

## Operation Theatres in Medical Students Learning

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### Abstract

Operation theatres play an important role in medical students learning; it is a high pressure clinical setting and offers a unique learning environment at the workplace. Students directly observe the dynamic, stressful clinical settings which has a potential to impart indirect or soft skills to the young learners. Many studies have been done on operation rooms as a teaching environment and 'theme based learning'. However, there is lack of standardisation among studies. This unique learning environment is also influenced by the work-place culture, among different specialities and different institutions. This article explores these various aspects of operating room learning and suggests ways to further improve them.

**Keywords:** Operation theatres; Learning; Theme based learning.

### Introduction

Operation theatres (OT) or Operation rooms (OR) is one of the important place to which an medical student is exposed and can learn important skills for surgical education. Worldwide students attend OT as part of their posting in various surgical specialities e.g. Surgery, Orthopedics, Obstetrics and Gynecology, Emergency and trauma, EYE, ENT etc. OT provides medical undergraduates unique learning environment for work place based learning, it is a dynamic, high stress zone where

students can observe the technical nuances of surgery as well as learn non-technical aspects e.g. team work, communication, decision making etc.<sup>1</sup> This unique environment is challenging for students as it occurs in an unfamiliar surroundings. OT postings and learning is viewed as enjoyable, effective as well as anxiety prone and stressful in some studies.<sup>2</sup> However, students in OT can also be viewed with hostility as hindrance to the workflow, conflict with other staff etc. Too many persons in OT can be a source of infection to the patient, as often these young medical graduates are not aware of the OT discipline and workflow and may inadvertently do or touch things.

This article explores on what factors effect students learning in OT, and methods to optimise their learning. Learning in OT can be effected by many factors like organisational and physical structure, emotions and personality of students and teacher's directions and feedback to students. The key areas can be recognised and optimised to enhance learning and making it enjoyable too for the students.

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## Factors playing key role in learning in OT

### *Organisational Aspects:*

OT's are generally located away from the general hustle of crowd with restricted entry. Students are unfamiliar to this and find it challenging to find OT, getting access to OT changing clothes etc. Sometimes there are not enough dresses for the students and they are denied to enter OT.<sup>9</sup> Very few students get clear instruction about how to enter OT, where to find OT dress and general OT instructions.<sup>8</sup> Often students do not know whom to report, and general OT etiquettes. A brief introduction addressing these issues or even showing a video about this may relieve their anxiety which can be easily done. Once the students learn basic etiquettes of OT they will feel comfortable in OT. With more and more surgery becoming laparoscopic now-a-days it is easy for students to see and learn surgical steps and relevant anatomy. Traditional ENT surgery, pelvic surgery due to their inherent narrow field are difficult to see. Light mounted camera connected to a screen can overcome this problem to some extent.

### *Emotional Aspects:*

OT is a unique learning environment to students with distinctive challenges. Emotions or too much stress in clinical settings can impair students learning, while some amount of stress can increase student learning.

OT exposes many real life situations to students and they learn by visual, tactile, auditory mechanisms. Students learn to 'manage by demands of working environment' and learn to cope with challenges of environmentally charged atmosphere. Bowrey and Kidd and Stone et al. studied students response In OT, and showed that negative feelings were experienced by students like- anxiety, nervousness specially in their first few days in OT. Students also expressed inability to see in OT, intimidation and being ignored by staff. These emotional responses can have a direct effect on their learning and interest in surgical specialities. Attendance is low in OT postings was reported by Ravindra et al.<sup>4</sup>

### *Socio- environmental Factors*

Lyon proposed that students generally prefer consultants who are student-friendly and actively seek them whereas surgeons look for students who can promote themselves.<sup>5</sup> Student-teacher

interaction in OT play a key role in students learning. OT attendance increases if the teacher is students friendly.<sup>4</sup> Friendliness and approachability of staff and surgeons are important factors that affect learning for students.

### *Educational Relevance*

Higher education is driven by outcome; having a clear learning outcome and objectives of learning will give clear understanding to the students of today's generation. Reasons for lack of clarity could be due to lack of proper planning. Often surgeons teach spontaneously without reflecting upon the learning objectives.<sup>6</sup> Students too do not know why they are posted in OT and their learning objectives and it might be over looked by the surgeons too who focus on technical skills. The importance of clinical correlation, acquiring core knowledge and technical skills is highlighted when OT learning is talked.<sup>7</sup> It is equally important and relevant to learn OT etiquette and sterility protocol. Defining a clear learning objective which is known to students and instructor would improve learning.

Students are posted in OT for few hours, a part of time goes in finding the way, changing dress, reaching OT etc. Abd by the time they reach OT significant part of surgery for that case is done and they may not see and understand the complete surgery. Sometimes the posted case in OT is too long or has too much of technical skill and may not be relevant to student at that time, so he/she may lose interest. Having a flexible timing where they can come to OT after the 'routine' posting hours can overcome this problem.

Students pay more attention to what is important for exam; and surgical steps, etiquette are rarely asked in their exams. Including certain sections from OT or surgical exposure in their exams can kindle their interest in OT and surgery.

### *The Surgeon*

Surgeon or surgical educators behaviour in OT is crucial in learning. Student generally value surgeons who has adopt a positive tone and is a role model.<sup>9</sup> In caps and masks often students fail to recognise who the surgeon or instructor is! If the surgeon identifies himself, and encourages the student, acknowledges when critical steps or incidents are occurring, providing a continuous explanation of the surgery and encourages students to ask; he/she is valued as a positive role model.<sup>9</sup> Technique of thinking loudly enforces students to think in similar situations and improve their learning.<sup>10</sup>

## Way Forward

There are many ways to optimise and enhance learning in the operation theatres; following are some suggestions, however every organisation and educator are unique and may devise ways to optimise OT learning for students-

- a. *Orientation or induction to surgical education:* On the first day of postings students can be oriented to the basic OT etiquettes. The expectations from students in OT can be defined. Their emotions regarding OT should be appropriately addressed.
- b. *Physical Orientation to OT:* A lecture or a video can be shown on how to enter OT, where to find OT dresses, where to change etc. This will relieve their anxiety for OT. Appropriate signage's will help them in reaching to the desired place in time. Introduction to OT in-charge will help them in approaching someone when the surgeon is busy with critical steps of surgery
- c. *Learning Objectives:* Learning objective and expectations must be known to students. Some universities also put them in their curricular documents. If the surgeon or the surgical educator briefs them about type of surgery, expected time for surgery, estimated blood loss, necessity of lead gowns etc before the start of procedure students feel comfortable and learn better.<sup>9</sup>
- d. *Feedback:* Feedback is a two-way learning, a constructive feedback by educators and students can enhance learning and has the potential to improve it further. It also helps in better organising the learning session.<sup>11</sup>
- e. *Simulation:* Replication by models or virtual reality models can enhance learning and is being increasingly recognised as a learning tool to enhance skills<sup>12</sup> Paige et al. 2014. They provide a safe learning environment and a student can practice on it many times. However, simulators are costly and not easily available everywhere. But where available it can become an important tool for learning the technical skills. Simulated operation suites with interdisciplinary team members exposes a student to life like situation to learn and master these skills. Though extremely helpful it still cannot replace real OT experience and learning.

## Conclusion

OT provides a unique learning experience however its effects cannot be clearly categorised as it influenced by many emotional factors. Most studies quoted are questionnaire based are influenced by the emotional make of students or learners. Still these studies give a useful insight into factors which influence learning and for ways to improve them. Learning across different surgical specialities is different. Variables which influence learning can be addressed to optimise learning in OT productive, enjoyable and enhance learning.

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