHING IN MEDICAL COLLEGES: A REVIEW

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### ABSTRACT

Small group teaching (SGT) has become an essential component of modern medical education, providing an interactive platform for students to engage in active learning, critical thinking, and collaborative problem-solving. This review explores the historical evolution, theoretical foundations, benefits, methods, and future directions of SGT in medical colleges. An extensive review of the literature was conducted to analyse key studies and evidence-based practices related to small group teaching. Various instructional models such as problem-based learning, case-based learning, and team-based learning were examined, along with the integration of technology and student perspectives. SGT has been shown to enhance student comprehension, retention, clinical reasoning, and communication skills. Despite challenges including faculty resource demands and group management, innovative teaching strategies and hybrid learning models offer practical solutions. Student feedback consistently affirms the effectiveness and appeal of SGT over traditional lecture-based methods. SGT remains a pivotal instructional strategy in medical education, aligning with the principles of student-centred and outcome-based learning. Its continued evolution, supported by technological advancements and faculty development, promises to further improve the quality of medical training globally.

**Keywords:** Small group teaching, medical education, active learning, student engagement, clinical reasoning.

## INTRODUCTION

The landscape of medical education has undergone significant transformation in recent decades, with a strong emphasis on the development of learner-centred pedagogical approaches. Among these, small group teaching (SGT) has emerged as a cornerstone instructional methodology, recognized globally for its effectiveness in promoting active learning, critical thinking, and the cultivation of essential interpersonal skills.<sup>[1-3]</sup> SGT stands in stark contrast to the conventional didactic lecture model, which primarily encourages passive knowledge absorption. Instead, SGT provides a dynamic and interactive learning environment where students are empowered to engage in meaningful dialogue, pose questions, and apply knowledge to clinical scenarios. This collaborative format not only enhances academic performance but also fosters the development of essential competencies such as communication,

teamwork, leadership, and problem-solving, which are vital in the practice of modern medicine.<sup>[1,2]</sup> The transition from traditional lecture-based teaching to student-centred learning models has been driven by an increased focus on outcome-based education frameworks. Medical colleges worldwide have embraced SGT as an effective strategy to bridge the gap between theoretical learning and real-world clinical practice. It serves as a valuable platform to simulate patient care environments, promote reflective learning, and address the increasing complexities involved in clinical reasoning and healthcare delivery.<sup>[2,3]</sup>

### Historical Background and Evolution of SGT

The concept of small group learning can be traced back to the early 20th century as part of the progressive education movement, which advocated for the active participation of students in the learning process rather than passive reception of information.<sup>[2]</sup> Initially adopted in general education,

this approach gradually gained traction in the field of medical education, where the limitations of large-scale lectures in addressing individual student needs became increasingly evident. The introduction of the problem-based learning (PBL) model at McMaster University in the 1960s marked a revolutionary moment for small group learning in medical curricula.<sup>[2,4]</sup> Since then, medical schools across both developed and developing countries have incorporated SGT into their programs as a complementary method to lectures and bedside teaching. The widespread adoption of SGT has been facilitated by growing recognition of its capacity to promote deeper understanding, foster collaborative learning, and create opportunities for student-centred education.<sup>[2,4]</sup> Today, SGT is widely integrated into pre-clinical and clinical phases of medical education, ranging from basic sciences tutorials to complex case discussions and team-based learning activities.

### Defining Small Group Teaching

Small group teaching is generally characterized by the engagement of a limited number of students, typically ranging from 8 to 15 participants, under the direction of a trained facilitator.<sup>[5-7]</sup> The relatively small size of the group creates a safe and supportive environment where students are encouraged to actively participate, express their viewpoints, and critically appraise both their own and their peers' ideas. This interactive setting promotes a deeper level of engagement with the material compared to traditional lectures and enhances the development of higher-order thinking skills such as analysis, evaluation, and synthesis.<sup>[6,7]</sup> The role of the facilitator is central to the success of the SGT process. Rather than serving as a direct instructor, the facilitator acts as a guide who encourages discussion, asks probing questions, and ensures that the learning objectives are met. SGT sessions may include a variety of formats, such as tutorials, case-based discussions, problem-solving exercises, and peer teaching activities, all designed to foster critical thinking and reflective practice in a cooperative learning environment.<sup>[5,6]</sup> This method has proven especially valuable in medical education, where the integration of theoretical knowledge with clinical application is paramount.

