MULTI-RATER FEEDBACK: IMPROVING STUDENTS' READINESS FOR THE OR

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NEW EMPLOYEE/RECENT GRADUATE STUDENT SUCCESS IN THE OPERAT-

ing room depends on many elements, including a complex interaction between the workers and instrumentation (Halverson et al, 2009). There are a number of factors involved in producing exceptional surgical technologists, including, but not limited to, maturity, work history and previous education. Along with individual factors recent graduates bring to the operating room (OR), the preceptors, as well as the clinical sites, can also play an important role, including, but not limited to, job satisfaction, quality assurance and safety (Helmreich & Davies, 1996). Our goal as educators was to take the didactic coursework, which is often presented to students akin to drinking straight from a firehose, and establish systems and approaches to make that "blasting" much more palatable, ultimately resulting in students graduating from a program as equipped as possible to be successful in the OR.

Historically, educators have wrestled with how to best deliver and evaluate educational content to ensure students have the ability to apply, not just recall, the lessons learned (Halpern & Hakel, 2003). For disciplines like surgical technology, where programs are developed with the sole goal of preparing students for a specific position, being competent and able to pass certification exams is a priority. The College of Western Idaho is working to do just this in its Surgical Technology program.

In response to industry concerns relating to student readiness for the increasingly competitive surgical technologist positions (Bell, 2007), and in light of the high-paced and high-pressure work environments, the faculty recognized the need to revisit how surgical technologists

are trained. As noted by Gallagher et al., (2005), "The rapid expansion of minimally invasive surgery (MIS) has demonstrated that the traditional model of "see one, do one, teach one" is not an optimal approach for training surgical skills" (p. 364). Modifying a model from many corporate environments and also used in teaching at Johns Hopkins (Berk, 2009), the faculty moved their program from being a *teach-test-repeat* approach, to a more dynamic and rich learning experience based upon the multi-rater feedback approach.

