To the Editors:

We thank Smith and colleagues for their positive comments regarding our study. We certainly endorse the development of training curricula that are based upon a sound evidence base and an understanding of the processes that underpin skill acquisition. Indeed, we have been working with clinicians for a number of years to apply knowledge derived primarily from sports psychology and human movement science to the acquisition and performance of laparoscopic skills. Although the apprenticeship model may have served surgical training well, there is increasing recognition that both a good understanding of skill acquisition processes and an appreciation of the influence of stress on technical performance are important when designing effective training. We also agree with the authors that “throwing more money” at the problem of training (eg, high-fidelity, virtual-reality simulators) is not the only answer—especially if there is no integrated, evidence-based strategy to guide their adoption.

We note that the authors raised concerns about our use of the phrase “cheating experience.” Our use of this linguistic “eye candy” may or may not trivialize the importance of the findings, but given that we are now engaged in a positive dialogue about skill acquisition for surgery, the eye candy appears to have served its purpose: attention has been drawn to the article and to the field of inquiry in general. The title is more than just provocative, however, because our research shows that trainees can achieve proficient levels of performance without necessarily completing a criteria-based number of repetitions as part of a rigid training curriculum. Instead, they can expedite or “cheat” the learning curve to achieve proficiency more quickly. Specifically, trainees in our study did not waste time acquiring an expert-like visuo-motor gaze strategy by gaining experience from trial and error over many trials (as most experts do), but instead were helped to apply an expert-like visuo-motor gaze strategy from the outset of learning—effectively cheating experience.

Clearly, training in technical skills is only a small part of all that constitutes surgical training, so we acknowledge the limitations of gaze training. However, reaching proficiency earlier in the learning of basic technical skills affords the trainee more time to develop complex (and arguably more important) judgment and decision-making skills. Indeed, research in skill acquisition has shown that complex decision making is better during motor performance when the motor skills have been acquired implicitly, with few demands on working memory. Such gains may be particularly important in the current medical education climate, where legislation (eg, the European Working Time Directive) limits the time available for training. Making the best use of this time by augmenting the learning process is one way to “cheat” experience.

References