### Various Methods of Small Group Teaching

A range of structured and interactive methods can be employed to enhance learning effectiveness in small group teaching (SGT) environments. These methods encourage active student participation, collaboration, and critical thinking skills, which are key objectives of modern medical education.<sup>[1,3,8,9]</sup>

**Tutorial:** In the tutorial format, a facilitator engages with a small number of students to explore a pre-assigned topic. The expectation is that students arrive prepared, having reviewed the material beforehand. The session focuses on clarifying concepts and deepening understanding through discussion and questioning.<sup>[10]</sup>

**Think-Pair-Share:** This cooperative learning technique involves students reflecting individually

on a specific question or problem. They then pair with a peer to discuss their ideas before sharing their conclusions with the larger group. This method promotes individual accountability and collaborative learning.<sup>[9]</sup>

### Buzz Group

In a buzz group, students form pairs or small teams of three to five members. They are given a focused task or problem to discuss intensively for a short period, generating lively conversation (the "buzz"). Outcomes are later presented to the full group, typically using tools like a blackboard, flipchart, or PowerPoint to summarize the feedback.<sup>[11]</sup>

### Snowball Technique

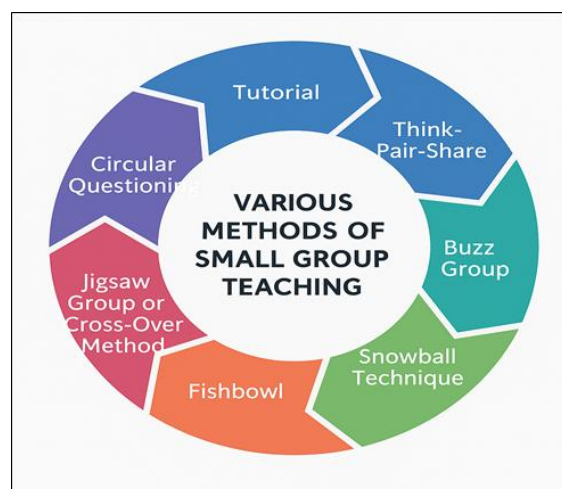
An extension of the buzz group method, snowballing begins with student pairs who share and discuss their thoughts. These pairs gradually combine into larger groups of four, eight, and finally the entire class. The progressive exchange of ideas helps students refine their viewpoints and gain confidence through smaller, low-pressure discussions before addressing the full group.<sup>[9]</sup>

### Fishbowl

This technique involves students seated in two concentric circles. The inner circle discusses a problem or case study, while the outer circle observes the discussion, noting aspects such as the strength of arguments, level of participation, and quality of interaction. Afterward, feedback is shared, and the groups switch roles, promoting peer observation and critique.<sup>[9,11]</sup>

### Jigsaw Group or Cross-Over Method

The jigsaw technique involves dividing students into subgroups, with each subgroup responsible for mastering one segment of a topic. After initial discussions, students reorganize into new groups, ensuring that each new group has at least one member from each original subgroup. This method allows comprehensive coverage of complex material within a limited time frame and fosters peer teaching.<sup>[8,9]</sup>



**Figure 1. Various Methods of Small Group Teaching**

### Circular Questioning

In this method, each student formulates a question related to the topic and poses it to the next student in

the circle. The responding student has a designated time, usually one to two minutes, to provide an answer. This process continues until all students have had the opportunity to participate, thereby ensuring active involvement and reinforcing knowledge through peer inquiry.<sup>[9]</sup>

This structured variety of SGT methods supports multiple learning styles and offers flexibility in adapting teaching strategies to achieve optimal educational outcomes in medical colleges.<sup>[1,3,9]</sup>

### **Educational Theories Underpinning SGT**

Small group teaching is deeply rooted in established educational theories, primarily constructivism and adult learning theory. Constructivist learning posits that knowledge is actively constructed by learners through engagement with content, reflection, and collaboration with peers.<sup>[2]</sup> SGT provides the perfect platform for these interactions by facilitating discussion, exploration, and application of concepts in real-world contexts, thus enabling learners to build on their prior knowledge and experiences.<sup>[2,12,13]</sup> Additionally, adult learning theory, or andragogy, emphasizes the self-directed nature of adult learners, highlighting the importance of involving them in the planning and evaluation of their instruction. SGT aligns well with this principle by allowing learners to assume ownership of their learning process.<sup>[12,13]</sup> Bloom's revised taxonomy has also proven particularly beneficial in designing small group learning sessions. It encourages facilitators to structure activities that promote not just recall of information but also higher-order cognitive processes such as application, analysis, evaluation, and creation.<sup>[12]</sup> Consequently, SGT fosters the development of deep learning, clinical reasoning, and decision-making skills that are vital for healthcare professionals.

