Escape from Planet Jar-Gon
Or, What Video Games Have to Teach Academics About Teaching And Writing

A Review of *What Video Games Have To Teach Us About Learning and Literacy* by James Paul Gee

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"Every time you put an instructional designer on a [game design] team,
the first thing they do is suck the fun out."

– *a video game designer*

"*'Twas brillig, and the slivey toves / Did gyre and gimble in the wabe…*"

– Lewis Carroll, *Jabberwocky and other Frabjous Nonsense*

To write his new book, *What Video Games Have To Teach Us About Learning and Literacy*, James Paul Gee did something that is extremely unusual, courageous, admirable, and potentially quite helpful to a great many of you and all people of his generation. In his fifties, a self-described "late middle-age baby-boomer" with "what little hair I still have," Gee voluntarily in the search for understanding braved a quest that few from his cohort have dared to undertake – and returned to tell us his tale. Gee's "odyssey" was deep into the world of video games – not as an outside "cultural observer" of the genre, as some writers of his generation are, but as a player. And not just as a casual player who looked around, found it hard, and quickly bailed, but rather as one who strove mightily to reach – and who did reach – the end of many of the longest and most difficult games.

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From this quest, Gee returned to us with first-hand impressions of what it "feels" like to play today's video games, in all their difficulty and complexity. His descriptions of the various games he played, and of his playing experiences (combined with the reports of a few others, principally his 6 year-old son) constitute the most interesting and lucid writing in his book. These passages, excerpted from the rest, should probably be required reading for any parent or teacher whose kids play video games but who has never tried one him or her self. I encourage Gee to post them separately to a web site.

Although Gee mentions a "grandfather" who thinks of video games as "worthless," I suspect this was the attitude of Gee at one time. But in playing the games (which he did, initially, as research) his attitude changed. In fact, he became totally co-opted. He began not only to enjoy the experiences, but to realize how much he was learning from them. This learning is no surprise, of course, to experienced game players – one of the primary reasons that people play video and computer games for such long, concentrated periods is that they learn a lot from them (although this is almost always unverbalized.) As sports, hobbies and other such phenomena attest, in the right context most people find learning new skills, abilities and information quite enjoyable. It is only because learning is associated with that often terrible experience called "school" (or as we shall see, an even worse area called "learning science") that people shy away from it.

From his own experiences – and this book is almost exclusively about Gee's own experiences – as well as from other research he has done, although it is referred to in the book only rarely and obliquely, Gee has concluded that games are an excellent learning tool. In fact, he writes, "better theories of learning are embedded in the video games many children in elementary school and particularly in high school play than in the schools they attend."

This is by no means a new thought, even for Baby-Boomers (what I call "Digital Immigrants") although it is still a relatively rare one for them. In an article in Game Developer magazine in 1998, Seymour Papert wrote: "Game designers have a better take on the nature of learning than curriculum designers." In a speech at the game developers convention in 2000 Danny Hillis said: "In a playful context [e.g. Pokémon] kids seem to have an almost infinite capacity for learning. It's easy, effortless, exciting. If you put kids in a video game they'll pick up new skills very quickly, and learn how to do things at an amazing rate." I have written about this extensively in my book *Digital Game-Based Learning* and in a subsequent article ("What Kids Learn That's POSITIVE From Playing Videogames," available online at *www.marcprensky.com/writing/default.asp*.)

However, Gee adds several new thoughts and hypotheses to this argument, many of which are quite insightful and powerful. These include a hypothesis of a possible learning process through which game playing helps form and change one's self concept, thoughts about conflicting models about what constitutes "good" behavior , and thoughts about the social and network aspects of learning embedded in games. The key ideas that Gee develops and presents in his book are significant and merit our serious consideration. The fact that our kids learn enormous amounts from playing video games, and that the games are very powerful learning tools – the most powerful, I believe, that we have ever

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invented – is becoming more and more widely accepted by adults who are Digital Immigrants and non-video game players (it is, of course, a given for the players.) Gee discusses several learning areas that I, for one, hadn't thought about.

I am a very big supporter of Gee's overall message that games are powerful learning tools and I applaud his hands-on approach to game study. I heartily agree with and endorse many of his conclusions, and find his book a welcome addition to the discussion.

