

A CROSS-SECTIONAL STUDY TO EVALUATE THE EFFECT OF FLIPPED CLASSROOMS IN TEACHING COMMUNICATION SKILLS TO FIRST-PHASE MBBS STUDENTS IN A MEDICAL COLLEGE IN EASTERN INDIA

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Abstract:

Communication skills are vital in medical education as they facilitate effective interactions between healthcare providers and patients.

Objectives: To evaluate the effect of flipped classrooms in teaching communication skills to first-phase MBBS students in a medical college in eastern India.

Methodology and Participants: This study was carried out among two hundred Phase I MBBS learners after obtaining institutional ethical clearance and informed consent from the participants. Five faculty members of the Department of Physiology acted as facilitators for the sessions. A module was prepared and validated by senior faculty members of the same department. Four interactive face-to-face (two hours each) sessions were conducted for the students and the rest interactions were done using WhatsApp groups. Students were divided into 10 groups with 20 students in each group according to class roll numbers.

Results: Assessment of communication skills during the contact sessions was done by facilitators and peers using the Gap-Kalamazoo communication skill assessment form and results showed that the participants performed between fair to very good in all the 9 items. The participants did best in the following three items of the assessment scale: Opens the discussion; Gathers information; Demonstrates empathy. Pre-test score of MCQ exam: 41.35 ± 2.14 vs. Post-test score of MCQ exam: 81.4 ± 4.12 ; P value: $<0.01^{**}$ (highly significant). Students were satisfied with the knowledge and skills they had acquired and this module motivated them to join similar classes in the future, this is as per responses received in the feedback survey and on analysis of reflections.

Conclusions: The learners and participants were satisfied with the method of teaching communication skills using flipped classes in the early phase of the MBBS curriculum. The potential for students to exercise newly acquired skills in a real-world setting was the most favored and the most effective method of teaching-learning communication. Self-reflection consolidated learning success.

Keywords: Communication skills, Flipped classroom, Medical students.

Introduction:

Communication skills are vital in medical education as they facilitate effective interactions between healthcare providers and patients. In medical education, students are trained to develop these skills through various methods such as role-playing, simulated patient encounters, and real-life clinical experiences. Effective communication improves patient satisfaction, as well as overall healthcare outcomes, and enhances teamwork among healthcare professionals, leading to better patient care and safety. Thus, integrating communication skills training into medical education programs is essential for producing competent and compassionate healthcare providers. ^[1-6]

Communication skills are often categorized as soft skills, making them challenging to teach and evaluate. Unlike hard skills that involve technical knowledge and specific procedures, communication skills encompass a broad range of abilities including verbal and written expression, listening, empathy, and nonverbal communication. Teaching these skills involves providing theoretical frameworks, practical exercises, and feedback, but their subjective nature makes assessment less straightforward. Evaluating communication skills typically involves observing interactions, analyzing outcomes, and considering factors such as clarity, persuasiveness, and rapport. Despite the challenges, fostering effective communication skills is crucial for personal and professional success, making ongoing development and evaluation essential. ^[1-6]

The flipped classroom model has gained popularity in medical education due to its potential to enhance learning outcomes and promote active engagement among students. In a flipped classroom, traditional teaching methods are reversed: students are introduced to course materials, often through online videos or readings, before class sessions. During class time, students engage in activities such as case discussions, problem-solving exercises, or hands-on simulations, allowing for deeper exploration and application of concepts under the guidance of instructors. In medical education, the flipped classroom approach offers several benefits. Firstly, it allows students to take ownership of their learning and progress at their own pace, catering to diverse learning styles and preferences. Secondly, class time can be optimized for active learning activities that foster critical thinking, clinical reasoning, and teamwork skills, which are essential in the medical profession. Additionally, the flipped classroom encourages collaboration among students and between students and instructors, promoting a supportive learning environment. ^[7-9]

However, implementing a flipped classroom requires careful planning and resources, including creating high-quality pre-class materials, providing support for students who may struggle with self-directed learning, and designing effective in-class activities. Despite these challenges, the flipped classroom model has demonstrated promising results in medical education, with studies indicating improved student engagement, satisfaction, and academic performance. As medical education continues to evolve, the flipped classroom offers a valuable approach to fostering deeper learning and preparing future healthcare professionals for the complexities of clinical practice. Implementing a flipped-classroom approach to teach communication skills to medical students can be highly effective. ^[11-15]

The benefits of using a flipped classroom approach for teaching communication skills to medical students include:

- **Active Engagement:** Students are actively engaged in learning through pre-class assignments and in-class activities, promoting deeper understanding and retention of communication concepts.
- **Application and Practice:** Students have ample opportunities to apply and practice communication skills in a supportive environment, facilitating skill development and confidence-building.