### **Benefits of Small Group Teaching**

The benefits of small group teaching are widely documented in the medical education literature. Studies consistently show that SGT enhances not only the comprehension and retention of complex subject matter but also improves interpersonal communication skills and promotes collaborative learning.<sup>[3,5,9]</sup> The interactive nature of SGT encourages students to articulate their understanding, question assumptions, and engage in peer teaching, all of which contribute to a richer learning experience.<sup>[5,9]</sup> SGT environments also provide opportunities for learners to practice essential clinical reasoning and problem-solving skills in a controlled setting.<sup>[3]</sup> One of the key strengths of SGT is the provision of formative assessment and immediate feedback.<sup>[14]</sup> Timely feedback allows students to identify their strengths and areas for improvement, thus fostering self-regulation and independent learning.<sup>[14]</sup> Furthermore, the supportive environment created in small groups often enhances student confidence and motivation, particularly for those who may be hesitant to participate in large lecture settings.<sup>[9]</sup>

**Planning and Structuring an SGT Session:** Careful planning and structured delivery are critical to the success of any small group teaching session. The process begins with the establishment of clear and measurable learning objectives that align with the overall curriculum goals.<sup>[5,15]</sup> The facilitator must then design appropriate case scenarios, problem-based tasks, or discussion topics that will engage students and stimulate critical thinking.<sup>[5,15]</sup> Equally important is the preparation of all necessary learning materials and resources in advance to ensure the session runs smoothly. The physical setup of the learning space should encourage open communication and active participation. Establishing ground rules at the start of the session—such as respecting diverse opinions and promoting equitable participation—can further enhance the learning experience.<sup>[15]</sup> Throughout the session, the facilitator should monitor group dynamics, manage time effectively, and intervene when necessary to guide discussions back to the intended objectives.<sup>[5,15]</sup> By balancing structured guidance with learner autonomy, facilitators can create a productive environment that maximizes educational outcomes.



**Figure 2. Planning and Structuring an SGT Session**

### **Facilitator's Role in SGT**

The role of the facilitator is pivotal to the success of small group teaching. Unlike traditional lecturers, facilitators in SGT act primarily as guides and mentors, steering students towards achieving the learning objectives rather than simply delivering content.<sup>[9,11]</sup> An effective facilitator creates a safe and inclusive atmosphere where all participants feel comfortable to contribute ideas, ask questions, and challenge assumptions.<sup>[11]</sup> This requires skill in managing group dynamics, encouraging quieter students to participate, and preventing dominant individuals from monopolizing discussions.<sup>[9]</sup> The ability to ask probing and open-ended questions that promote deeper understanding is a critical facilitation skill.<sup>[16]</sup> In addition to managing discussions, facilitators must also provide constructive feedback to help students reflect on their performance and

guide them toward improvement.<sup>[9,14]</sup> Because the success of SGT depends so heavily on facilitation skills, faculty development programs must include targeted training to prepare educators for this role. Ongoing professional development and peer observation are also recommended to continuously enhance facilitators' effectiveness in promoting high-quality learning experiences.<sup>[9,14]</sup>

### **Teaching and Learning Methods in SGT**

Small group teaching (SGT) incorporates a diverse array of instructional methodologies designed to foster student engagement and promote deeper learning. Over time, several evidence-based approaches have evolved under the SGT umbrella, including problem-based learning (PBL), case-based learning (CBL), and team-based learning (TBL).<sup>[16-18]</sup> PBL focuses on student-led exploration of clinical problems, encouraging the development of critical thinking and independent learning skills. CBL, widely applied in health professional education, combines theoretical knowledge with clinical scenarios, offering students the opportunity to apply classroom learning to real-life patient cases.<sup>[17]</sup> This method has shown to be particularly effective in promoting clinical reasoning, communication, and collaborative problem-solving abilities.<sup>[17]</sup> TBL, a structured form of collaborative learning, involves pre-class preparation, in-class individual and team-based assessments, and application exercises to reinforce learning objectives.<sup>[16,18]</sup> The combination of these methods provides flexibility and adaptability in SGT, catering to different learning styles and encouraging active participation across diverse learner groups.

