

Integrating Microteaching into Postgraduate Programs for Enhancing the Teaching Role of Medical Residents

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Abstract

Background: The residency period is required not only to acquire specialty-specific knowledge and skills but also to grow as clinicians, mentors, and leaders within their medical communities.

Objectives: The objectives of the current article are to identify the existing gaps in the role of residents as teachers, formulate a stepwise plan for the implementation of microteaching for residents, ascertain challenges in implementing microteaching among residents, and propose targeted solutions to overcome these identified challenges.

Methods: This viewpoint was developed by searching published literature on resident-led teaching and microteaching practices in postgraduate medical education. Moreover, practical suggestions were proposed, keeping in mind the contextual challenges reported in medical institutions.

Results: To master these roles, residents must engage in teaching-related activities, which can be directed to their peers, junior residents, interns, or undergraduate students. Most postgraduate residency programs lack a structured teaching-skills training component. Acknowledging the fact that skilled resident teachers can immensely contribute to the vision and mission of the Institute, there is a definite need to give them opportunities to teach and refine their skills. There lies the need to introduce a structured microteaching program for residents to improve their teaching skills.

Conclusion: In conclusion, postgraduate residents are given a limited number of opportunities to improve their teaching skills during the residency period, and introducing microteaching for them could help immensely in preparing them for their roles as teachers. The need of the hour is to adopt a stepwise plan, encompassing the involvement of all stakeholders, to derive maximum benefits and create a robust educational environment in residency programs.

Keywords: Microteaching; Feedback; Residents; Teaching; Lesson Plan; Peer learning; Competency; Mentors; Postgraduates

Background

The residency period is not only meant to acquire speciality-specific knowledge and skills but also to grow as clinicians, mentors, and leaders within their medical communities (1). To master these roles, residents must engage in teaching-related activities directed toward peers (peer learning), junior residents, interns, undergraduate students (near-peer learning), and patients for improving their understanding of the diagnosis and the management plan (2, 3). The findings of a systematic review revealed

that the residents who teach and explain concepts to others retain knowledge better and even develop a grasp of the subject (3). The results of a survey done among internal medicine residents in the United States reported that they find it challenging to identify feedback in the teaching context (4). In addition, residents engaged in teaching tend to think critically and adopt a systematic approach while dealing with their patients, which plays a vital role in strengthening their diagnostic and clinical reasoning (4).

The findings from a cross-sectional survey done to assess the interpersonal and communication skills of Anesthesiology residents highlighted the need to improve their communication skills, which is crucial for effective teamwork and interprofessional collaboration required for patient care (5). Further, residents become confident in their judgment, as they have to respond to questions or clear doubts of different stakeholders and make informed decisions, eventually preparing them for independent practice (6). Residents who are engaged in regular teaching are generally motivated to stay abreast of recent developments and thus remain committed to lifelong learning (7). Moreover, as residents teach others, they lead, mentor, and inspire others, thereby learning the skill of effective leadership and mentorship within their healthcare teams (2-4). The objectives of the current article are to identify the existing gaps in the role of residents as teachers, formulate a stepwise plan for the implementation of microteaching for residents, ascertain challenges in implementing microteaching among residents, and propose targeted solutions to overcome these identified challenges.

Residents as Teachers: Current gaps

The teaching skills are not given priority mainly due to the heavy clinical workloads and long working hours that do not allow adequate time for residents to focus on developing their teaching skills (8). In many nations, once postgraduate residents complete their training program, they can join the faculty in the capacity of a faculty member to train undergraduate students without being exposed to any pedagogical training program. It is a fact that most postgraduate residency programs do not have a structured teaching-skills training component (9). Furthermore, teaching competencies are often not considered core competencies, due to which they are never ready for teaching responsibilities, neither during the residency period nor for their future professional careers (9, 10). It is not an unknown phenomenon that if we want to improve teaching skills, we have to give an adequate number of opportunities for the residents/teachers to practice (11). However, such teaching opportunities in a structured manner are rarely provided to the residents, and this immensely limits their skill development (8, 11).

Commonly, many residents lack mentors who are strong teachers themselves. In the absence of effective role models, these residents often struggle to understand and develop skills required for effective teaching in both classroom and clinical settings (8). Whatever teaching

skills a postgraduate resident acquires are via informal interactions, targeting predominantly just the peers, which makes the quality of teaching inconsistent (2, 3). Moreover, in the absence of a structured teaching program, residents don't receive feedback on their teaching skills and thus fail to realise which areas they are doing well in and where they need more work (9, 10). In addition, the teaching skills of residents are not even assessed, and that makes it difficult for residents to measure their growth as teachers (12). All these factors clearly explain the limitations in the existing postgraduate medical curriculum, owing to which residents are not prepared for their roles as teachers (9, 10).

