“Crossing the quality chasm” in cardiothoracic surgical education

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Central Message

A widening gap has developed between threats to our educational system and emerging modern methods of education and assessment. We need high-quality educational research to address this gap.

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A perfect storm has arisen concerning cardiothoracic surgical education. Threats to our long-standing model of surgical education, a modified apprenticeship, are occurring both internally and externally. Sicker patients, more competition for time (both the trainee and the trainer's), greater scrutiny on outcomes, and rapidly expanding technology all erode the effectiveness of our principal instructional approach. Not only will this erosion continue but also the speed of erosion, especially with the insertion of new technology, will only increase. Unfortunately, the threats continue after training. Like our instructional approach, our approach to assessment and post-training instruction is threatened. In addition to the previous threats, there is also greater pressure by patients, payers, and the government to improve the accountability of our educational systems and the maintenance of our skills.

In parallel to the rise of these impediments, there has been a concurrent expansion in our understanding of how people learn, how we teach, and how we assess knowledge. Some notable developments include the rise of the internet, video recording, virtual reality, simulation, and computer-aided assessment tools. Thus, we find ourselves at a crossroads. We have clear and unrelenting threats to our entire educational system and contemporaneously new and untested tools with which to address those threats. Needed now are investigators to digest the challenges into manageable questions, thoughtfully apply the new tools, meticulously analyze the results, present the work, openly discuss the conclusions, and finally reflect and implement what works best. In short, we need scholarly work and lots of it.

Dr Antonoff and colleagues¹ do a wonderful job of highlighting the breadth of opportunities available to investigators. They provide an outline of some of the steps used in any research, including the behavioral sciences. They also begin to expose some of the major differences between the behavioral sciences and the quantitative approaches we are accustomed to in medicine and science. This unfamiliarity with behavioral science and the challenges it

presents when conducting research are probably the major factors limiting its acceptance as a successful niche for a young investigator. This lack of familiarity is a barrier not only while performing the research but also affects the quality of the peer review and promotion and tenure process.

Groups are slowly addressing these latter 2 issues (peer review and promotion). All our professional journals have astutely entrenched educational research into their content. They are simultaneously working to elevate the level of peer review. Promotion and tenure committees are likewise paying more attention to this area of scholarship, although pockets of “resistance” certainly remain.

Alas, while Dr Antonoff and colleagues¹ work is informative, it will not address an investigator's unfamiliarity with behavioral science research. Like any other scientific investigation, this discipline requires a base of knowledge to produce quality work. My one final piece of advice to add to the list generated by the authors is this: Find an expert in the field, and collaborate with him or her. Partner throughout the process, and both of you will benefit. Most of all, the quality of the work will improve immensely.

Reference

1. Antonoff MB, Nguyen S, Nguyen TC, Odell DO. Conducting high-quality research in cardiothoracic surgical education: recommendations from the thoracic education cooperative group. *J Thorac Cardiovasc Surg.* 2019;157:820-7.