### **The Impact of Technology on SGT**

Technological advancements have significantly transformed the landscape of small group teaching. Traditional face-to-face discussions are now increasingly supplemented by simulation-based learning, virtual learning platforms, and other digital resources.<sup>[10,19,20]</sup> The integration of high-fidelity simulators allows learners to practice clinical decision-making and procedural skills in a safe, controlled environment, bridging the gap between theoretical instruction and clinical practice.<sup>[20]</sup> Furthermore, multimedia resources such as instructional videos, interactive software, and virtual patient encounters have been shown to enhance student concentration and engagement.<sup>[10,19]</sup> The ergonomic design of learning environments and the use of technology to accommodate diverse learning needs have also been associated with improved educational outcomes and learner satisfaction.<sup>[19]</sup> These innovations not only increase accessibility to learning materials but also promote self-directed learning and continuous professional development.

### **Challenges in Small Group Teaching**

Despite its well-documented advantages, small group teaching faces numerous challenges that can hinder its effectiveness. One of the primary limitations is the requirement for substantial faculty resources; small groups necessitate a higher facilitator-to-student ratio

compared to traditional lectures, which may strain institutional capacities.<sup>[4,6]</sup> Variability in facilitator expertise and comfort with group facilitation can lead to inconsistent learning experiences.<sup>[21]</sup> Additionally, managing group dynamics in large or diverse student cohorts presents logistical difficulties.<sup>[4,6]</sup> The time-intensive nature of SGT can also make balancing teaching content with formative assessment and feedback challenging for educators.<sup>[14]</sup> Institutions must address these barriers through strategic faculty development, careful planning, and resource allocation to ensure the consistent delivery of high-quality small group instruction.

### **Innovations and Future Directions**

To overcome current limitations and further enhance the effectiveness of small group teaching, medical educators are increasingly advocating for innovative teaching models. One emerging approach involves combining the strengths of PBL and TBL to optimize student learning and engagement.<sup>[18]</sup> Such hybrid models aim to capitalize on the self-directed exploration of PBL and the structured collaboration of TBL, promoting both autonomy and teamwork.<sup>[18-23]</sup> Additionally, aligning SGT activities with well-defined learning objectives and competency frameworks has been emphasized to ensure that educational outcomes are met in a measurable and consistent manner.<sup>[13]</sup> Future innovations may also include expanded use of digital learning platforms, virtual reality simulations, and adaptive learning technologies to further personalize the educational experience and increase scalability.

### **Student Perspectives on SGT**

Student feedback on small group teaching has been overwhelmingly positive, with many learners reporting that SGT provides a more engaging and stimulating educational experience compared to traditional lecture-based instruction.<sup>[1,8]</sup> The opportunity for active participation, peer learning, and immediate feedback contributes to improved understanding and retention of material. Studies have shown that SGT enhances students' problem-solving abilities, fosters the development of communication and teamwork skills, and promotes greater accountability for their own learning.<sup>[1,8]</sup> Furthermore, the interactive and student-centred nature of SGT has been linked to higher levels of motivation and academic performance, particularly among students who may struggle to remain engaged in large lecture settings.<sup>[1,8]</sup> These findings underscore the importance of maintaining and expanding SGT methodologies within medical curricula.

## **CONCLUSION**

Small group teaching (SGT) has firmly established itself as a vital pedagogical strategy within medical education. It provides a dynamic, student-centred learning environment that encourages active participation, fosters critical thinking, and enhances



clinical reasoning and communication skills. Drawing from constructivist and adult learning theories, SGT successfully bridges the gap between theoretical knowledge and clinical practice by promoting collaborative learning and reflective inquiry. The incorporation of diverse methods such as PBL, CBL, and TBL, along with the integration of advanced educational technologies, has further enriched the scope and effectiveness of SGT. Despite its many benefits, challenges such as faculty shortages, variability in facilitation quality, and logistical constraints remain. Addressing these limitations through faculty development, innovative hybrid learning models, and alignment with competency-based frameworks holds great promise for the future of SGT. Ultimately, student feedback consistently highlights the value of SGT in enhancing engagement, motivation, and academic performance. As medical education continues to evolve, the role of small group teaching will remain central to developing competent, reflective, and collaborative healthcare professionals.

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