Contrary, I confess, to my expectations, Gee's book is deeply heartfelt and extremely personal, involving to a large extent his own thoughts and feelings as he played the games. The book's writing is the most lucid in the sections where Gee describes the various video games he played. He does this in a straightforward way, which will no doubt allow other parents of his generation, who have no idea what goes on in their kids game world, to get some insight.

Readers of this *On The Horizon* column should find the book a comfortable read, since it is written, for the most part, in a highly academic style. (Much more on this later.) In fact, given the book's style, I have to assume that academics are Gee's intended audience. Gee states several times in the book that he is "an academic," and is happy about, and proud of, being one ("I like Ivory Towers," he says at one point.)

And although the book starts off slowly and dryly, it improves considerably as it goes along, so if you are a reader who cares about the subject, it pays to persevere to the end.

And that, my dear readers, is the good news about *What Video Games Have To Teach Us About Learning and Literacy,* and some very good news it is.

However, as in the proverbial joke, there is also bad news. And in this case the bad news is *no* joke. Because despite all its useful and positive messages about video games – messages that I support, messages that echo and build on what a number of well-known thinkers have already said, and messages that are highly important for parents and teachers to understand – and despite a title so intriguing that I clicked on Amazon as soon as I heard it, reading this book is, for the most part, a frustrating, and often painful experience. And that is not just my opinion, but also that of others with whom I have talked who also bought the book for its title and have had trouble slogging through it.

In the remainder of this piece, I would like to discuss why this is so, and what it means for writings by *all* academics who have important thoughts to offer to the non-academic world. For just as there are many things that video games can teach us about learning and literacy, there are many things that video games can teach us about delivering information in ways that are so engaging that people voluntarily choose to spend hundreds of hours with them, with nothing but psychic rewards at the end. (That, of course, is the holy grail for academics, who would love it if their students were attending their classes and reading their books not for a grade or degree, but purely for the intrinsic psychic rewards their learning contains.)

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Planet Jar-Gon

Let me begin by stating why I think Gee's real audience (i.e. the people who will get through the entire book, as opposed to buying it based on the attractive title and never finishing) is primarily academics, even though I strongly suspect this is not the audience Gee and his publisher had in mind. Although there are several contributing factors, the primary one is Gee's insistent and persistent use of jargon – that of his current field (education/learning/cognitive science), his former field (theoretical linguistics) and almost every other field he writes about. Hence this article's title. Escaping the jargon was my most fervent hope as I read the book, although, sadly, it was not to be.

Here are a few examples: "semiotic domain"; "situated"; "affinity groups"; "design grammar"; "embodied stories"; "recruits" (in the sense of calls upon); "embodied action"; "identity work"; "reflective practice"; "modality"; "appreciative system." And concatenations of these such as "…integrated into the appreciative systems associated with the affinity groups connected to..." or "…any set of practices that recruits one or more modalities…". For non-academics this is gobbledy-gook, despite Gee's attempt at explanations. I actually understand the jargon and it still turns me off. It was only by the third or fourth reading (which I did only because I was reviewing the book) that I was able to see how serious Gee is about the points he is making.

Why do academics spend so much time with such jargon, and why is academic writing so full of it (pun *absolutely* intended.) According to *http://www.medfriendly.com/jargon.html*   the word "jargon" comes from the French word "jargonnner" meaning "to speak indistinctly." Despite the word's origin, some academics defend their jargon as drawing important distinctions. Some think they are maintaining traditions. Another argument set forth is that these terms provide a "shorthand" for use when speaking with like-minded colleagues (this is what made me think the audience was academics.)

The sad truth, however, is that the use of jargon in academic writing is primarily about getting a writer's name identified with a particular word or phrase. Even more sadly, it is connected to professional advancement. "Why do you say X?, I asked an academic at a recent conference. "Doesn't it just mean Y (a normal English word)? Couldn't I just say that?" "Yes, he answered, but if *I* said Y I wouldn't get any credit for having invented the term X. That's what we academics do." Once the name association has been drawn, the academics perpetuate it forever, hoping someone else will do it in turn for them, in a kind of intellectual tit-for-tat. Using the right jargon also allows academics to identify themselves and be accepted by their academic colleagues – it's kind of a secret handshake.

