

An Inside Look at Getting and Using Games in Classrooms

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Abstract: The use of games in the classroom has gained attention and momentum in recent years. Despite the growing understanding of the value of games, its use has yet to become a mainstream approach of teaching and learning. There remain a number of barriers to get games into the classroom. Through this panel, we would like to share positive approaches to using games to enhance student learning, as well as to discuss strategies to overcome barriers. This panel will also address practical and logistical solutions to encourage games in education to become ubiquitous, as well as ideas to spread best practices through teacher communities.

Teachers Who Are Using Games

In 2012, the Joan Ganz Cooney Center at Sesame Workshop published results of a study about games in the classroom. In it, 500 participating K-8 teachers were asked questions about game-based learning knowledge, integration, and comfort. About 12% of the respondents reported that they had received training about digital games during pre-service training in college (Millstone, 2012). Most had learned about learning games informally from colleagues, on social media, or in teachers' journals—not in a formal setting (Millstone, 2012).

Two years later, in the fall of 2014, the Cooney Center assessed the current impact of the game-based learning. The report, titled *Level Up Learning: A National Survey on Teaching with Digital Games*, surveyed about 700 K-8 teachers. The report found that 82% of surveyed teachers were self-described game players; and 78 percent of that group teaches with games (Takeuchi & Vaala, 2014). The report next compared game-using teachers to non-game-using teachers. 55% of teachers who reported that they did not play games in their free time did state that they used games in their teaching (Takeuchi & Vaala, 2014).

Lowering Barriers to Game-Based Learning Adoption

It can seem confusing to find an effective and engaging digital game to bring into a classroom. There is no ubiquitous model to follow. While Apple's App Store and Android apps on Google Play offer digital distributions, the categories of content can seem overwhelming. For example, the App Store has many gaming categories ranging from role-playing to strategy to trivia. A search for "math games" listed flashcard apps right next to the innovative titles. To a non-gamer teacher, a content-driven experience seems more appropriate, when in fact better options exist. Lowering a few barriers, such as BrainPOP's GameUp platform, which features single logins, easy-to-use teacher dashboards, as well as teacher training, may be the simple solutions required to further game-based learning initiatives.

Increasing Teacher Literacy of What "Good" Games Are

Textbooks, social media, and educational websites persist in referring to rote quizzes, Bingo, and trivia—activities that do not promote higher-order thinking—as games. Dan White, co-founder of Filament Games, and Erin Hoffman, Lead Designer for GlassLab explained the confusion, to Matthew Farber in the book *Gamify Your Classroom*. White pointed out a "literacy gap with teachers who cannot discriminate between the 'drill and kill' and quality gameplay delivery" (Farber, 2015, p. 21). Hoffman remarked on the number of obstacles, explaining several questions to Farber, "What competency should you be teaching? What standard? How are you going to get it to them? How is the school going to find out or buy the product? Who are the gatekeepers that will let you into it?" (Farber, 2015, p. 22). While there have been innovative games brought to the educational market in the past few years, sustainability is an emerging obstacle. In other words, how can a teacher use games when there are still relatively few "good" educational products available? The panel will analyze steps to take in teacher communities of practice to explain where games fit into classrooms. The panel will also discuss the role of communities of practice, which is where many classroom teachers—the ultimate gatekeeper of student learning—learn about best practices.

Best Practices in Assessing Play

Grading how a child plays a game is a slippery slope, potentially affecting creativity and divergent problem solving. Assessments differ for tabletop games. At Quest to Learn, the game-based public school in New York City, teachers give students a piece of paper with a picture of a frozen game state and ask, “What would you do in this scenario? What would each player do in this scenario? Explain your reasoning.” Here the teacher tasks the student to reflect on decision-making, as well as taught content skills (Farber, 2015). Solutions are also emerging for digital game. For example, BrainPOP’s GameUp and the GlassLab platform model, features original and third party games that are accessible with a single user login. Games are vetted for classroom use, provide real-time analytics on student performance, and include lesson plan ideas. However, there is no messaging about how teachers should act on the formative data aggregated on game play. This panel will review experiments in playful assessments and best practices, including the use of BrainPOP’s SnapThought Reflection Tool, as well as hand-written field journal notes that engage students in contemplating decisions made during play.

Moving from Gamification Mechanics to Core Mechanics

Gamification mechanics, such as points, badges, and leaderboards, are increasingly used in education. Gamification, however, has more to do with feedback than play. A game’s core mechanics are different, pertaining to the actions of play, like trading, voting, arguing, turn-taking, and guessing (Trombley, 2014). A game’s core mechanics can be defined as “the essential play activity performed again and again in a game” (Salen & Zimmerman, 2003, p. 316). Core mechanics draw players into the “magic circle”—the interconnected system where play happens (Farber, 2015, p. 32).

Implementing game mechanics, with aligned learning goals, can make learning more engaging. In practice, lessons should involve a game-like core mechanic. According to Institute of Play game designer Brendan Trombley, “focusing on the relationship between core mechanics and learning, we can estimate the effectiveness of a learning game by identifying the linkages between them” (2014). Using core mechanics with existing lesson and projects makes a project and activity less like “chocolate-covered broccoli” and more game-like (Trombley, 2014; Farber, 2015, p. 32). The core mechanic of persuading and voting clearly teaches concepts about democracy more effectively than lectures and PowerPoints.

