Video Game Academy

Positive Learning from Video Games

Transcript

HackingHighSchool.net

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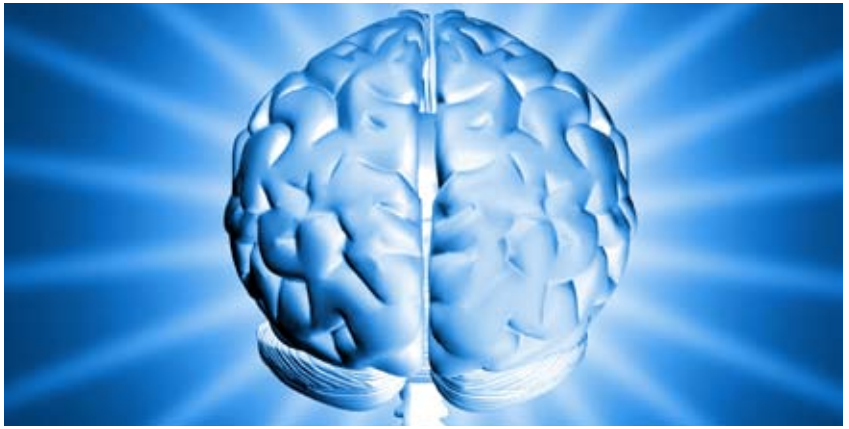

Introduction

Welcome to the final lesson in the Video Game Academy, and congratulations for making it through the course! I have thoroughly enjoyed this journey with you and I hope you've been able to apply some of what you've learned to your homeschool education.

Today, we're covering our final topics: active critical thinking and learning in video games, flow, the 7 habits of highly effective gamers, things students can learn on their own, positive things to learn in video games, and the 36 principles of learning that video games teach us.

One note before we begin: because you're a member of the Video Game Academy, you will receive free lifetime updates to the online version of the Academy!

So, choose your videos and let's get started!

Active critical thinking and learning

"I am convinced that playing video games actively and critically is not 'a waste of time.' And people playing video games are indeed....learning 'content,' albeit usually not the passive content of school-based facts."

But how can you be sure your student is actively thinking critically, and not just zoning out in a game?

James Paul Gee, in *What Video Games Have to Teach Us About Learning and Literacy*, asks the same question. In response, he says that we can't force critical thinking on anyone, but there are two things that will encourage it:

1. Game design. According to Gee good design will "encourage and facilitate active critical learning and thinking." As you choose games, consider the principles of game design we've talked about in earlier lessons. And, as you model your education after a game, consider these same priniciples: the better designed the education is, the better it will encourage critical thinking.

2. Other people, both players and nonplayers. According to Professor Gee, others encourage critical thinking if they "encourage reflective metatalk, thinking, and actions in regard to the design of the game, of video games more generally, and of ...their complex interrelationships."

Sounds good in theory, but who, really, is going to talk about all that? Actually, most gamers do. Gee points out, "Indeed, the affinity groups connected to video games do often encourage metareflective thinking about design, as a look at Internet game sites will readily attest."

What is included in this critical thinking step?

- Discussing game design
- Designing a game, while keeping in mind principles of game design
- Comparing and contrasting the game to anything else—to another game, to a movie, to life, to history, anything

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- Discussing how to use the game's design to your advantage. For example, consider how one character is too weak to fight in team battles, but can heal your team so they can fight better. This category is so broad that most game-related discussions will fall under it, which is good: that means that most game-related discussions are encouraging active critical thinking and learning!

Positive things kids learn in video games

I was reading an article about the positive things you can learn in sports, it struck me how pretty much everything—like cooperation, teamwork, sportsmanship, all that—can be learned in almost all multiplayer video games. Even the physical exercise is in exercise and movement-based games.

So what's the difference? Why are parents all gung-ho about their kids learning teamwork in sports but they are anxious when their kids are learning teamwork in a video game?

Two reasons: ignorance and excess.

First, most parents have been taught that sports are beneficial beyond physical exercise. But they haven't been taught that there's any value in video games beyond entertainment.

