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Guest Editorial

Triple Cs of interactive teaching: Concept, conduct & curriculum placement

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Many of us use lectures for classroom teaching. Lectures are, in fact, one of the oldest and most commonly used methods of teaching. They are an efficient means of transmitting information to large groups but are often teacher-centered and the students are often passive participants. The days of students sitting in large, dark lecture halls listening to slides are fading. The landscape of medical education is undergoing a paradigm shift from teacher-centered instruction to learner-centered engagement. In this context, interactive teaching has emerged as a cornerstone of modern medical education. Rather than viewing students as passive recipients of information, interactive teaching actively involves learners in the construction, application, and evaluation of knowledge. This approach aligns with contemporary educational theories that emphasize active learning, critical thinking, collaboration, and lifelong learning skills. It underscores why interactive teaching has become a central strategy in competency-based education, where understanding, application, and performance are valued alongside knowledge acquisition.

Interactive teaching turns the classroom into a two-way street. It changes how teachers teach and how students learn. This is quite relevant for phase 1 and 2 MBBS subjects as in these subjects many times content delivery is the main focus. Infact, the biggest enemy to learning is the talking teacher. In medicine, knowing facts is only half the battle. The true test is how a doctor uses that knowledge at a patient's bedside. Interactive teaching turns passive listeners into active thinkers. It prepares medical students for the fast-paced evolving world of healthcare that also fits aptly in new competency based medical education curriculum.

Interactive teaching is a simple concept. It means students take part in the lesson instead of just listening. They do not just sit and take notes. Instead, they talk, think and create. The teacher acts as a guide, not just a talker. This method makes big ideas/concepts easier to understand. It keeps students awake, alert, and motivated to learn. The teacher assumes the role of a facilitator who guides learning rather than merely transmitting information.

1. Concept

Learning is not equivalent to information transfer and this is depicted in famously observed statement that “Lecturing is that mysterious process by means of which the contents of the note-book of the professor are transferred through the instrument of the fountain pen to the note-book of the student without passing through the mind of either.”

The learners must be considered adult learner and hence principles of adult learning apply to them i.e. learner is an active contributor, they need safe and non-threatening atmosphere, where teacher builds on existing knowledge, so that learners feel motivated. This signifies learner centered approach so that in a lecture or large grupp teaching (LGT) teachers can inspire and influence learners for learning.

A very old saying, “Tell me and I will forget; show me and I may remember involve me and I will understand” commonly attributed to Confucius highlight the concept which we are talking these days to implement. The learning pyramid and cone of experience give a way to classify learning experiences from concrete to abstract and how learning happens and retained with various modes. The approximate percentages give a bird’s eye view about the active and passive learning. Learner seems to understand and retain 20% of what they hear, 30% of what they see,50% of what they hear and see, 70% of what they hear, see and say and 90% of what they hear, see, say and do.

You might have experience same when you have taught over many years. Therefore, Students learn more effectively when they actively engage with content through discussion, practice, problem-solving, interactivity and reflection. So, basically interaction is with contents and facilitated by

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teachers through careful planning. This reflects the principles of modern educational theories, particularly constructivism, experiential learning and active learning which propose that learners build knowledge through active engagement and experience.

It helps students understand the "why" behind a disease, not just the terminologies. When students talk through a medical case, they remember the details much better and for longer period. The underlying premise is that learning is most effective when students engage cognitively, emotionally and socially with the subject matter. Interactive methods encourage deeper understanding, improve retention of knowledge and facilitate the development of professional competencies such as communication, teamwork and clinical reasoning.

2. Conduct

Conducting an interactive class needs careful planning. It is more than just asking a few questions. Teachers use special tools and choices to get everyone moving. Learning objectives should be clearly defined and aligned with the expected competencies. Pre-session preparation, such as designing/selecting trigger cases enables students to participate meaningfully.

A typical interactive session begins with a stimulus—such as a clinical vignette or a scenario e.g. in anatomy/physiology/pharmacology, problem, image, or question—to capture learners' attention. Students then engage individually or in groups to analyze, discuss and propose solutions. The facilitator guides the discussion, encourages participation from all learners, provides feedback, and helps synthesize key learning points. Digital tools, audience response systems, and online collaborative platforms can further enhance engagement.