Promoting Game-Based Learning in Schools

In 2014, MindShift published the [Guide to Digital Games and Learning](#). The guide takes a practical look at how game-based learning is being (and can be) incorporated in a number of settings. The document explores the pedagogical foundations and assessment strategies found in game-based learning environments. Playing digital games with a large class in the constraints of a school period presents logistical challenges. What’s more, many tabletop games are limited to small numbers of players. Cost presents another obstacle; it is often not feasible to have several sets or licenses of the same game. One solution is to take a project-based learning (PBL) approach and create centers or stations around the classroom, one of which involves a tabletop or digital game. Cooperative and project-based learning is already more pervasive than game-based learning. Games can fit in this setting, supporting curriculum, not being the focal point of instruction. Games situated in a PBL setting with learning centers can connect content delivered in other modalities.

Participatory Learning

Games lend themselves well to meeting our students where they are. Providing opportunities to learn in their world empowers students and allows them to take charge of the learning. A prime example of this has been the use of *Minecraft* in classrooms. Educators have used *Minecraft* in numerous ways to enhance learning opportunities. Additionally, student choice in learning allows students to take demonstrate their learning in a manner that is relevant to them. Games often serve this purpose in a powerful way. Ideas are exchanged on social media and in online communities.

Leveling up in a game is similar to how students advance through the zone of proximal development (ZPD), as well as how informal learning starts as limited peripheral participation (LPP) and moves to mastery learning (Vygotsky, 1997; Lave & Wenger, 1991). This is just one of the commonalities that exist in teaching and game design. The iterative process of co-design is another. Teachers build lessons on higher order action verbs based on Bloom’s Taxonomy (Marzano & Kendall, 2007). Similarly, games are designed with action verbs. In *Gamify Your Classroom*, Farber interviewed Jim Gee about the “design grammar” of game mechanics. Gee stated, “It’s not a matter of picking the perfect mechanics. It’s [about getting] good marriages between the mechanic and the problem solving set.” (Farber, 2015, p. 33). The panelists see an opportunity for bridging best practices from game design to teaching and learning design.

One collaborative space of note is #EdTechBridge. One of BrainPOP's researchers, Katya Hott, teamed up in the venture with panelist Steve Isaacs, a video game design teacher. The partnership began at SWSXedu (South by Southwest Education, the annual conference in Austin, Texas). The concept was to create a common language between developers and educators. The result is a weekly Twitter chat. Another emerging space is the Games4Ed pilot groups, to which both Farber and Isaacs belong. There were several meetings this year which brought together teachers, developers, as well as support from the US Department of Education's Office of Educational Technology.

The Panelists

Steve Isaacs teaches Video Game Design and Development at William Annin Middle School in Basking Ridge, New Jersey. In addition, Isaacs has developed online versions of the course for The Virtual High School Collaborative and The Idaho Digital Learning Academy. Isaacs is a strong advocate for game-based learning and provides students with a quest-based learning environment that provides student choice in the selected learning pathway. He has been presenting on the national level on game-based learning, game design and development, empowering students through choice in learning, learning from failure, and other related topics. Isaacs is the co-founder of #EdTechBridge, a Twitter chat and online community focused on bringing EdTech developers, educators, students, and researchers together to collaborate in order to create better EdTech products for learning.

Matthew Farber teaches Social Studies at Valleyview Middle School, in Denville, New Jersey. He is a blogger for Edutopia and KQED/MindShift, a member of the GlassLab Teacher Network, and has playtested for the Institute of Play, E-Line Media, and BrainPOP. Farber is a past recipient of a Geraldine R. Dodge Teacher Fellowship, which sent him on an Earthwatch expedition, and the North Jersey Director for the New Jersey Council of the Social Studies. Farber is an adjunct instructor for the New Jersey City University (NJCU) Educational Technology Department, where he is currently a Doctoral Candidate in Educational Technology Leadership. His book, *Gamify Your Classroom: A Field Guide to Game-Based Learning*, was published in 2015 from Peter Lang Academic's New Literacies and Digital Epistemologies series. It is a survey of best practices aggregated from interviews with game designers, developers, teachers, academics, and other experts-in-the-field.

Jessica Millstone is the Director of Engagement at BrainPOP, where she works on bridging games-based learning initiatives between BrainPOP's GameUp and its many game and school partners. Prior to joining BrainPOP, Jessica was the inaugural Education Fellow on the Games and Learning Publishing Council at the Joan Ganz Cooney Center, a research and innovation lab at Sesame Workshop, where she investigated and produced a video case study series on the practice of using digital games in the elementary and middle school classroom. You can find her on Twitter at @j_millstone.

Seann Dikkers is an Assistant Professor in Educational Studies at Ohio University. Formerly, Seann served fourteen years as a middle school teacher, high school principal, and education consultant. Now he researches, writes, and shares the strategies for technology integration into schools and studies exemplary teaching with new media as the founder and director of Gaming Matter. His books include *Real-Time Research*, *Mobile Media Learning*, and the forthcoming *TeacherCraft: Minecraft in the Classroom*. Currently Seann is playing *Clash of Clans*, *MC*, *Little Alchemy*, and *Hearthstone*.

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