Computer Games for Learning

Stop listening to teachers.

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"We can't save the world by playing by the rules, because the rules have to be changed. Everything needs to change—and it has to start today."
— Gretta Thunberg

School

Today's schools feed kids outdated ideas, revised histories, and adult excuses (Gatto, 2017). Traditional schooling attempts to convince students that the perpetrators of our inequitable economy and injured ecology are not personally responsible and the system is not at fault. Schools are a waste of time. Nothing is better and computer games are far better than nothing.

The discussion of computer games' educational value is confused for two reasons. First, the discussion is framed by institutions and teachers. Second, those who argue know nothing about gaming. We need to stop listening to teachers.

Criticisms of computer games center on their unfamiliarity and their perceived anti-social implications. Endorsements of games focus on their positive social, cognitive, and neuro-developmental effects. Because of this wide scope, poor understanding reigns, and there are few research summaries (Griffiths, 2002; Mitchell, 2004; Granic, 2014).

Throughout history, games have been used for practice, insight, apprenticeship, and as tools for innovation. Learning is not memorization which, in modern parlance, refers to studying. Studying is simply the uploading of the program, a form of training.

Traditionalists argue that reviewing the existing program is essential, but that's only true if you're expected to follow it. If you're charged with changing the program, then your first order of business is to envision what it might become (Stoller, 2021).

Insight follows from engagement and feedback, it is not the result of focus alone (Willingham, 2010). Traditional education amounts almost exclusively to focus training; training kids to be inconsequential players in a game that's largely hidden from them (Rose, 2014).

Kids fail in school because school is uninteresting, irrelevant, and disrespectful. School is an extension of familial and political abuse. Kids know this emotionally. Even successful kids feel this, but they endure it in order to exploit the system.

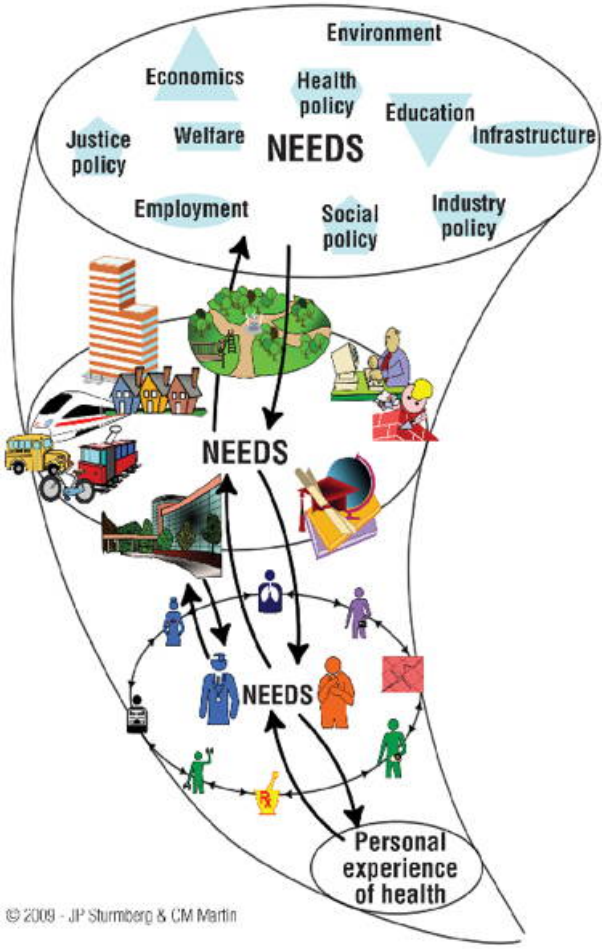
Gaming

What kids need in order to become leaders and thinkers is a sandbox of opportunities to explore meaning, thought, relevance, and relationships. This is what games have become, and the newest crop of computer games in particular.

Learning is exploration, and exploration is observation and involvement. Learning is always making mistakes because only mistakes define the boundary of knowledge. If you never fell down, then you would never learn to walk.

A true game provides the opportunity to make mistakes, but, if you look at the popular things that are called games, you'll see most games are diversions based on chance. These are what many people understand games to be because, for most people, games are a palliative for frustration. Spectator sports, game shows, movies, and most commercial games involve no mental energy or thought. They are diversions.

Systems Theory



Beneath the game, test, or simulation, lies the system. Studying the game's dynamics can lead one to understand the system and how the game emerges from it. The system is a larger class of relationships than is represented by any particular game. A systematic understanding goes beyond the game, which is why schooling-as-training fails to impart understanding.