- **Individualized Learning:** Students can progress at their own pace with pre-class materials, allowing for individualized learning experiences and addressing diverse learning needs.
- **Immediate Feedback:** In-class activities provide immediate feedback from peers and facilitators, enabling students to identify areas for improvement and refine their communication skills in real time.
- **Integration with Clinical Practice:** By integrating communication skills training into clinical rotations, students learn to apply their skills in authentic healthcare settings, preparing them for real-world interactions with patients and colleagues.

Overall, a flipped classroom approach offers a dynamic and student-centered approach to teaching communication skills to medical students, fostering not only competence but also empathy and professionalism in future healthcare providers. ^[7-15] This institutional cross-sectional study was conducted to evaluate the effect of flipped classrooms in teaching communication skills to first-phase MBBS students in a medical college in eastern India.

Methodology and Participants:

The present study was conducted among two hundred Phase I MBBS students after obtaining institutional ethical clearance (BMC/ I.E.C./248: 7/6/2021) and informed consent from the participants. Five faculty members of the Department of Physiology acted as facilitators for the sessions. A module was prepared and validated by senior faculty members of the same department. Four interactive face-to-face (two hours each) sessions were conducted for the students and the rest interactions were done using WhatsApp groups. Students were divided into 10 groups with 20 students in each group according to class roll numbers. A pre-test was conducted.

Here's a breakdown of how the sessions were conducted:

Pre-class Learning Material: Before the class session, students were provided with learning materials such as videos, articles, or interactive modules covering the basics of communication skills in a medical context. These materials included topics like active listening, questioning, empathy, breaking bad news, and cultural sensitivity.

Assignments: Students were given assignments related to the pre-class material, such as reflections, quizzes, or case studies, to ensure they engaged with the content and came prepared to apply it during the class session.

In-class Activities: Instead of traditional lectures, class time was dedicated to interactive activities that reinforce and apply communication skills. This included role-playing scenarios where students practiced communicating with simulated patients or peers, facilitated small group discussions, or analyzed recorded doctor-patient interactions.

Feedback and Discussion: Facilitators provided constructive feedback on students' communication skills during in-class activities. Additionally, there was time for debriefing and discussion where students reflected on their experiences, shared insights, and asked questions.

Integration with Clinical Practice: To further reinforce learning, communication skills training was integrated into early clinical exposure sessions and Clinical Physiology practical and demonstration sessions. This allowed students to apply their knowledge in real-world settings under supervision and receive feedback from experienced facilitators.

Assessment: Evaluation of students' communication skills in an ongoing and comprehensive manner, including both formative assessments (e.g., feedback during in-class activities) and summative assessments (e.g., observed structured practical examinations or OSPEs).

Session I: Enhancing Listening and Questioning Skills in Medical Education

Session Overview: In the field of medicine, effective communication skills are paramount. A significant aspect of communication is the ability to listen actively and ask relevant questions. This session aims to delve into the importance of listening and questioning skills in medical education and provide strategies to enhance these skills among medical students.

Learning Objectives:

1. Understand the importance of active listening and effective questioning in medical practice.
2. Recognize common barriers to effective listening and questioning.
3. Learn practical strategies to improve listening and questioning skills.
4. Apply acquired skills through interactive exercises and case scenarios.

Session II: Building Rapport and Effective Communication Skills in Medical Education

Effective communication and rapport-building are essential skills for healthcare professionals. By honing these skills, medical practitioners can enhance patient outcomes, improve patient satisfaction, and foster trusting relationships. Continued practice and self-reflection are key to mastering these vital competencies in medical education and practice.

Objective: To equip medical professionals with essential counseling and rapport-building skills crucial for effective patient interaction and communication.

Session III: Breaking Bad News: Techniques and Case Studies

Objectives:

- To understand the importance of effective communication in delivering bad news in medical practice.
- To explore different techniques and strategies for breaking bad news empathetically.
- To analyze and discuss case studies illustrating various scenarios of breaking bad news in medical education.

Session IV: Empathy, an essential element of communication

Objectives for a session on empathy as a part of communication skills in medical education:

Objective 1: Understand the concept of empathy in the context of medical education, including its definition, importance, and relevance to patient care.