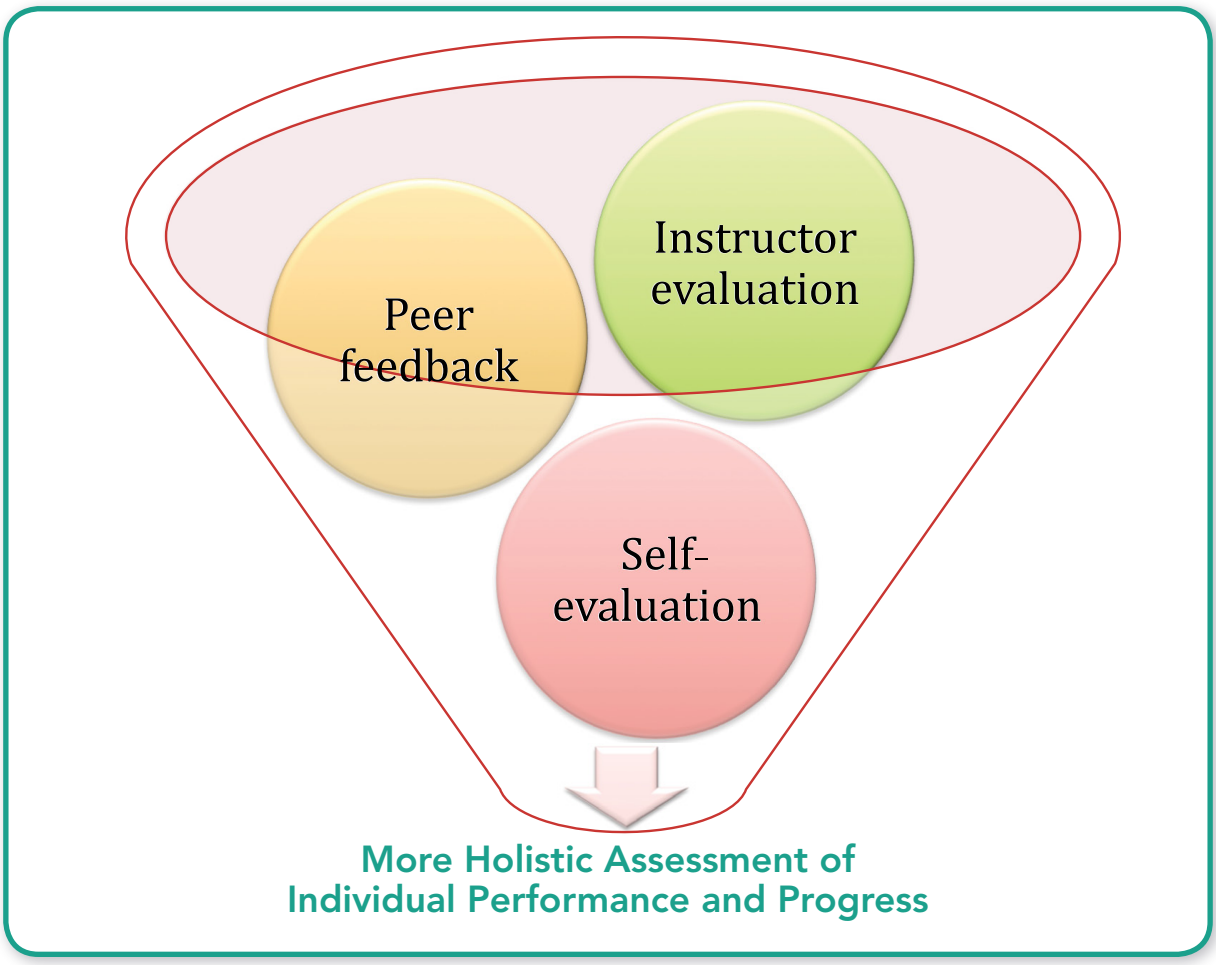
Simply put, multi-rater feedback looks at evaluation processes that are more 360 degrees in nature (soliciting feedback/evaluation/input from a variety of people who have a working relationship with the subject, in this case the student) (McGourty, Dominick, Besterfield-Sacre, Shuman, & Wolfe, 2000). Previously, a student would typically be evaluated only by the instructor—a very one-dimensional weekly assessment approach. By moving to the multi-rater approach, the faculty employ a number of different evaluation strategies as sources of feedback to better and more accurately address individual successes and shortcomings (London & Smither, 1995). The strength of this method is that it allows not just faculty evaluation, but also peer and self-evaluations on a weekly basis. With the goal being "competence," these other sources help provide a more accurate assessment of how the student is meeting the goal (Figure 1). In addition to these evaluative approaches, the faculty strengthens the focus on learning and development by added video recordings (Hegeman, 2015) and purposeful student pairings (Austria, Baraki, & Doig, 2013), specifically pairing stronger students with weaker students to help develop additional skills in mentoring and leadership.

As surgical technologists can attest, the course content received prior to entering the OR came hard and fast all the way up to the national board certification exam. Mock surgical experiences and simulated OR environments have improved the preparation of students for the OR. However, new technologies aside, it is the combination of intelligence *and* a refined clinical skill set that best prepare students for the clinical setting, as well as self-confidence, thick skin and the determination/drive to be successful. The latter are things we attempt to nurture, but they are quite difficult to instill.

Identifying a Need for Improvement

Based on our program's experience in the lab and our feedback from our clinical sites, we know that the occasional student comes to the OR without the confidence and skills needed to competently com-

Figure 1. The Multi-rater Feedback Approach



plete OR tasks, such as sterile preparation techniques. Our prior approach to teaching and learning was rather traditional in nature: teaching the content and then testing for understanding, recall and application. In the skillset areas we used a similar strategy, hoping the student would grasp the bridge between the skills and the theory, i.e., does the student demonstrate sterile techniques *and* does the student comprehend the information surrounding the practice. In too many instances, this wasn't happening. While many students excel at both, far too many students tend to initially excel in only one of the two areas. This prompted our decision to explore a way to help improve our students' abilities in both areas, as well as provide us with a better means to identifying these students earlier and begin intervention/remediation as early as possible.