But using jargon in publications intended to be read by non-academics has serious consequences. Most importantly, it lowers considerably the likelihood of the ideas ever finding a use in the real world. These consequences are often belittled, pooh-poohed and misunderstood inside the academic community (which typically has an overinflated idea of the importance to the world of its work), but they are truly significant outside it.

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While these consequences exist to some degree, I suspect, in every field, they are nowhere stronger or more harmful than in the fields of learning and education.

I should note that this use of jargon is very different from scientists' honoring some fundamental discovery, such as "Boyles Law" or Heisenberg's Uncertainty Principle." Those designations identify a name with something that is expressed in plain English. Jargon does the opposite. To use an example Gee cites, Erickson's "psychosocial moratorium" takes a clear idea (i.e. lower risk in the safety of a simulation) and slaps a jargonistic name on it.

There is, of course, nothing wrong with inventing words or terms – many writers do it, and in some areas it is a noble tradition. Words are made up constantly by non-fiction writers, with both the OED and William Safire and his New York Times "Lexicographic Irregulars" striving to discover the first appearance of each new word in print. Here, the objective is typically to be useful – new words typically make it into general usage (and into the dictionary) when they express a new concept or thing better than it has been expressed before.

Creative writers, too, often invent words, as did Shakespeare notably, and as did Lewis Carroll *in extremis* in his poem *Jabberwocky*. That poem*, as we all know, is made up almost entirely of vocabulary Carroll invented for the occasion. Here his objective is to entertain – since the grammar is clearly English, we are left (and able) to imagine the meanings of his new words for ourselves, with powerful and enjoyable effect.

Academics also invent words. But while their purported objective may be to clarify, academic writing far too often inserts new terms to no useful purpose, obfuscating when it should enlighten, and hiding what it is trying to and should be revealing. The political structure of academia seems to require academics to invent jargon for a living, and even for survival – clarity be damned. I don't think most academics realize just how frustrating this is to non-academics who want only to understand and apply their basic ideas.

Of course if academics get pleasure from discussing *"embodied stories using the design grammar of their reflective practice in their common semiotic domain"* among themselves, they should certainly be free to do so. Perhaps that's what "liking the Ivory Tower" is all about. But what about communicating to the rest of us? And here I don't mean to people of lesser intelligence, experience or learning than the academics, but rather to those for whom speaking more plainly makes it possible to understand and act.

It is curious that in Gee's book there is one field (and only one) where he employs no jargon at all. That is the field of video games. Now I can assure you that that field has as much jargon as the next. But Gee deliberately does not use that jargon, and I doubt that it is because he is not aware of it. Why then does he avoid it? *Because he is trying to make something clear to us that we are unfamiliar with*. If only he had done this with everything else he discusses! "I was once a cannery worker," Gee writes early in his book, "later I became an academic." Although I'm glad Gee made it out of the cannery,

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in another sense, it's too bad. For had Gee written this book in the language of cannery workers instead of academics it would have been, I am sure, enormously more powerful.

And this applies, of course, not only to Gee. The writing of many academics – certainly many of those in the fields of education, teaching and learning, with which I am most familiar – are replete with terms and turns of phrase which could be expressed much more simply and directly, with no loss of clarity or power, and, in fact, a gain thereof. I am convinced this is a big reason why so little that is produced or learned by learning and instruction-oriented academics ever filters into the majority of our classrooms. The academics, of course, cite other reasons for this, but the fact remains that their influence in the classroom is far smaller than they would like it to be.