Objective 2: Explore the impact of empathy on patient outcomes, satisfaction, and overall quality of care in healthcare settings.

Objective 3: Recognize the role of empathy in building strong doctor-patient relationships, enhancing communication skills, and fostering trust between healthcare providers and patients.

Objective 4: Identify strategies and techniques to cultivate and enhance empathy among medical students and healthcare professionals, including active listening, perspective-taking, and empathetic communication.

Objective 5: Discuss the challenges and barriers to practicing empathy in the medical field, such as burnout, time constraints, and cultural differences, and brainstorm solutions to overcome these obstacles.

Objective 6: Reflect on personal experiences and attitudes towards empathy in patient care, and develop a plan for integrating empathy into daily medical practice and education.

Objective 7: Collaborate with peers to share insights, perspectives, and best practices for incorporating empathy into medical education curricula and training programs.

Assessment of communication skills during the contact sessions was done by facilitators and peers using the Gap-Kalamazoo communication skill assessment form. ^[16]

A post-test MCQ exam was conducted following the completion of the module.

Feedback and reflection: Feedback was collected from the students and facilitators using closed-ended questions and one open-ended question following the four sessions. Students were asked to write reflections highlighting the following points: What happened? So, what? What next?

Program evaluation was done: Kirkpatrick level 1

Results:

Two hundred students of the first Phase MBBS of batch 2022-23 participated in the study. Pre-test score of MCQ exam: 41.35 ± 2.14 vs. Post-test score of MCQ exam: 81.4 ± 4.12 ; P value: $<0.01^{**}$ (highly significant). Students were satisfied with the knowledge and skills they had acquired and this module motivated them to join similar classes in the future (Table I), this is as per responses received in the feedback survey.

Opinion of students: Through online materials and assigned tasks, various facets of communication skills were covered throughout the module. The focus was on inducing immersion in the learners concerning communication skills, leading to motivation and active engagement with the provided materials. The facilitators played a crucial role in maintaining the momentum and ensuring a continuous learning process. With a sense of motivation in mind, facilitators put tremendous effort forth to keep everyone actively involved in the learning process. The month-long process required a collective commitment to learning and adapting to the new methodologies introduced by the CBME Curriculum. The students felt the usefulness of teaching communication skills using flipped classes in the early phase of the MBBS curriculum. From this module, students perceived the potential to exercise newly acquired skills in a real-world setting as the most favored and effective method of teaching-learning communication. They also perceived that elaborate self-reflection consolidates learning. According to the learners, it is essential to offer students the possibility to reflect on and practice their communication skills at an early stage of their UG curriculum as these reflective practices will enable them to acquire and efficiently expand these competencies throughout the higher academic years.

Suggestions given by students for improving the sessions:

- More topics need to be taught in this form.
- Need study materials well ahead of time like this module.
- Please conduct similar sessions on communication skills throughout the MBBS course.

Assessment of communication skills during the contact sessions was done by facilitators and peers using the Gap-Kalamazoo communication skill assessment form and results showed that the participants performed between fair to very good in all the 9 items. The participants did best in the following three items of the assessment scale: Opens the discussion; Gathers information; Demonstrates empathy. The domains where the participants could improve: Communicates accurate information; Builds a relationship; Understands the patient's and family's perspectives. The facilitators felt the module would have been more effective if it had been implemented among higher professional years, as in the first phase students were not able to communicate accurate information and the students needed longitudinal follow-up.

Table I: The following were the responses of the students in the feedback form:

Feedback Question	(%) Strongly Disagree	(%) Disagree	(%) Neutral	(%) Agree	(%) Strongly Agree
The Flipped classroom gives me a greater opportunity to communicate with other students and helps me to improve my communication skills	0	0	8	78	14
The Flipped classroom is more engaging and interactive than a traditional lecture class and I could learn communication skills effectively.	0	0	9	79	12
I would prefer a flipped classroom for learning communication skills in the future	0	0	5	85	10
I am more comfortable with the videos, and study materials supplied well ahead of time and I feel that it is more convenient as it helps to get prepared at my own pace.	0	0	4	80	16
More topics should be covered in Flipped classroom mode as this helps the students to interact and solve problems during the contact session. I also find this approach more engaging.	0	0	2	84	14
I am motivated to learn communication skills and I will try to apply the knowledge as well as skills I have acquired and try to improve myself.	0	0	4	83	13
These sessions helped me to improve my problem-	0	0	8	86	6

solving and critical-thinking abilities.					
I am satisfied with the knowledge and skills that I have acquired	0	0	0	82	18
I feel that it is essential to learn communication skills from the first year of the MBBS course and this skill is one of the most important aspects that doctors need to master for effective patient care.	0	0	0	0	100

Students were satisfied with the program: Kirkpatrick Level 1.