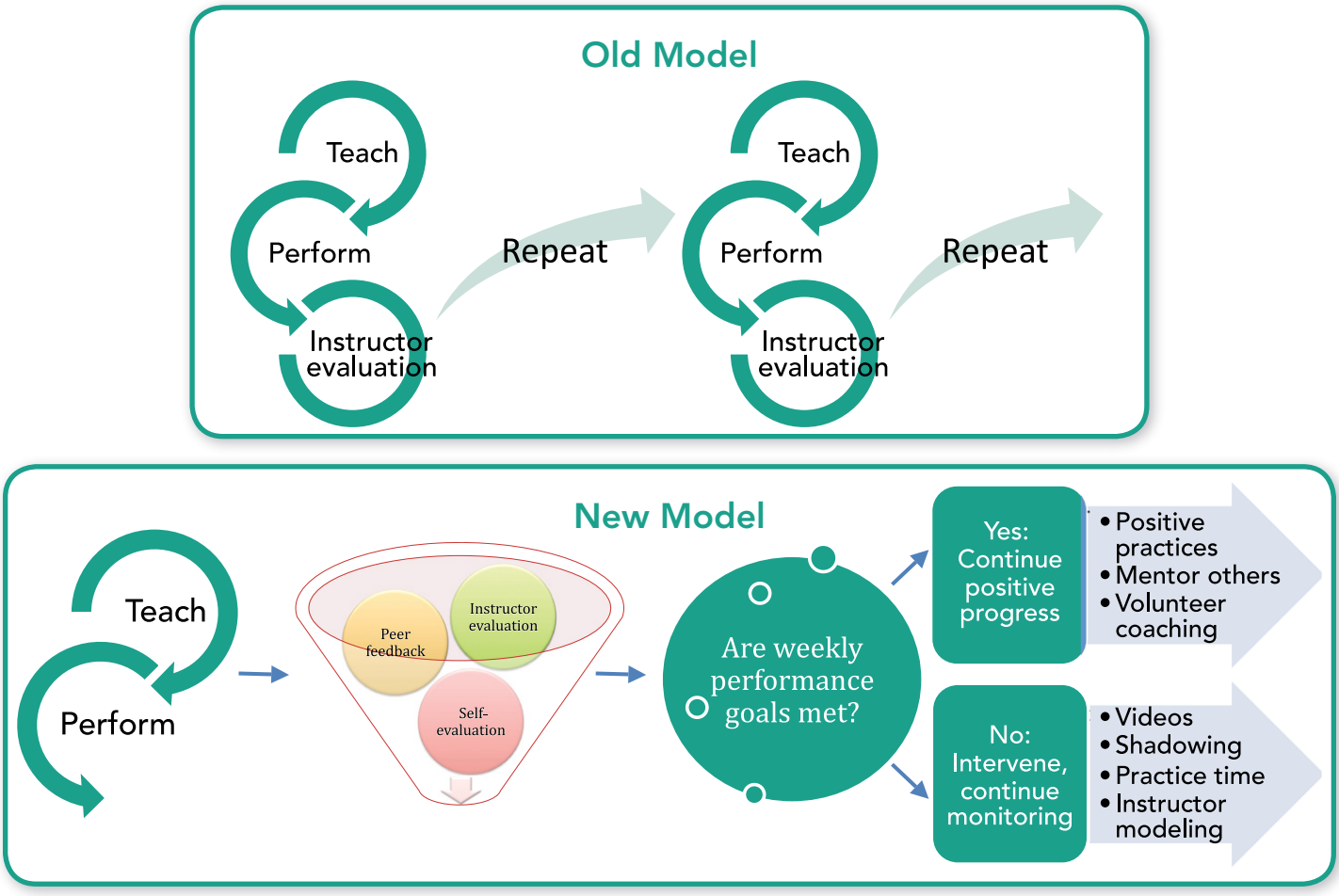
In an attempt to improve the overall competency and proficiency of our students, and help them understand their own weaknesses or limitations, the following multi-feedback system was instituted. Figure 2 demonstrates the former approach to teaching and evaluation, as well as our new multi-feedback model.