If you watch kids play, you'll see they start by exploring the system. They engage their environment and their games come out of this. Their games are an expression of their understanding and an attempt to make use of it. Skilled card game players first understand cards, and then learn the rules of the game.

I recently found a great "game" for exploring Western history with my 10-year old son. It started with an essay by Walter Scheidel titled "**The Road From Rome**," concerning the fall of the Roman Empire. Scheidel explores how Western culture originated from this collapse. This history linked to many characters and subjects that my son is familiar with: knights, kings, churches, explorers, geography, evolution, dinosaurs, cities, railroads, the plague, wars, weapons, astronomy, magic, food, animals, and the wind.

My son jumped around while I explained how these things came about and how they were related. A systematic presentation of history became interesting to him because these were things he played with. It suggested relationships he hadn't seen.

I asked my son questions about how things came to be and how they were related. Where did kings come from and where are they now? Why did people talk about dragons and where did these myths come from? What were the big threats then and where are those threats today? We explored his questions and answers, and I gave answers that led him to more questions.

Computer Games

Computer games have rapidly developed into subtle and complex tools that both reflect and extend culture. They are always designed to push limits, and those limits are increasingly ethical, cognitive, and neurological.

The first computer game, Pong, was an exploration of the computer interface. It was an exercise in perception and reaction. That theme continues to be explored with ever more complex computer interfaces. Games then spread into the realms of narratives and puzzles with games like Zork and Myst. Current games mix prediction, chance, and logic with the addition of responsive animation and complex controls. All of these aspects are teaching opportunities (Powell, 2019).

Aside from technological innovations, two of the biggest changes in video games over the last 10 years have been the introduction of massively multi-user role-playing games (MMORPGs) and the opening to players of the game engines themselves. Opening these game engines enables gamers to create their own games.

The connectivity offered by the internet has enabled kids to be more widely in touch, both locally and with people all over the world. I've known many juvenile gamers who express amazement at their global reach, and the cultural diversity of the kids they're in touch with.

Computer games adapt other game forms while emphasizing the attractions of computer technology. Because of the high development cost, computer game design is limited and borrows concepts from the cottage industries of board, card, and boxed games.

Collectible card games–like *Magic: The Gathering*, and *Pokémon*–as well as a revolution in player-designable games spawned by what are called German-style or Euro-style board games–one of the first being *Settlers of the Catan*–took players beneath the game into the systems on which these games are built.

It's taken computer programmers decades to figure out how to deliver this power to video game users. In truth, a small number of complex, strategic, asymmetric, social simulation games have been around for 60 years–the board game *Tactics* was released in 1954.

Released in 2011 and now the most popular computer game, *Minecraft* broke the mold as the first MMORPG in which your primary task is to build your own world. This concept has trickled down to younger ages. *Roblox*, a game designed for pre-teens, is now an environment where younger players can design and share their worlds.

The movement toward making and understanding is changing the education landscape with the advent of STEM programs, Maker Faires, and degrees in interactive engineering. Computer games for increasingly younger audiences are providing tools for younger learners to become makers in addition to players. This is more than a trend, it's a funnel.

Kids start by watching friends play, watching game-play videos, playing themselves, exploring game modifications, and then becoming game builders. This is computer programming in only the loosest sense which is its least important aspect.

The greater importance of gaming lies in the development of a systematic understanding, and the power to design relationships. This is play that's relevant, interactive, self-directed, empowering, and respectful. Crucially, this authentic play does not involve adults.

Something in our society is now turning people's attention to how things work and why. This is crucial for social change as well as personal development. Gaming is doing more to foster new thinking than anything taught in K-12 schooling.

The question is not whether computer games are useful in education. The question is when existing education will be replaced with hands-on learning. More fundamentally, when will young people be empowered to take control of their future and ours?

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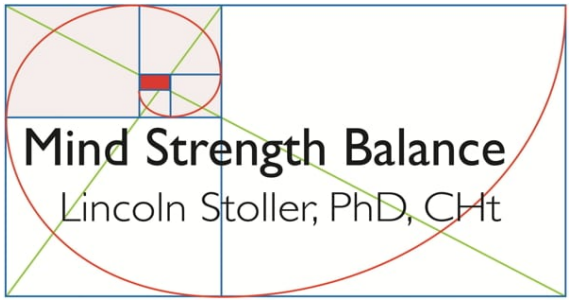
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