5 ways games make kids smarter

By Mitch Weisburgh
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Games are challenging but they're also fun. That's a formula worth emulating

Ninety seven percent of kids spend an average of ten hours a week playing video games. It's hard work, but they keep coming back. They often fail at whatever they are trying to do, but they persist until they learn the strategies, concepts, and skills to achieve their goals. Then they set new ones and come back for more. Games lend themselves easily to collaboration, and kids often compete with each other. Playing games gives them immediate and long term feedback. And the games track what they do, where they fail, where they succeed, and what they learn.

Isn't that the way we want education to work? So what is it about games that makes kids try harder and learn more?

1) Games are an optimal learning environment.

In their chapter *Flow in Schools Revisited* in the "Handbook of Positive Psychology in Schools," Chernoff and Chikzentmihalyi (don't ask me how to pronounce it or spell it from memory) point out that enjoyment and interest in school are good predictors of student success. They propose that an ideal learning environment, just like a game,

- presents challenging and relevant activities that allow students to feel confident and in control
- promotes both concentration and enjoyment
- is intrinsically satisfying in the short term while building a foundation of skills and interests
- involves both intellect and feeling
- requires effort and yet feels like play

2) Games focus on the sweet spot for learning.

If you already know it, there's nothing to learn, and if it's too difficult, it's not even worth trying. Games work in what is called the *zone of proximal development*; beyond what a person can

already do, but not so difficult that they can't do it with guidance, persistence, and encouragement.

Many of us waded through Lev Vygotsky's work on the development of cognition when we were in school. Games bring his insights to life, resulting in a $100B industry, and new possibilities to advance student learning.

3) Games make people want to persist, plan, and learn.

Games are complex problems waiting to be solved in a way that is both fun and challenging. What can't we learn when we are put into situations that require us to solve problems while having fun and being challenged?

We need to stop saying, "Let's make learning fun." Learning is hard work, and it is also fun. Every time we learn something, we get a shot of dopamine in our brains. What's more fun than that? Games have crafted their challenges for maximal engagement through a quick cycle of challenge-act-learn-accomplish so that the hard work of learning is intrinsically rewarded, and the player (or student or learner) wants to continue playing and learning.

4) Games encourage trial and failure

All people who play games fail more than they succeed. Failure doesn't mean the player failed, it just means that a particular approach failed, and game players know that if they persist, eventually there will be one or more approaches that will succeed, and then they can advance. Players don't experience any long-term consequences for trying and failing. All that counts is that they eventually succeed, and they will only succeed if they try. They know upfront that any new task or goal may require multiple attempts.

Many games keep score and hold out rewards for success, but the reward mechanics are generally one of the least important aspects of an engaging game. Players play for the challenge and enjoyment. Perhaps we can model the way we grade in schools on the way games measure achievement and competence, and figure out a way for grades to help students become auto-didactics.

5) Games can simulate situations that are impossible or too costly to create in the real world

Can a student be a Senator in Washington? Lift a boulder on Mars? Safely experience the consequences of risky behaviors? Learn U.S. history by participating in revolutionary activities? With iCivics, a student can experience what a Congressman, Senator, or judge does while learning about rules and procedures. NASA has games that are missions to the moon and Mars. While Zoo U improves students' social literacy through interactions in a game. Mission US is a series of games where students get to play roles at key turning points in U.S. history. These are all situations that students could only experience in a game.

No amount of computers or technology can replace a good teacher. Games give teachers the tools to engage student learning in ways that reflect what we know about motivation, achievement, learning, and the brain.

As we move from a print to a digital world, we have an unprecedented opportunity to transform education into something that works for everyone. Games need to have an integral role if we are to realize that vision.

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