As reflected in our prior model, in a week students would only receive weekly clinical evaluations from the instructors. Now with our new model, students receive an enhanced weekly graded clinical evaluation, plus weekly non-graded peer feedback, weekly non-graded self-evaluations, student mentor and leader development opportunities by pairing weaker students with stronger students, and the regular use of video recordings in the clinical setups and mock surgeries. The increase of these formal and informal feedback loops has resulted in earlier detection of problems and more accurate remediation, not to mention these feedback loops have served as confidence boosters among higher achievers because of the added mentoring experiences. Finally, these additions have led to a perceived increase in the accuracy of self-monitoring of performance.

Weekly Graded Clinical Evaluations

Previously, we used the weekly graded evaluations to assess where our students' clinical skills were. Weekly evaluations were and still are given once per week for 10 weeks; however, they are now much more robust, including more detailed feedback concerning skills and execution, as well as an overall comparison to the peer group. The nature of the evaluation changes each week as we add new clinical skills, as well as the peer and self-evaluations. The evaluations are meant to be timely and specific to the student group's progress with the material. They are com-

Figure 2. Comparison of the Old and New Methods of Evaluation



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pleted entirely online using either an in-house learning management platform like Moodle, or an online survey vendor, such as Survey Monkey. The system allows all instructors to share in the management of the information, enabling instructors to have access to instant student performance data, even if the student was previously working with a different instructor.

Every evaluation at the time of evaluation is entered directly into the Web-based system, thus eliminating the need for hardcopies for evaluators. This also reduces the total amount of time per student dedicated to completing the online grading process. Paper copies of every evaluation, however, are shared with the student. Student feedback to this approach has been overwhelmingly positive. The students like knowing exactly where they are clinically and what skills they need to continue to work on. They like knowing how they rate in their peer group, which encourages motivation for them to work on skills that will help prepare them for the OR and ultimately for employment in the hospital.

Weekly Non-Graded Peer Feedback

Previously, peer feedback had been used only periodically, as it was marginally helpful. This was primarily due to the fact that when students were providing their feedback directly to the other students, the peer pressure outweighed the honesty and accuracy of the feedback. We have reinstated the peer feedback; however, the reviewee never sees the actual feedback. Instead, the feedback is submitted directly to the instructor to provide additional information and insight concerning the performance.

Prior to beginning the peer feedback process, the instructors provide some initial training on the value and importance of the feedback, as well as how to provide feedback professionally and appropriately (Gielen, Peeters, Dochy, Onghena, & Struyven, 2010). Additionally, this peer feedback process begins to instill a level of quality assurance and even peer support/camaraderie—two skills that are invaluable in the OR. These peer feedback opportunities have become tremendously valuable to our classroom, as they have also prompted students to have greater concern for understanding the concepts themselves.

Weekly Self-Evaluations

The addition of the weekly self-evaluation has enhanced learning, and it has served as a path to early detection of performance problems (London & Smither, 1995). For strong students who are excelling in the content, it serves as a tool to help them continue to build their confidence in their work. However, for students who are struggling, the self-evaluations have (unexpectedly) illuminated the difference between how students view/evaluate themselves versus the evaluation and feedback from peers and the instructors. For example, this approach has been extremely helpful in identifying the students who believe they are doing everything right, when they are not. The self-evaluation has been a valuable tool, along with the use of the video recordings, to help the instructor provide much earlier intervention to address these performance problems. In fact, we believe that this approach has minimized the hard feelings that some students have held previously toward their instructors when they felt that the instructors were, in their opinion, *unjustifiably* picking on them.

