

## Strategies for Improving Clinical Teaching in the Operating Room

Christine L. Mai, MD, MS-HPed and Keith H. Baker, MD, PhD, Massachusetts General Hospital, Boston, MA

- Clinical teaching in the operating room (OR) is critical to training residents and fellows to develop medical knowledge, clinical skills, and sound decision-making to provide safe and effective patient care.
- Challenges around teaching in the OR include time constraints, production pressure, faculty workload, patient care priorities, cognitive overload, environmental distractions, and lack of formal training for faculty.<sup>1</sup>
- Best practices of teaching in the OR include investing appropriate time for clinically relevant teaching, providing formative feedback, creating a psychologically safe and effective learning environment, integrating evidence-based teaching methods, and fostering a culture of continuous improvement (Table 1).<sup>2,3</sup>
- Validated teaching tools such as the “One-Minute Preceptor”<sup>4</sup> can improve clinical teaching. Faculty members can also focus on increasing their use of the distinct strategies in Table 1.

Table 1. Strategies for improving faculty clinical teaching in the OR.

Strategy	Description
Autonomy	Encourage independent decision-making by giving residents opportunities to take the lead on cases under supervision. This builds confidence and prepares them for independent practice.
Reasoning	Foster critical thinking and problem-solving skills by discussing the rationale behind clinical decisions. Engage in Socratic questioning to challenge residents to think deeply and critically. Treat the learner with respect when using the Socratic method.
Contextual learning	Teaching should occur in the context of real cases, making the lessons practical and applicable. This enhances retention and understanding by linking knowledge to hands-on experience.
Evidence-based	Integrate evidence-based practices and the latest research into teaching. Encourage residents to stay up to date with recent studies and apply new findings to their practice.
Prior knowledge	Build on what residents already know by connecting new information to existing knowledge. Assess current understanding before introducing new concepts to tailor teaching to their level.
Specify learning goals	During the pre-op phone call, discuss 2-3 focused learning goals with residents. Focus on these learning goals during the OR cases.
Reflection	Encourage self-assessment and reflection on clinical experiences. Have residents discuss what went well, what didn't, and how they think they can improve.
Properly timed feedback	Provide feedback at times when it can be effectively absorbed and applied. Immediate specific feedback after procedures can be more impactful than delayed or nonspecific comments.
Discussion	Discuss cases using two-way communication rather than a one-way monologue. Ask open-ended questions and engage the learner in discussion.
Flexibility	Adapt teaching methods to the individual needs of each resident. Be prepared to switch approaches if one method isn't effective.
Teach-back	Use the teach-back method which requires residents to explain back procedures or concepts they have learned. This ensures they understand the material and can apply it correctly.
Commitment	Demonstrate dedication to the residents' learning process by active involvement and consistent support. This includes being available for questions, providing resources, and showing enthusiasm for teaching.
Psychological safety	Create a safe learning environment where residents feel comfortable asking questions, making honest mistakes, and expressing their thoughts. This fosters a culture of open communication and active learning.
Equanimity	Maintain your composure, particularly in stressful or high-pressure situations. This sets a positive example for residents to use when they need to manage similar situations.

### References:

1. Haydar B, Baker K, Schwartz AJ, et al. Academic anesthesiologists perceive significant internal barriers to intraoperative teaching in a cross-sectional survey. *J Educ Perioper Med.* 2019; 21(1): E628.
2. Haydar B, Charnin J, Voepel-Lewis T, et al. Resident characterization of better-than- and worse-than-average clinical teaching. *Anesthesiology.* 2014; 120(1):120-8.
3. Wakatsuki S, Tanaka P, Vinagre R, et al. What makes for good anesthesia teaching by faculty in the operating room? The perspective of anesthesiology residents. *Cureus.* 2020;12(7): e2563.
4. Neher JO, Gordon KC, et al. A five-step "microskills" model of clinical teaching. *J Am Board Fam Pract.* 1992;5(4):419-24.