Second, for most of us, it's usually too hard to play sports to any level of excess. It's just too exhausting. But video games are a lot easier to go overboard on. And anything, even good things, to excess is usually bad, and parents are legitimately concerned about their teenager's excessive game playing.

Let's break down the barriers of ignorance. What are the positive things gamers learn in video games? Why should any parent allow their kids to play games?

In *Got Game: How the Gamer Generation is Reshaping Business Forever*, the authors state: "students who also played video games showed improved cognitive skills, including improved visual memory in children as young as four years old as a result of playing video games." This is a hugely exciting claim. Improved cognitive skills? Improved memory? Video games, as we've seen throughout this course, teach incredibly useful and valuable skills to gamers.

James Paul Gee, in *What Video Games Have to Teach Us About Learning and Literacy*, discusses other ways gamers can transfer important knowledge from their game to life: Knowledge in video games, he claims, "can be a good precursor for learning another one [domain], because mastering the meaning-making skills in, and taking on the identity associated with, the precursor domain facilitates learning in the other domain... For example, it may well be that the popular (sub)domain of simulation games (so-called god games, like *SimCity*, *The Sims*, *Railroad Tycoon*, and *Civilization*) could be, for some children, a precursor domain for those sciences that heavily trade in computer-based simulations as a method of inquiry (e.g., some types of biological and cognitive science)."

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Just a few positive things learned from games:

- active, critical thinking and learning
- literacy practices
- new (and valuable!) identities (not only identities of characters you play, but identities like that of scientist)
- get intrinsic rewards for learning
- extend personal confidence through mastering levels
- solid definitions of words and ideas based on experience
- improved cognitive skills
- improved visual memory
- master meaning-making skills, which can be transferred to other opportunities in life
- precursor for learning sciences
- precursor for learning anything related to the game or its design
- create flow
- Multiplayer games teach cooperation and social interaction
- Gamers learn how to overcome difficulty.
- How to create
- an opportunity to share one's creations
- twitch speed
- parallel processing
- random access/"hypertext" minds
- focus on graphics
- connection with others
- active learning
- focus on play
- need for payoff
- emphasis on the casual
- comfort with technology
- co-design with the game designer
- communication skills
- deep connection to written texts (like websites, strategy guides, etc.)
- ability to read above grade level
- direct application of mathematics
- familiarity with physics
- familiarity with other sciences
- economics skills
- business skills
- management skills
- ethics
- health
- game-specific skills
- decision-making skills
- strategy
- tactics
- educated risk-taking
- flexibility
- adaptability
- initiative
- self-direction
- creativity
- innovation
- critical thinking
- problem solving
- collaboration
- information literacy
- commitment to excellence
- self-knowledge
- competence
- competition
- interest in data
- multitask
- confidence
- practice
- knowledge of how your brain works
- how to complete tasks
- analysis
- research
- how to think like a scientist
- how to understand the world in terms of scenarios
- focus
- productivity

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Flow

We've discussed the concept of flow in bits and pieces throughout this course, but let's take an in-depth look at it now.

The mental state of flow is "pleasantly frustrating" and happens when something is challenging, but not overwhelmingly impossible. The Wikipedia article on flow describes it as being "fully immersed in a feeling of energized focus, full involvement, and success in the process of the activity."

Games are actually designed to put players in this mental state. And since I'm touting it as a benefit of video games, let's turn to Marc Prensky and his discussion of flow. In his book, *Don't Bother Me Mom—I'm Learning!*, Prensky explains how video games are designed to create flow experiences. Consider these both as you design your education and as you use video games as part of an education:

Because of leveling up, gamers can feel themselves get better

Games maintain a delicate balance between being too easy and too hard.

Games are adaptive, and will move the player back into a flow state when get out. For example, when the game gets too hard, the player will often get extra ammunition or help.

Games have worthwhile goals; objectives the players WANT to achieve. Unlike the goal of, say, "solving equations," goals in complex games are goals that kids can relate to personally and emotionally. They are a combination of short-term, medium-term, and long-term goals, just like life!

