Stealth Assessment in Games: Why, What, and How

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ABSTRACT

You can discover more about a person in an hour of play than in a year of conversation (Plato). For the past 6-7 years, I have been examining ways to leverage good video games to assess and support important student competencies, especially those that are not optimally measured by traditional assessment formats. The term "stealth assessment" refers to the process of embedding assessments deeply and invisibly into the gaming environment. Though this approach produces ample real-time data on a player's interactions within the game environment and preserves player engagement, a primary challenge for using stealth assessment in games is taking this stream of data and making valid inferences about players' competencies that can be examined at various points in time (to see growth), and also at various grain sizes (for diagnostic purposes). In this talk, I will present recent work related to creating and embedding three stealth assessments--for creativity, conscientiousness, and qualitative physics understanding--into Newton's Playground, a game we developed that emphasizes non-linear gameplay and puzzle-solving in a 2D physics simulation environment. I will begin by framing the topic in terms of why this type of research is sorely needed in education, then generally describe the stealth assessment approach, and finally provide some concrete examples of how to do it and how well it works regarding validity issues, learning, and enjoyment from a recent research study.

SHORT BIO

Valerie Shute is the Mack & Effie Campbell Tyner Endowed Professor in Education in the Department of Educational Psychology and Learning Systems at Florida State University. Before coming to FSU in 2007, she was a principal research scientist at Educational Testing Service where she was involved with basic and applied research projects related to assessment, cognitive diagnosis, and learning from advanced instructional systems. Her general research interests hover around the design, development, and evaluation of advanced systems to support learning--particularly related to 21st century competencies. An example of current research involves using immersive games with stealth assessment to support learning—of cognitive and non-cognitive knowledge, skills, and dispositions. Her research has resulted in numerous grants, journal articles, chapters in edited books, a patent, and several recent books such as *Innovative assessment for the 21st century: Supporting educational needs* (Shute & Becker, 2010) and *Measuring and supporting learning in games: Stealth assessment* (Shute & Ventura, 2013).