Many, if not most, academic writers refuse to take responsibility for this. But recently, at least one of Gee's colleagues has begun to admit that there is a problem. John Bransford, a leading learning scientist (whose writings are cited by Gee) wrote in a 2001 PT3 Vision Quest article, "For most people [the academic writing on education and learning in journals and libraries] is impenetrable. Unless one is strongly steeped in the research traditions of the authors, it can be very difficult to truly understand what is being said. Or it can take a great deal of time to fight through the jargon in order to achieve this goal." (*http://www.pt3.org/VQ/html/bransford.html* *.)*

Given that, one would think and hope that when writing for a non-academic crowd academics might lose the jargon. Unfortunately that's not the case. In an otherwise excellent May, 2003 piece by Gee published in *Wired* magazine (*http://www.wired.com/wired/archive/11.05/view.html?pg=1*) – clearly a non-academic-oriented publication – Gee writes: "in cognitive science this is referred to as the 'regime of competence' principle." Why even say this? Who cares? How does this help us design better games or better classrooms? The answer is it doesn't. Unfortunately Gee, like many academic writers, seems to feel compelled to take things that are simple to say and translate them into his own (or his field's) foreign language. Perhaps this helps him. But for the rest of us it in no way clarifies anything.

Interestingly, there are times in the book when Gee actually becomes self-conscious about his own jargon, as when he writes "Semiotic here is just a fancy way of saying we want to talk about all sorts of different things that can take on meaning." But he just can't bring himself to abandon it. This is not entirely his fault – all his academic training (notice we don't say – or mean – academic "education") has led him to this place, and he will most likely lead others there as well.

Why does this state of affairs, so seriously unhelpful both to academic writers and to the rest of us, continue? Could it be fear for one's academic life? In a recent conversation with a newly minted PhD about research in Instructional Design, I maintained that the work they have done is mostly useless in any practical way. "That's not true," he retorted. "There's a lot of important stuff there." "Well if so," I answered, "Someone ought to write it up in a way that is accessible to such people as teachers and product

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designers – people who might actually need to use it." "I know," he replied, "that's a real problem. It's something I plan to do just as soon as I get tenure."

I hope so, but I'm not holding my breath. I suspect many of his academic colleagues – including Gee – may have said the same thing at one time. My guess is that if it doesn't happen long before tenure, it is highly unlikely to happen once the all the academic habits and culture are fully instilled.

OK, so *I'll* do it. Here, for "the rest of us," are what I consider the key ideas in Gee's book, certified 100 percent jargon free. Although they obviously leave out much of the detail, combined with Gee's own jargon-free descriptions of the games he played they give, I think, a pretty good, understandable approximation of what the book, in my opinion, has to say.

1) It is dumb to judge a complex field (such as video games) based only on some things you observe from the outside.

2) Playing video games involves many skills that relate to learning. To play today's complex video games successfully, players need to know a lot, and to know this they have to learn it – the better they learn the better they can play. So video games employ a variety techniques to create and encourage learning.

3) Learning is not just about content. There are many elements of learning, such as thinking patterns, that are independent of content, and many of these are learned in video games. Additionally, there *is* useful content in many video games, and much of it involves moral and cultural choices and perspectives.

4) Video game playing, claims Gee, improves many learning skills (although he offers no evidence in the book other than his own personal experience.) Gee also argues that video games that are better at creating learning sell better in the marketplace.

5) A number of the learning techniques used in videogames, such as "exploring is more important than getting to the end quickly," are unfamiliar to, and initially uncomfortable for, Digital Immigrants. However they are quite comfortable to all game players.

6) Many learning techniques used instinctively by videogame designers correspond to techniques cognitive scientists have identified and consider important.

7) Video games are a language, and in that language designers can express any point of view. There are games some might consider amoral, but there are also games with strong moral and cultural points of view, not all of which are "Western."

8) Much of the learning in videogames comes from relating to other people, as fellow players, as members of the online games community, and as game creators through modification software.

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9) Among the specific techniques used by video game designers that relate to learning are:

- Encouraging players to try new things, persevere, take risks, and practice. Games typically adjust automatically to the players skill, keep them at the leading edge of their capabilities, and provide rewards at appropriate times. All of these aid the player's learning.

- Managing the complex interplay between the way a player sees him (or her) self in life and the way he sees himself in a game. This interplay can potentially, through mechanisms that Gee suggests, influence the way that the player sees him or herself in reality.

- Letting players, within the worlds of the video game, try things, form beliefs, and test and revise them, employing the same procedure scientists use in the real world.

- Training players in clever ways that largely avoid telling them anything directly.

The Underlying Problem

Those all sound pretty good. So why does Gee's book in some ways set us back rather than forward?

