

Game-Based Assessments Summary Report

Presenter: Kristen DiCerbo, PhD
Principal Research Scientist
Pearson

Background

What makes video-games so popular? They reward players when they have mastered required content. They engage the players by making them interactive and having incentives that reward mastery of more complex activities. In the past decade, researchers have begun exploring how games can be used to assess a learner's progress, as each move can be seen as a data point rich with information. Gaming is already making its way into K-12 educational assessments, and now researchers are beginning to consider possible applications in the world of professional certification and licensure.

Currently, gaming plays no role in the initial certification examination, the MOC Part 3 examination, or any other part of the ABP's assessment program. And yet, gaming may represent an opportunity for the ABP to develop an assessment that evaluates higher levels of thinking that more closely mimic how pediatricians approach clinical problems at the bedside. In contrast to straight recall of facts, the ABP could design clinical scenarios that force examinees to select what additional information they might need to solve a clinical problem and/or management options. Both the process of an examinee's clinical approach and the type of information needed could be scored. In order to incorporate the elements of gaming, however, the ABP would have to make a substantial philosophical and financial commitment to ensure its success.

Key Points from Presentation

Dr. Kristen DiCerbo discussed how gaming is deeply rooted in evidence-centered design. It is critical to understand the learner model, what you want the learner to know, what you want to measure, and how to collect evidence about the learner relative to the construct being measured. The choices a person makes within a game become the evidence used to determine the proficiency (i.e., location on the construct of interest). New scoring models to combine all the evidence to make proficiency claims are needed. One such model is Measurement Decision Theory.

Dr. DiCerbo acknowledged that there are many types and purposes for assessment, and games do not suit all of them. She also noted that there is potential for more construct irrelevant variance within games. Overall, she felt they were good at getting at the “deep dive” of information instead of the “breadth” information.

Key Points from Breakout Session

Discussions from the breakout session concluded that gaming would be advantageous in certain areas such as:

- Creating real-life patient scenarios as the basis of test questions about clinical situations
- Integrating gaming into the current Decision Skills component of Part 2 to make it more robust

- Testing the process of a clinical approach as well as the final answer
- Adopting team-based activities with multiple players representing various components of the health care team
- Identifying opportunities for local system changes
- Evaluating analytical tasks and critical thinking
- Leveraging a diplomate's sense of competition to serve as a learning experience to tackle clinical problems more effectively.
- Providing instant feedback and making the assessment fun

In addition to having to start from scratch since no work has yet been done in this area, the ABP would also have to consider other notable disadvantages such as:

- Standardization of responses
- Scalability
- Cost (both start-up and maintenance)
- Reliability and validity of scoring if used for a high stakes examination
- Unknown discrimination between competent and less than competent pediatricians

Conclusions

The breakout group supported the development of game-based assessment over the next five years in MOC, particularly as part of Part 2. They did not support the development for the initial certification examination. However, during the full group discussion, there was less enthusiasm for the ABP pushing forward with gaming, particularly for MOC Part 3 or initial certification.

The difference between the points of view expressed by the breakout group and the general audience makes it unlikely that the ABP can invest meaningfully in gaming in the next few years. Much of this is due to competing priorities at the ABP and the relative newness of gaming in the assessment industry, particularly for high-stakes testing. However, gaming is innovative and offers the potential to more closely resemble how pediatricians manage clinical information at the bedside. As such, the ABP may first opt to undertake a pilot project with gaming in a lower-stakes, more formative environment such as MOC Part 2.