Some games do not have predetermined goals (like *The Sims*) but the player chooses own goals—which adds another layer of motivation.

At their core, video games are about making decisions. Kids love to make decisions. It gives them a sense of power. And the decisions in a game are rapid and continuous—one decision every half second! They're not just random decisions, but they are meaningful and help towards the goal [including what to do, how to do it, how to plan ahead and prepare, what strategy to use with (and against) whom].

Feedback is clear and generally immediate.

These are not just decisions about what to do, but also decisions about the gamers themselves: are my skills good enough, should i seek help, should i go heal? Or go practice more? These are the kinds of decisions we make in everyday life, especially as adults.

Decisions are extremely intense.

Gamers learn how to overcome difficulty.

The ability to create is taught in a game, which is important for flow.

There is an opportunity to share one's creations.

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7 habits of highly effective gamers

In 1990, Steven Covey published his book, *The 7 Habits of Highly Effective People*. It's been a bestseller, selling millions upon millions of copies, and with good reason: his 7 habits really do help you be effective.

Marc Prensky looked at these 7 habits and realized that effective gamers use these habits. What better way to teach effectiveness and prepare gamers for success *in life* than to help them see how they already are effective in their games?

So let's look at each of the 7 habits and Prensky's argument as to how they are important in gaming. In the worksheet, we'll look at ways to transfer the 7 habits from the world of gaming to the world of life.

1. Be proactive.

In other words, do, don't wait. Every player learns this early on—you can't win a game by waiting. You have to be out there, making decisions, testing strategies, defending, attacking, and gathering information from the players and characters you meet. The world is constantly changing and those who don't act proactively don't succeed.

2. Begin with the end in mind.

Have a clear goal from the start. It's pretty much impossible to be successful in a game otherwise. For example, when my husband plays *League of Legends*, he often comments on those who lose sight of the end goal: sometimes players get caught up in battling other heroes (short term goal), but the real (long-term) goal is to destroy the structures at the other team's base (like capture the flag). If you lose sight of the end goal, you usually lose.

3. Put first things first.

Manage immediate needs and long-term objectives at the same time. Players learn that many resources they will need later take foresight and time to develop, and that they'd better spend a good portion of their playing time preparing for the inevitable attack, twist, or surprise. You can't be a good gamer if you don't.

4. Think win-win.

In multiplayer games, you can't win objectives without a group of others whose complementary skills support the team. Teams require and foster mutual support among players. Win-win has become the most satisfying and successful play strategy among human players.

5. Seek first to understand, then to be understood.

Communication is at the heart of today's game playing, whether through chat or voice. Successful players understand the needs and motivation of other players, as well as opponents, before committing themselves to a course of action. According to my gamer husband, understanding the opponent lets you beat them easily, because you know what they

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will do. Players who don't seek to understand are highly unsuccessful at multiplayer games.

6. Synergize.

Find new combinations or strategies that make the union stronger than the sum of its parts. Gamers especially do this in mods, where they continually experiment, create, and bring things together in ways the original game designers did not anticipate. Maybe this is why games like *League of Legends* frequently update, changing the balance of power among strengths of characters: because players have made the ultimate use of synergy and found new combinations or strategies that completely unbalance the game in their favor.

7. Sharpen the saw.

Continuous improvement and learning new skills are essential. Prensky boldly claims that no group does this better than gamers, both when improving their own skills and increasing the difficulty levels in games, but also when looking for new games, add-ons, or sequels that test and improve the skills they've acquired. Gamers are always sharpening the saw as they constantly research new ideas and game-playing strategies.

What kids can learn on their own

In *Don't Bother Me Mom—I'm Learning!*, Marc Prensky argues that there are "many things we teach kids that don't need to be taught in the traditional way. There are many lessons, even whole subjects, that don't have to be taught by a person at all in order to be learned. If presented right, students will learn them much more quickly, efficiently, and happily on their own."

The good news? Prensky argues that most of the subjects that are BEST suited for learning through games are often the least fun to teach anyway.

Consider, in some cases, eliminating the middleman. In other words, get rid of whatever comes between the learner and what he or she wants to learn.