At the present time, despite what one might infer from the term "learning (or cognitive) science," most of the brain mechanisms underlying learning and cognition are not well-understood. The data we currently have is a combination observation of people with specific loss of function due to brain disabilities of various sorts, and areas that become electrically active and/or receive increased blood flow under certain experimental conditions – along with a large variety of hypotheses about what this data means. Some address this situation by defining "mind" as something other than the physical brain. But even this leads to arguments about various "theories of mind" which fall into different camps. There is no universal consensus today about the mechanisms of learning.

Still, on the practical side, there are many things about learning that we know from simple, direct observation. Most of these have been known for centuries, if not millennia, since they can be figured out by any bright person interested in achieving results (tutors, for example, or military trainers.) We know, for example, that particular types of learning can be facilitated through activities such as a high frequency of interaction, having one's mistakes corrected instantly, asking frequent questions and getting immediate answers, making decisions and seeing their consequences, doing, in situations that require it, being required to reflect on what one is doing, reading or thinking by probing questions, marshalling one's thoughts in formal form, practice and repetition, and various types of motivation. Although we can't yet articulate all the physical mechanisms through which these things work, we do know they help people to learn.

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What Gee's book, along with much of "learning science" does, in my opinion, is drape sets of confusing jargon around these common sense things, and associate them with both individuals' and jargonic names (e.g. Eric Erickson's "psychosocial moratorium.") This naming and jargonizing by the learning scientists has made the mechanisms related to learning seem much more complicated than they actually are, and – most unfortunately – much more complicated than they have to be in order to be useful. Most learning scientists I have talked to agree that the number of things that learning science has to offer that are truly counter-intuitive to what any bright observer might conclude about learning are minimal, certainly under ten, possibly under five. (Here's one: "Individual learning styles" are a myth – there is no evidence to support their existence. – But no really smart observer I know ever thought they existed anyway.) Of course the learning scientists all swear the counter-intuitive things are "critical." But not one has produced the list.

So for all his zeal for the games, Gee does not in this book, I think, make the learning-from-games argument as strongly as it could, or should, be made. I believe – although I know this is quite controversial – that the reason for this is that Gee is too involved (some might say "hung up on") the academic field of "learning science." (I use "learning science" here rather than "cognitive science" because while there is no clear distinction between the two and they often overlap, my sense is that those who call themselves cognitive scientists lean more toward the abstract understanding of physical and mental learning processes, and those who call themselves learning scientists lean more toward the practical field of instructional design, with which I associate many of Gee's arguments. In any case, and whatever you call it, my argument is the same.)

My strong sense is that although they are certainly well-meaning, and although they would like nothing more than to improve education, the "learning scientists" of today, with both their jargon and their ways of presenting the things they claim to understand about learning, have lost the way totally, and are, in fact, doing serious damage our educational system and the education of our children. I would argue, in fact, that they are setting the cause of education back substantially by opening up the door, through their lack of clarity, to the "skill-and-drill, back-to-basics, test-them-until-they-drop" approaches that they despise. Although I'm sure they would say that the cause of our poor schools is everything *but* them (since they are the people with the right "scientific" ideas about learning) I'm convinced that their work (or at least the way they present it) is a primary impediment to improvement of our education and schools. This is a huge issue, that I have written about at some length in a previous OTH article entitled "e-Nough!" (*www.marcprensky.com/writing/default.asp*.)

"36 Principles"

Here's an illustration of what I mean. Gee's answer to the question of what represents "good" learning is to present "36 Principles," principles that, Gee asserts, illustrate the kinds of "good" learning that are found in "good" video games. (It is not clear, because Gee never says so, whether Gee considers these to be *all* the principles of "good"

learning, or merely the ones that Gee has found being used in video games.) In any case, he lays out these "Principles" in the various chapters and lists them at the end of the book:

