

# Gaming Bloom's: De/Reconstructing the Taxonomy for Game-Based Learning

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**Abstract:** This poster bridges the discourses of K-12 educators and game-based learning researchers by deconstructing, then reconstructing, Bloom's Taxonomy. Here we reimagine this influential educational model, accounting for the practices evident in game-based learning. The poster will articulate and visually represent a deconstructed version of the Taxonomy. It will then present a reconstructed version, illustrating how discourses from two disparate fields come together in this new theory for game-based learning.

## Rationale

As videogame designers and researchers who advocate for bringing games and their learning principles to bear on curriculum and instruction in formal school environments, we often face barriers and resistance to these ideas (Groff, 2012). These obstacles come in the form of concerns about how videogames can be used to meet the content standards guiding instruction, such as the Common Core State Standards (NGO & CCSO, 2010), and the increasing pressures that classroom teachers face in light of high-stakes assessment and teacher evaluation. As we seek to find some common ground among classroom teachers, game designers, and educational scholars, it becomes important to find connections between the theories that inform the work in each field. This poster addresses this aim by proposing a model of game-based learning derived from the influential Bloom's Taxonomy of educational objectives (Anderson et al, 2001; Bloom et al, 1956).

## Theories Informing this Model

The idea presented in this poster represents an attempt to connect the theory of learning represented in the revised Bloom's Taxonomy (Anderson, et al., 2001) with what we know about games and learning (Gee, 2003, 2004; Squire, 2011).

## Bloom's Taxonomy

For more than 50 years, Bloom's Taxonomy (Bloom et al, 1956) has impacted educational practice by structuring educational objectives and assessments around the following categories within the cognitive domain: knowledge, comprehension, application, analysis, synthesis, and application. In 2001, Anderson and colleagues revised the Taxonomy to reflect changes in educational research and theory. The revised Taxonomy remains a hierarchical model of cognition, moving from simple to more complex objectives as it moves from *remembering* to *creating* (See Figure 1).



Figure 1: Visualizing the Revised Bloom's Taxonomy.

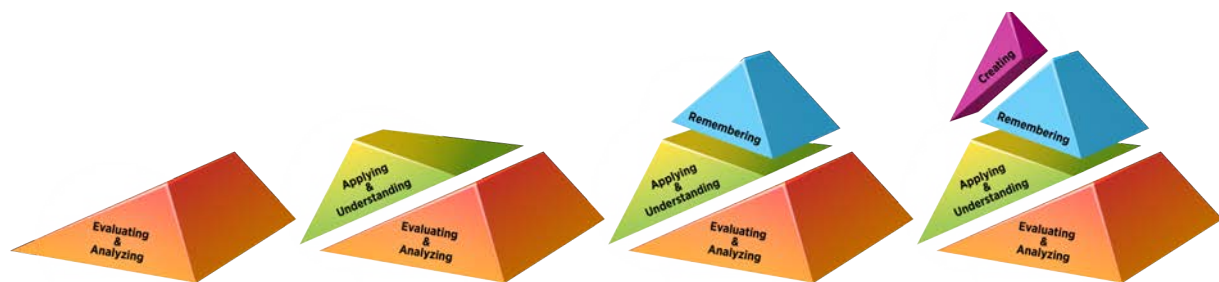
## Game-Based Learning

Gee's (2003) seminal work still guides the field of game-based learning. Gee found that well-designed videogames immerse players in challenging, yet plausible, learning environments and provide necessary supports for player success. Videogames provide "on-demand" and "just-in-time" information and encourage players to test out theo-

ries in a low-risk environment (Gee, 2003). Unlike the learning situations most students experience in classrooms, videogames engage learners in motivating simulations that allow multiple forms and routes to legitimate participation (Gee, 2004; Squire, 2011). In many cases, learning continues beyond the game in “affinity spaces” (Gee, 2004) where players connect around their shared interest.

## Bloom’s Taxonomy De/Reconstructed for Game-Based Learning

While presenting the potential of videogames to educators (Van Voorhis & Lammers, 2013), we began deconstructing Bloom’s influential taxonomy to account for the types of learning experiences available in videogames. In particular, we recognize that videogames ask players to learn by doing, with game tasks immediately tapping into the higher cognitive levels of analyzing and evaluating. As players continue through the various levels, they apply knowledge learned in context and develop increased understanding of the game’s objectives and mechanics. Additionally, players gain content knowledge using in-game resources and information available within the surrounding affinity space. As players become more skilled and engaged, they may also contribute to the game and its affinity space by creating user-generated content. Therefore, we propose reconstructing the Taxonomy to reflect these game-based learning practices (see Figure 2).



**Figure 2: Bloom’s Taxonomy Reconstructed for Game-Based Learning**

In this poster, we demonstrate the model’s evolution and illustrate how it bridges educator and game-based learning discourses. This presentation is our next step in developing a model designed to represent the potential of games for learning while speaking to the concerns and interests of both educators and gamers.

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