In a study done in Taiwan, involving experts from teaching hospitals and public medical centres, 20 experts participated in developing a competency-based framework which can be implemented for the benefit of residents-as-teachers and is in alignment with the Accreditation Council for Graduate Medical Education (13). This collaborative work eventually concluded with two core competencies, namely instruction and assessment, which further had three sub-competencies (viz. dissemination of knowledge, teaching of procedural skills, and direct observation and feedback) (13). In another study done at the Aga Khan University Hospital among enrolled family medicine residents to assess the efficacy of the dermatology course delivered via blended learning, it was reported that a significant improvement in post-test scores was obtained in comparison with pre-test scores (14). In continuation, it was concluded that blended learning is an effective and innovative teaching strategy to aid residents in improving their learning (14).

Stepwise plan for the implementation of microteaching for residents

Acknowledging the fact that skilled resident teachers can immensely contribute to the vision and mission of the Institute, there is a definite need to give them opportunities to teach and refine their skills (15). There is a need to introduce a structured microteaching program for residents to improve their teaching skills, but its successful implementation will depend on the adoption of a structured program (16). This begins with defining the purpose of the initiative (viz., enhancement of teaching skills, improved communication skills, delivery of effective feedback, etc.), as depicted in Figure 1 (15, 16).

Accordingly, specific teaching-related techniques (like case presentations, demonstration of procedures on real patients or in skills lab, patient education, etc.) should be incorporated into the curriculum, and realistic resources that are in alignment with the resident year of training should be developed to be used during microteaching sessions (16, 17). These sessions can be integrated with the residency schedule without causing any disruption to the existing training program, and faculty or senior residents can be preferably assigned for each session, just like any other postgraduate learning activities (17, 18). For instance, in a retrospective record-based study done among postgraduate residents, where microteaching has been integrated into the residency schedule, it was reported that most teaching skills were satisfactory. Still, students lacked the skills of interaction and summarization of the topic (17).

Before the session, residents should be informed about the goals, structure, and expectations (prepare a short teaching session and target a single and clearly defined learning objective) (16). The microteaching session should be implemented as per the standard norms (like for faculty members), and if possible, it should be video recorded to promote reflection (18). After each such session, constructive feedback should be given, and residents should be encouraged to reflect on their teaching session. Accordingly, real-time improvements should be made (18, 19). Residents should be given time to practice, and then the same cycle is repeated, where residents have incorporated the given feedback (17). There is a possibility that rubrics are developed to grade the performance of residents, and feedback should also be obtained from participating residents on the overall session (19, 20). Teachers and instructors should review the obtained feedback and make improvements in the program for future sessions to benefit residents and improve their teaching skills (19, 20).

Identified challenges and Potential solutions

Organizing microteaching sessions for residents in medical institutions is expected to encounter some challenges, as listed in Table 1 (15-22). The most important concern is finding dedicated time for microteaching sessions within the existing curriculum for postgraduate residents from all specialties (16, 17). However, the effectiveness of such sessions will depend upon the facilitators who are trained in giving constructive feedback and running a microteaching session as per the standards (18). Another primary

concern has been the resistance from residents to participate in microteaching sessions, where they might have anxiety about public speaking or peer feedback (16, 17). Further, the process of developing a consistent and structured assessment tool to measure the performance of residents can also turn out to be a tough ask (19). Finally, there could be lots of administrative and logistical constraints that could interfere with the implementation (19, 20).

This calls for the need to devise a stepwise plan, train facilitators, sensitize residents, and convince administrators to support the initiative to implement the program for all postgraduate residents (Table 1) (15-22). To bridge the scarcity of studies that examine the factors contributing to the self-efficacy and teaching performance of student teachers, a survey was conducted among 272 English-as-a-foreign-language student teachers (15). This study aided in the creation of a theoretical framework which can assist decision-makers in encouraging facilitators and overcoming barriers in microteaching programs (15). In a pilot study based on the findings of three microteaching sessions in India, all participants found the training sessions to be helpful in improving their teaching skills and also in improving their performance in semester examinations (16). In a study to evaluate the five-day resident-as-teacher training programme in the United States, significant improvements were reported in self-reported comfort and confidence with teaching, and peer observation was reported as the most crucial component of the entire training course (21). In the future, there is a definite need for both qualitative and quantitative evaluation of the existing program and for measuring the impact of teaching improvement on patient care and learner educational outcomes, as this can improve the overall quality of the microteaching programs.

Conclusion

In conclusion, microteaching is a structured and practical approach to improve the teaching skills of postgraduate residents, yet it remains underutilized. The process of integrating microteaching into residency programs aligns with the principles of competency-based medical education. However, for effective implementation, institutional administrators must allocate protected time, train faculty in their role as facilitators, and formally recognize teaching in residency assessment.