1. Active, Critical Learning Principle
2. Design Principle
3. Semiotic Principle
4. Semiotic Domains Principle
5. Metalevel Thinking About Semiotic Domains Principle
6. "Psychosocial Moratorium" Principle
7. Committed Learning Principle
8. Identity Principle
9. Self-Knowledge Principle
10. Amplification Of Input Principle
11. Achievement Principle
12. Practice Principle
13. Ongoing Learning Principle
14. "Regime Of Competence" Principle
15. Probing Principle
16. Multiple Routes Principle
17. Situated Meaning Principle
18. Text Principle
19. Intertextual Principle
20. Multimodal Principle
21. "Material Intelligence" Principle
22. Intuitive Knowledge Principle
23. Subset Principle
24. Incremental Principle
25. Concentrated Sample Principle
26. Bottom-Up Basic Skills Principle
27. Explicit Information On-Demand Just-In-Time Principle
28. Discovery Principle
29. Transfer Principle
30. Cultural Models About The World Principle
31. Cultural Models About Learning Principle
32. Cultural Models About Semiotic Domains
33. Distributed Principle
34. Dispersed Principle
35. Affinity Group Principle
36. Insider Principle

How would an educational administrator react to this list? My guess is she would sigh. "There they go again," she would say, "our kids can't even read."

How would a teacher react to this list? My guess is she would cry. "You've got to be kidding," she would say. "If this is what learning is about I am out of here."

How would a game designer react to this list? My guess is she would laugh. Even if she could understand them, which is doubtful, she would think they "suck the fun out."

In addition to their absolutely toxic level of jargon, these "principles" are really just a mix of definitions, observations, assertions, opinions and assumptions. Beliefs, in fact. One man's credo. While these principles do exist separately in various places, they are by no means universally agreed upon, accepted, or considered a canon or consensus set.

And even supposing, just for a minute, that this list of "principles" *were* useful to game designers or teachers, how is a practical user supposed to remember them? One of the few principles we *do* have in cognitive science – one that unlike many others has been verified over and over by experimentation – is that seven plus or minus two is the maximum number of items anybody can hold in short term memory. So most writers who want people to remember and use their findings bring the number back down to that level – e.g. "The Seven Habits of Highly Effective People." (Not that Covey didn't find more – he distilled them.) Having 36 of anything (there aren't even that many Baskin-Robbins flavors), especially "in no particular order," goes against the grain of both memory and utility. And why 36? Is it a meaningful number, or just an even three dozen? Even if Gee is trying to impress us with how many learning principles he found in video games, this is not a helpful strategy. This is because if you took Gee's 36 "principles" and tried to build anything using them, you would be at a loss – they are

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mostly observations of phenomena that give little explicit guidance of how to achieve the results they describe.

On the other hand, suppose Gee had said the following (these are my words):

"Video game players learn from:

1. Doing and reflecting
2. Appreciating good design
3. Seeing interrelationships
4. Mastering game language
5. Relating the game world to other worlds
6. Taking risks with reduced consequences
7. Putting out effort because they care
8. Combining multiple identities
9. Watching their own behavior
10. Getting more out than what they put in
11. Being rewarded for achievement
12. Being encouraged to practice
13. Having to master new skills at each level
14. Tasks being neither too easy nor too hard.
15. Doing, thinking and strategizing
16. Getting to do things their own way
17. Discovering meaning
18. Reading in context
19. Relating information
20. Meshing information from multiple media
21. Understanding how knowledge is stored
22. Thinking intuitively
23. Practicing in a simplified setting
24. Being led from easy problems to harder ones
25. Mastering upfront things needed later
26. Repeating basic skills in many games
27. Receiving information just when it is needed
28. Trying rather than following instructions
29. Applying learning from problems to later ones
30. Thinking about the game and the real world
31. Thinking about the game and how they learn
32. Thinking about the games and their culture
33. Finding meaning in all parts of the game
34. Sharing with other players
35. Being part of the gaming world
36. Helping others and modifying games, in addition to just playing.

I suspect the reaction of most readers would probably be "Wow! That's a lot of learning!" Yet these are precisely the "principles" Gee espouses, jargon free.

