

Surgical Education

# Teaching across the continuum: variations in rankings and valued teaching components between surgery residents and medical students



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## KEYWORDS:

Assessment;  
Faculty;  
Medical student;  
Resident;  
Teaching

## Abstract

**BACKGROUND:** Surgical faculty teach medical students and residents within the same environment; however, each group may require different teaching methods. The aim of this study was to identify teaching components valued by these sets of learners.

**METHODS:** Teaching evaluations for 43 surgical faculty members who received yearly evaluations from students and residents were analyzed. Highest and lowest ranked educators in medical student evaluations were traced to corresponding rankings in resident evaluations. Thematic analysis was conducted on written comments.

**RESULTS:** Educators rated the highest in the medical student group were spread out among the residents' rankings, with several educators being rated the lowest. Similar patterns were observed in reverse for faculty rated highly by residents.

**CONCLUSIONS:** Residents and medical students value faculty teaching using different criteria, with residents more focused on operative autonomy and medical students focused on approachability. Using one group to define best teaching methods is insufficient as learners value different optimal attributes.

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From flipped classrooms<sup>1</sup> to video assessments,<sup>2</sup> educators are evaluating teaching methods to improve cognitive knowledge and procedural skills. At the same time, there is national

attention on eliminating learner mistreatment.<sup>3</sup> Focusing on methods for optimal teaching and learning in the high-stakes environment of the operating room (OR) is an educational imperative for surgical faculty. Analysis of 3rd-year medical student surveys has shown that surgery clerkships have the highest reported rates of mistreatment, attributable to faculty, residents, and support staff.<sup>4</sup> Mistreatment is an important educational concern in that it has been associated with teaching behaviors, more specifically pimping, where the use of provocative questioning methods has been interpreted as both beneficial and detrimental to learning.<sup>5</sup>

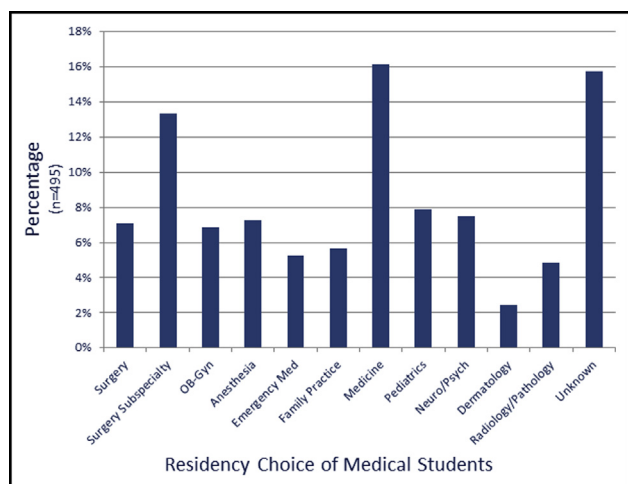
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**Figure 1** Residency choices of medical school students who completed faculty evaluations from 2011 to 2014, in percentages. Respondents were 48.2% male and the mean age was 26 years.

Although there are studies separately exploring teaching of residents and medical students, there are few contributions that consider the reality of the combined and complex effort of teaching learners at different levels.<sup>6</sup> Williams et al<sup>7</sup> demonstrated a high concordance between resident and student evaluations of internal medicine faculty. Others have shown that the type of teaching environment has a significant impact on students' rating of their teachers.<sup>8</sup> Surgeons often spend the most time with learners in the OR. The OR teaching environment is often an arena of higher tension because of multiple factors, such as risk to the patient, teams of allied health professionals, inclusion of learners from novice to proficient levels, and surgeon personality. Surgical faculty will teach residents and medical students within the same operative environment; yet how faculty simultaneously account for different levels of education, technical abilities, and goals of each trainee group is not well understood. This becomes especially important when trying to understand the disparities in the perceptions of residents, medical students, and faculty with respect to intraoperative teaching. For example, learners sought more feedback from faculty during operative educational

experiences, whereas faculty described themselves as providing frequent feedback.<sup>9-12</sup>

Teaching is a professional responsibility. It requires deliberate practice, purposeful implementation, flexibility, and reflection with learners at varying levels all within a complex environment of patient care.<sup>13</sup> Teaching requires more from the educator than medical knowledge and technical expertise. Determining the educational needs of trainees at all levels and aligning those needs with appropriate faculty teaching and supervision is significant to enhancing surgical education. Teaching evaluations are also a critical component of an educator's promotions package in academic medicine.<sup>14</sup> We hypothesize that students and residents will rate the same faculty very differently with regard to teaching effectiveness. The aims of this study were to identify any discrepancies in faculty evaluations between these 2 groups and investigate the teaching components valued by these 2 sets of learners.

## Methods

Ninety-three surgical faculty received teaching evaluations from the medical student body, whereas 88 faculty members received evaluations from the resident body from May 2011 to June 2014 as part of routine rotation feedback. The difference in the number of faculty evaluated by each set of learners was due to different clinical rotation schedules by students and residents. Teaching evaluations completed by students included questions on time spent with students, involvement of students in clinical and technical learning opportunities, approachability, feedback, professionalism to students and patients, and "overall quality of teaching" using a 5-point Likert scale. Residents completed a different survey using a 9-point Likert scale, with categories focused on faculty's academic ability, clinical ability, and resident interaction, including teaching and approachability, and overall assessment. Neither students nor residents were required to complete evaluations of each individual faculty although they were given the opportunity to do so, and as a result, there were variable numbers of faculty evaluations, even over the 3-year period.

**Table 1** Attending factors that predict attending evaluations made by medical school students; noncomprehensive list; n = 45. (scale: 1 = strongly disagree to 5 = strongly agree).

Attending factors	Coeff.	Std. error	t test	P value
States student expectations	.423	.147	2.872	<b>.007</b>
Is clear and organized	.055	.176	.312	.757
Involves student in clinical problem-solving	.588	.139	4.229	<b>.000</b>
Provides direction and feedback	-.583	.116	-5.031	<b>.000</b>
Demonstrates clinical skills and core procedures	.234	.177	1.318	.197
Demonstrates interest in student as a learner	.109	.119	.918	.365
Student feels comfortable asking questions	.337	.106	3.168	<b>.003</b>
Gives adequate time for teaching	.301	.075	4.031	<b>.000</b>

P values less than .05 are in bold.

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