There is endless list of interactive methods. Few methods are listed here.

1. **Think-pair-share:** Students think about a question alone. Then, they talk to a partner in the allocated pair. Finally, they share ideas with the whole class. Time required in 2 minutes quite thinking, 2 minutes haring buy ist person, 2 minutes sharing by 2nd person, a total of 6 minutes.
2. **Group projects:** Small teams work together to solve a real problem/project.
3. **Quick Polls:** Teachers use tech tools or simple hand raises to see what students understand right away. Technology is being used here.
4. **Brainstorming sessions:** The class fills the board with ideas without any judgment. These steps help students learn to think for themselves. They also learn how to work well with others.
5. **Use of clinical history** in Case-based learning (CBL): In CBL, problem-based learning (PBL) students review real patient charts in small groups. They debate diagnoses and choose the best treatments and the process is facilitated by a teacher who is designated as facilitators for these sessions.
6. **Flipped classrooms:** Students watch video lectures or read notes at home. They spend class time solving tough clinical puzzles together Intelligent interruptions. Then they come to class for discussions. Teacher facilitates discussion.

- Asking questions in various forms like true false, quiz, rhetorical questions, crossword puzzle etc.
- Using small groups in LGT like - Snow ball effect, Buzz groups- allow students to talk to each other for 2-3 minutes and discuss their problems.
- Use of relevant laughter-this can be used when relevant.
- One minute papers-bringing out key points and muddiest point from discussions.
- Brainstorming, quick think reordering etc.
- Assignments and reflections.
- Simulations, role plays, debates and small-group discussions.

For each session e.g. LGT, plan the activities keeping in view that attention span of learners is around 7-8 minutes. Hence, when you plan one hour LGT, make sure you use the attention span slots for main conceptual understanding followed by ways of interactivity and then again capture the next attention span slot and then again another method of interactivity.

Assessment should be integrated into the process through formative quizzes, reflective exercises, peer assessment, or feedback discussions. The focus should remain on active participation and achievement of learning outcomes rather than mere completion of activities. Assessment systems must update to match this style. Colleges should judge students on teamwork, clinical reasoning and communication skills during group tasks, rather than relying solely on theory exams.

2.1. Curriculum placement

Interactive teaching should not be viewed as an occasional treat but as an integral component of the curriculum. Its placement must be guided by competency requirements and learning objectives. It needs a permanent placement in the medical college curriculum. It fits well into every single subject.

Within competency-based medical education, interactive teaching is particularly valuable for addressing higher levels of learning domains, including application, analysis, synthesis, and professional behavior. A balanced curriculum should have interactive sessions for knowledge integration and skill development. Longitudinal incorporation across all phases of training ensures continuity and progressive development of competencies.

Interactive teaching belongs in every stage of medical training. It should not be saved only for the final years of clinical rotations. It can be planned as:

Phase 1 and 2 of MBBS: Medical colleges should embed active learning directly into subjects like anatomy, physiology, pharmacology etc. For instance, students can work in teams to solve a puzzle about how a specific factor affects the heart. In these phases, interactive strategies can facilitate conceptual understanding through case discussions, concept mapping, and collaborative learning. New teachers

need to be made aware of these.

Phase 3 MBBS: During these phases, it should happen daily through hospital postings, bedside teachings, simulation-based learning and case-based discussions to bridge theory and practice.

2.2. Challenges and future directions

Despite its advantages, interactive teaching faces challenges such as large class sizes, limited faculty training, fear of losing control over class, time management and resource requirements. Faculty development programs and institutional support are essential to overcome these barriers. Advances in educational technology, virtual simulations and artificial intelligence offer new opportunities to enhance learner engagement and personalize educational experiences.

3. Conclusion

Interactive teaching is no longer just a fun option. It is necessary for today's world. It helps students connect college lessons to real life. When we let students participate, we help them succeed out in the world.

Interactive teaching represents a transformative approach that aligns educational practices with the demands of modern healthcare. By fostering active participation, critical thinking, and competency development, it prepares learners not only to acquire knowledge but also to apply it effectively in real-world settings. Thoughtful integration of interactive teaching within the curriculum can significantly enhance the quality of medical education and ultimately contribute to better patient care.

4. Conflict of Interest

None.

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