This doesn't mean that a parent or teacher is no longer necessary. Prensky says, "Kids learn content great and on their own, but still need teachers [or homeschooling parents] for context, for guidance to develop clear thinking patterns, good discrimination, and the ability to express themselves well."

Here is Prensky's list of things kids are learning on their own that used to be taught by teachers:

- communication, through IM and chat
- sharing, through blogs and webcams
- buying and selling, through eBay
- exchaging things like music, movies, and humor, through peer-to-peer tools
- creating sites, avatars, mods using creative tools

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- meeting in 3D chat rooms
- collecting mp3s, videos, and sensor data
- coordinating projects, workgroups, and MMORPG clans and tribes
- evaluating each other through online reputation systems like Epinions, Amazon, and Slashdot
- gaming in small and large groups
- learning about stuff that interests them
- evolving new, emergent behaviors
- searching for information, connections, and people
- analyzing everything from space data to drug molecules
- reporting via blogs and photos
- programming via search, open-system software, customization and modding
- socializing: learning appropriate and acceptable social behavior and how to have an influence
- growing up through exploring

36 principles

James Paul Gee's book, *What Video Games Have to Teach Us About Learning and Literacy*, outlines 36 ways that video games teach us how people learn well. Use them as you learn, with or without video games, and as you look for the value in your gaming.

The worksheet has questions to help you apply these principles to your education.

I've kept the names of the principles that Gee gave in his book, but the titles are sometimes obscure and full of heavily academic jargon. However, I've made the explanations as user-friendly as possible. Let's take a look:

1) Active, Critical Learning Principle

Everything in the environment is designed to encourage active, not passive, learning.

2) Design Principle

Learning about and appreciating design and design principles is essential to learning.

3) Semiotic Principle

Learn about and come to appreciate interrelations within and across multiple sign systems (images, words, actions, symbols, artifacts, etc.) as a complex system.

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4) Semiotic Domains Principle

Learning involves mastering, at some level, semiotic domains, and being able to participate, at some level, in the groups connected to them.

What, you ask, is a "semiotic domain"? According to James Paul Gee: "It is too bad we don't have a better term than the one I am making up here—'semiotic domains'—but the essential insight I am trying to capture is that domains like Yu-Gu-Oh (a card and video game) for a young fan, Japanese anima manga (comic books) for an otaku (expert), and cellular biology for a cellular biologist are each domains of specialized representations, modalities, knowledge, and practices. In their own ways, each is quite complicated and each is grounded in a group of people who have cognitive and social interests and help uphold a set of standards and norms. Each domain allows people to communicate distinctive sorts of messages (information, values, ideas) to each other."

In the extra credit section of the lesson there is a link to Gee's essay on Semiotic Domains, if you're interested in more.

5) Meta-level thinking about Semiotic Domain Principle

Learning involves active and critical thinking about how this particular semiotic domain (like the video game you're playing) is related to other domains (like *Romeo and Juliet* or mathematics).

6) "Psychosocial Moratorium" Principle

In games, the risk of real-world consequences are lowered, providing a better learning opportunity.

7) Committed Learning Principle

People put lots of effort and work into games as an extension of their real-world selves because they feel some commitment to their virtual identity (e.g., their character) and they find the virtual world interesting.

8) Identity Principle

Learning involves taking on and playing with identities (or characters) in a way that the learner has real choices and plenty of opportunity to think about the relationship between new identities and old ones.

9) Self-Knowledge Principle

Games are made so players learn about themselves, their capacity, and their potential.

10) Amplification of Input Principle

For a little input, learners get a lot of output. In other words, you get a lot more value than what you put in.

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11) Achievement Principle

For all skill levels, there are intrinsic rewards from the beginning, customized to the learner's level, effort, and growing mastery. The rewards are an indication of the learner's ongoing achievements.

12) Practice Principle

People will practice a LOT when it's not boring to practice.

13) Ongoing Learning Principle

Students must, at higher and higher levels, undo their automatic skills to adapt to new or different conditions. The cycle repeats itself: new learning, automatic skills, undo automatic skills, reorganize skills.