Discussion:

Teaching communication skills to medical students is crucial for their effectiveness as healthcare providers. Different methods can be employed to impart these skills, each with its advantages and limitations. ^[1-6, 17-21] A comparison of some common methods is shown in Table II.

Table II: Comparison of some common methods used to teach communication skills.

Teaching Methods	Advantages	Limitations
Didactic Lectures	Provide a structured approach to learning, covering theoretical aspects comprehensively. They can efficiently deliver foundational knowledge.	The lack of interactivity and practical application makes it challenging for students to translate theory into practice. May not address individual learning styles effectively.
Role-playing and Simulation	Offers hands-on experience in realistic scenarios, allowing students to practice communication skills in a safe environment. Encourages active participation and feedback.	Requires significant time and resources to set up and facilitate. Some students may feel self-conscious or uncomfortable during role-playing exercises.
Small Group Discussions	Foster peer-to-peer learning and collaboration, allowing students to exchange ideas and perspectives. Encourages critical thinking and problem-solving skills.	May be difficult to manage group dynamics, and some students may dominate discussions while others remain passive. Requires skilled facilitators to ensure productive outcomes.

Standardized Patient Encounters	Provide opportunities for students to interact with trained actors who simulate real-life patient scenarios. Offers personalized feedback and assessment.	Can be expensive and logistically challenging to organize. Standardized patients may not always accurately represent the diversity of patient populations.
Video-based Learning	Allows students to observe real-world examples of effective and ineffective communication skills. Offers flexibility for self-paced learning and review.	May lack interactivity and opportunities for practice. Limited to observing predefined scenarios rather than actively participating.
Reflective Writing and Journaling	Encourages self-reflection and introspection, helping students identify their strengths and areas for improvement. Can be integrated into existing coursework seamlessly.	Relies heavily on students' ability to articulate their thoughts effectively in writing. May not provide immediate feedback or opportunities for skill development.

Ultimately, a combination of these methods, tailored to the learning objectives and preferences of the students, is often most effective. Integrating diverse teaching approaches ensures comprehensive skill development and prepares medical students to communicate effectively in various clinical settings. In the present study flipped classrooms and contact interactive sessions, along with reflective practices, role plays, and video-based learning were used to help the first phase MBBS students to learn communication skills. The students and facilitators were satisfied with the knowledge and skills gained by the students.

To improve the clinical competency of fourth-year undergraduate students by teaching them fundamental counseling and communication techniques a study was conducted by Chaudhury A. et al in 2015. [21] 48 MBBS fourth-year students took part. They received instruction in fundamental counseling and communication techniques as well as the Calgary–Cambridge guide structure for patient interviews. Measures of patient communication included changes in pre- and post-training multiple-choice questions, clinical patient assessments, and Standardized Patient Satisfaction Questionnaire (SPSQ) scores. For practical application, 88% of the sample's students believed that improving communication skills is necessary. 90% of students reported improved SPSQ after training, indicating that they were communicating more successfully. The Communication Skill Attitude Scale, which measures students' favorable attitudes toward learning communication skills, used in the study indicated that training in these abilities is crucial during the college years. The perception and performance of students in the present study are similar, though the professional years studied were different.

In a study examining students' attitudes toward acquiring communication skills, Wright KB et al. [22] compared the attitudes of first- and fourth-year medical students and discovered that there is no difference in the attitudes of the two groups toward the training of communication skills. When it came to speaking with patients, fourth-year students' confidence scores were noticeably higher. These results are in line with the current investigation.

Limitations: This was a cross-sectional study and no longitudinal follow-up was done.

Conclusions:

The current study's findings support the value of utilizing flipped classrooms to teach communication skills at the initial stages of the MBBS curriculum. This module has shown us that the best way to teach communication is probably to provide students the opportunity to use their newly gained abilities in a real-world situation. It has also taught us that students, thorough self-reflections strengthen learning outcomes. Early in their undergraduate education, it is beneficial to provide students the chance to consider and practice their communication skills since this will help them develop and use these abilities in later years of study.

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