



Washington State Association for Supervision and Curriculum Development

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How Does Game Based Learning Work?

Game based learning is a powerful instructional strategy that leverages student familiarity with and enthusiasm for games and combines it with proven instructional strategies.

The prime benefit of game based learning is in motivating students to engage with challenging learning tasks. The mechanism has not been fully researched but it is likely rooted in the fact that play is an innate drive for humans. Games have been present in every human culture throughout history. In fact, it is arguable that it is built into our biology with evidence of play in other mammals. Student interest in games can be maximized by understanding the interplay between games and motivation.

Daniel Pink’s thinking about motivation, based on the research of Deci and Ryan, says that once a person’s basic physical needs are met, people are motivated by the need for autonomy, mastery, and meaning. Game based learning is a powerful way to incorporate these needs into instruction.

The best games provide players meaningful choices that determine their success. The game Chutes and Ladders for example quickly becomes tedious because success relies solely on the randomness of a die roll. The game Risk on the other hand has die rolling at the root of its mechanics but players make decisions on where to move their pieces weighed against the likelihood of success based on die rolling. Likewise, instruction that insist on compliance with a set method or strategy do not appeal to the human need for autonomy. An instructional game that allows for students exploring multiple strategies for reaching an understanding of what works and also what does not work through their own strategies rooted in their own understandings and skills is powerful. While this idea is incorporated into many instructional strategies, a game based approach builds in an implicit mechanism for this and can give students freedom to explore at their own differentiation, instead of a teacher attempting to plan for every differentiation.

The best games give players multiple paths towards mastery. The classic Super Mario Bros. video game highlights how games can start with easy levels that allow players mastery of the basic skills of the game. Boss battles at the end of each level check for mastery of those skills before allowing a player to move on to more challenging learning. Getting an answer right or wrong is stressful situation for students. While winning and losing a game is a normal outcome, particularly if students are given permission to play again until they master the game. A well-crafted game based experience gives students opportunities to explore their thinking on a subject and work through the various outcomes until they discover a viable path that is also tied to understanding a standard or learning target.

The best games allow players to choose meaningful roles. In many digital or pen and paper role playing games, players decide their own part to play in the game. This allows players to develop strategies around the strengths and weaknesses of the role they play. Perhaps the greatest meaning is allowing students to experiment with new roles. James Paul Gee, the godfather of game based learning, speaks about the Identity principle in his thinking on game based learning. This is the idea that games are good at allowing players to explore the taking on of roles that they do not normally have access to. Games allow players to explore the identity of being an explorer or a warrior. A well-crafted game based learning experiences can give students a safe and accessible way to explore the identity of being a mathematician or a writer, a scientist or a leader. The narrative theme of a game can offer this connection to students as well. A game based system can be customized to various narrative themes to fit student interests or paired with a unit of study in a similar fashion.

In Tacoma Schools, we have spent the last four years developing game based approaches with teachers and have learned a few lessons. Game based learning does not need to be digital. Game based learning is often associated with video games such as the classic Math Blaster. Many early educational games were focused on repetitive skills acquisition. This may be good for homework or an extended learning activity but in school, game based activities should be built around higher depth of knowledge to maximize their effectiveness and use of school time. Creating digital games tailored to specific learning requirements of a teacher is likely beyond their ability and resources and may sink a game based initiative. Games that are built on readily available objects in the classroom such as math manipulatives, games that are on paper, or even movement based using the students allow for a teacher to explore viable game based instruction without investing too much time or money. It's best to start small and be prepared to improve over many drafts and playtests. Students are the best play testers and they will give you good feedback on if your game is engaging and effective. Above all it is best to try something and improve it than to not try at all.

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