14) "Regime of Competency" Principle, aka: Flow

The learner gets ample opportunity to operate within, but at the outer edge of, his or her skills, making it challenging but not impossible.

15) Probing Principle

Learning is a cycle of probing the world (or doing something); reflecting on this action and, on this basis, forming a hypothesis; reprobing the world to test this hypothesis; and then accepting or rethinking the hypothesis.

16) Multiple Routes Principle

There is more than one path to success. This idea allows learners to make choices, rely on their own strengths and styles of learning and problem-solving, while also exploring alternative styles.

17) Situated Meaning Principle

People understand the meanings of signs (words, actions, objects, artifacts, symbols, texts, etc.) through actual experience. Meanings are not learned out of context.

18) Text Principle

Texts are understood in terms of actual experience. Learners can understand text outside of experience only when they have enough experience in the domain and plenty of experiences with similar texts.

19) Intertextual Principle

The learner understands texts in relation to others in a family or genre of related texts, but only after having experienced understandings of some texts. Understanding a group of texts as a family is a large part of what helps the learner to make sense of texts.

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20) Multimodal Principle

Meaning and knowledge are built up in multiple modes (like images, texts, symbols, interactions, abstract design, sound, etc.), not just words.

21) "Material Intelligence" Principle

Thinking, problem-solving, and knowledge are "stored" in material objects and the environment. Think of the last time you had an idea, but forgot it as soon as you left the room. Then when you came back in the room, you remembered the idea. This is the principle of Material Intelligence. When knowledge is "stored" like this, learners are free to combine the results of their own thinking with the knowledge stored in material objects and the environment to achieve powerful effects.

22) Intuitive Knowledge Principle

Intuitive or tacit knowledge built up in repeated practice and experience is valued and honored.

23) Subset Principle

Learning, from the start, takes place in a (simplified) subset of the real domain

24) Incremental Principle

Learning is structured so the things you learn can be applied to later similar situations.

25) Concentrated Sample Principle

The important stuff appears in the early stages more often than it normally would so students practice and learn them well.

26) Bottom-up Basic Skills Principle

Basic skills are not learned in isolation or out of context; rather, what counts as a basic skill is discovered bottom up by engaging in more and more of the game/domain or games/domains like it. For example, gamers learn how to use the keyboard in a computer game because it's used similarly in most computer games. Students studying science learn the scientific method because it's used similarly in most sciences.

27) Explicit Information On-Demand and Just-in-Time Principle

The learner is given explicit information both on-demand and just-in-time, when the learner needs it or just at the point where the information can best be understood and used in practice

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28) Discovery Principle

Lecturing, in any form, is kept to a minimum. Instead, students experiment and discover the information.

29) Transfer Principle

Games encourage and teach players to transfer what they learned earlier to later problems, including adapting and transforming that earlier knowledge.

30) Cultural Models about the World Principle

Students become more aware of and reflect on their cultural models of the world, without threatening their identities, abilities, or social circles. They also compare these models with new, and sometimes conflicting, models.

31) Cultural Models about Learning Principle

Students become more aware of and reflect on their cultural models of learning, without threatening their identities, abilities, or social circles. They also compare these models with new, and sometimes conflicting, models.

32) Cultural Models about Semiotic Domains Principle

Students become more aware of and reflect on their cultural models about a particular semiotic domain they are learning, without threatening their identities, abilities, or social circles. Once again, they also compare these models with new, and sometimes conflicting, models.

33) Distributed Principle

Meaning and knowledge is distributed across the learner, objects, tools, symbols, technologies, and the environment.

34) Dispersed Principle

Meaning/knowledge is dispersed in the sense that the learner shares it with others outside the domain/game, some of whom the learner may rarely or never see face-to-face.

35) Affinity Group Principle

Students are part of an "affinity group," bonded primarily through shared endeavours, goals, and practices, and not based on shared race, gender, nation, ethnicity, or culture.

36) Insider Principle

Instead of being a consumer, the student is an "insider," "teacher," and "producer," and customizes the learning experience and the domain/game from the beginning.