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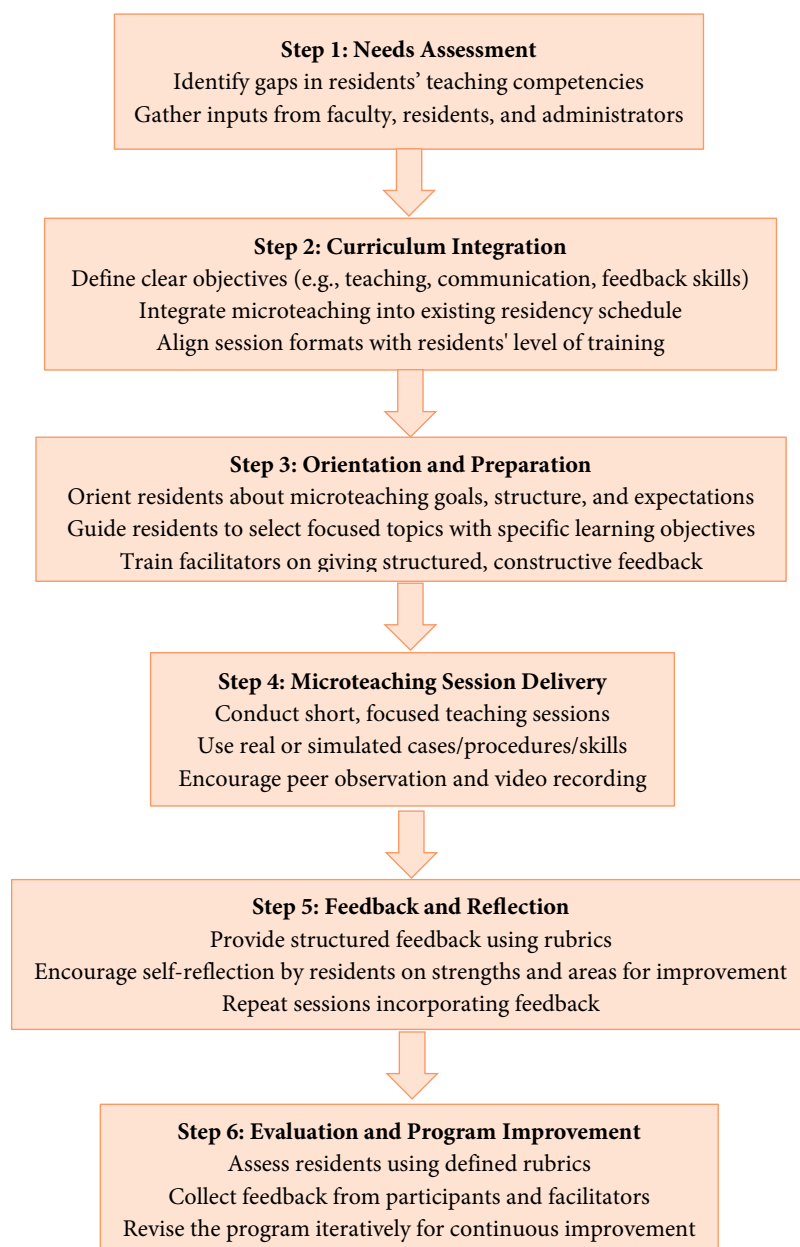


Figure 1. Step-wise plan for microteaching implementation

Table 1. Identified challenges and potential solutions

Identified Challenges	Potential Solutions
Time constraints	Integrate microteaching into existing schedule of postgraduate activities through cross-scheduling to minimize disruption to clinical duties
	Keep the duration of sessions brief (5–10 minutes)
	Explore the possibility of online or asynchronous methods, as it can reduce the need for synchronous in-person sessions
Untrained faculty members	Train faculty members in mentoring in microteaching and feedback delivery to equip them with the necessary skills
	Rope in senior residents to serve as microteaching mentors, reducing the faculty burden
	Refer to online tutorials or invite guest educators to conduct microteaching mentorship remotely

Resistance by residents	Sensitize residents about the benefits of microteaching and how it will help them in their future career
	Begin such sessions in low-stakes sessions, with priority on positive feedback and thereby create a supportive atmosphere
	Encourage residents to self-assess their teaching and received feedback to make the process more rewarding and less stressful
Concerns with assessment and evaluation	Frame rubrics with clear criteria regarding core teaching skills to make evaluations fair
	Use a combination of peer feedback in conjunction with faculty feedback to make the process complete
	Encourage residents to self-assess their teaching and match the same with feedback received from peers and teachers
Administrative and resource constraints	Convince administrators about the benefits of microteaching and how it can help the institution in meeting their vision, including accreditation standards
	Use existing facilities flexibly to organize such sessions without much trouble
	Use mobile phones for recording or simple platforms like Zoom or Google Meet for remote sessions, provided infrastructure, internet stability, patient privacy, and data protection are taken care of