Pairing Weaker Students With Stronger Students

Students have always worked in groups, but we started purposely pairing weaker students with our stronger students. It happened somewhat naturally, because we always seem to have some strong students with natural leadership skills who just jumped right into the role. Once we identify students who are struggling because they are scoring less than 75 percent on their clinical evaluations, we have them work on improving those skills during free time in the lab in a designated area with students who have mastered that particular skill. This is a real win-win opportunity because it helps struggling students get extra practice and feedback, and it helps stronger students continue to improve their mentoring and leadership skills. In some instances, students tend to listen to their peers more than they listen to their instructors. This often results in the struggling student having an "aha" moment. We don't quite know why this happens, but it is a victory for the students and the instructor.

Videos

Previously, videos were used on limited occasions. After re-evaluating our prior video use and exploring how other academic programs have used videos, we concluded that regular video recordings and analysis could be valuable in assisting students who understand the classroom work, but have problems executing the clinical skills (Hill, Hooper, & Wahl, 2000). The video recordings quickly proved helpful. In one situation we had a student who possessed all the classroom knowledge, but she struggled with the clinical skill part; her body was not doing what her mind wanted it to. This was extremely difficult for her as she quickly became frustrated and discouraged. She was not able to accurately reflect on where she was making the mistakes. Instead, in her mind, she was a failure.

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The videos offered her a different point of view. She was able to watch her own performance and critique the areas where she was making the mistakes. She was learning how to recognize her errors, as well as identify the areas for improvement, without any assistance from her instructors. The videos helped her begin to visualize herself doing the correct motions and activities in her mind before it was her turn to be evaluated. She even told us that she would rehearse the actions in her head before she went to sleep, when she went to the gym and at various other times throughout the week before she entered her next graded evaluation. By using this technique, her performance continued to improve throughout the semester. This was a student who would not have been prepared to go to the OR under our previous model; she would have likely failed out of the program. However, under our current model, she became our most-improved student of the year and is successfully working in the OR.

The "Other" Things

Sometimes the course content and the clinical skills are solid, but the student possesses some "other" behaviors that might sabotage his or her success, such as unmanaged nerves and anxiety, poor stress management, or a lack of attention to decorum or professionalism, i.e., clothing/attire, language use, etc. To help students to account for and address these issues we have also included this aspect as part of the clinical grade. If any of these are areas of concern for a student, then we work on a variety of ways for them to calm themselves and get them to a point where they can at least maintain composure and *appear* confident.

Additionally, we role play as surgeons in our mock surgeries and let them know how their behavior would be perceived, as well as how their anxiety would affect the OR. We have worked with them on visualization tactics before a case, as well as meditations, counting, talking to themselves by way of their "inside voice," and any other techniques we have seen that help people calm their nerves in stressful situations. Finally, we are always on the watch for TED Talks and other videos aimed at handling stressful situations to help minimize tunnel vision and increase their situational awareness.

As any educator or manager can attest, it is becoming extremely difficult to fail students in a clinical setting or fire employees without the proper documentation for fear of litigation. While student success is our goal and priority, we also know that surgical technology is not a profession for just anyone. There are criteria one must meet to be able to perform the job description, and for very good reason. Implementing this program has not only enhanced our students' success in the program, but it has increased our ability to more accurately document their performance progress.

The surgical technologist's motto is "Aeger Primo," which is Latin for "patient first." While the OR is not for everyone, we want all our students to be entering the workplace with an increasing level of competence.

Adult learners are subject to numerous challenges when it comes to learning and career preparation (Compton, Cox, & Laanan, 2006). Such stresses can be especially detrimental when added to the already high-stress clinical demands surgical technology students will face. However, our goal as educators is to continue to improve the educational environment with the end goal of increasing student competency in the OR. Aeger Primo! From this we cannot falter.

As surgical technologist educators, we have to make sure that we would feel comfortable having our students work on our loved ones. That is the standard we keep in our mind when preparing our students for the OR. Tech

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