Game Learning vs. Academic Learning

Here is what I think is the *real* relationship between games, learning and academia:

1. Game designers want players to be motivated to stick with their game to the end. Because they focus on engagement, people rush to use their products.
2. Game designers have invented, via intuition and trial and error, a variety of techniques and strategies to encourage players to stay longer. Many (although not all) of these techniques and strategies involve various types of learning, although they rarely focus on this as a direct goal.
3. As Gee points out, the learning *actually happens*.
4. When game designers occasionally articulate their strategies, it is done very simply, with clear guidance e.g. "make sure the player always knows what to do next."
5. Academics come along and say – "oh, we've said that too." Yet because they have couched what they do know in such jargonized and academic research terms, they have little influence on anybody except themselves.
6. The academics feel self-satisfied that video game designers use "their" principles, but they themselves never succeed in applying those principles to create learning products that kids want to use to anywhere near the extent that the kids want to play games. Nor do they provide much useful guidance for those trying to do so.

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In fact, what game designers have intuitively figured out at a very profound level by thinking about learning problems pragmatically (and often unconsciously) rather than theoretically, is not only *how* to get people to learn, but how to get them to LIKE to learn. This is something that most of the learning scientists have never figured out – they are too hung up on distinguishing "good" learning" from "bad."

What video games *really* show us is that few, if any, ideas about learning have to be reflected upon consciously by either teachers or learners for them to operate successfully – they are intuitive. Academics, of course, *prefer* the conscious and reflective, because it gives them something to talk about. But as I noted, the list of counter-intuitive things they have to teach us is almost non-existent, and the key techniques of learning are easily re-discoverable by anyone thinking about the problem seriously. So that is *not* the hard or interesting part.

The difficult and interesting question, the one that almost all game designers – but only the most successful teachers – have answered (and that the learning scientists haven't even come close to answering), is how do you get someone to perform the acts of learning *without* thinking about them or about the effort involved?   Reflection has its place, to be sure, for certain types of learning and certain learning tasks, but it is not what most learning is about, at least not in the terms that Gee uses. In fact, Gee calls this seemingly effortless kind of learning (i.e. where the learner derives pleasure from unconsciously expending energy on the task) "magical."   But it is magical only in relation to what the academics have to offer – for game designers, it is their craft.

Game Design

Surprisingly, one thing that Gee does not discuss very much in his book is the budding field of game design. Although many video game designers operate almost purely instinctively (along with much feedback from testers and players and much iteration), there have been, in a small way in the 1980's and to a much larger extent in recent years, increasing attempts to codify the field of video and computer game design. In a sense this is equivalent to the "learning scientists" attempting to codify "learning principles," so it is instructive to compare the two efforts.

How do Gee's "learning principles" stack up against the principles that game designers espouse and recognize? Knowing how they are alike may allow us to insert elements into learning designs that, ideally, cause them to engage players in the same way games do. Knowing the differences may allow us to distinguish elements that are not currently thought of as part of learning but possibly could or should be.

Since the field of game design has everything to do with entertainment – i.e. keeping players engaged and in their seats enjoyably playing the game for as long as possible – and little or nothing to do with learning explicitly, game design principles are not stated as learning principles. But it turns out that many of them are related to learning, because, as I said earlier, learning, when done right and in the right context, is enjoyable. It is enjoyable because you are challenged at exactly the right level, because you feel yourself

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improving and gaining mastery, because you are making decisions quickly and accurately, and because you are striving for and reaching many goals you care about. I think Gee would certainly agree with this, although he might use other words.

For my comparison I have excerpted a brief number of game design rules from Hal Barwood and Noah Falstein's "400 Project" (*http://www.theinspiracy.com/400_so_far.htm*) and observed where they have relative equivalents in Gee's list.

	Game Design Rule (s)	Equivalent Learning Principle (s)
1	Maximize Expressive Potential	Design principle
2	Concretize Ideas	Situated Meaning Principle
3	Make Subgames	Subset Principle; Concentrated Sample Principle
4	Provide Clear Short-Term Goals; Provide an Enticing Long Term Goal	Committed Learning Principle
5	Maintain Suspension of Disbelief	Situated Meaning Principle
6	Emphasize Exploration and Discovery	Discovery Principle; Active Critical Learning Principle
7	Provide Parallel Challenges with Mutual Assistance	Multiple Routes Principle
8	Don't Penalize the Player	Achievement Principle, Ongoing Learning Principle
9	Provide a Consistent Single Vision for the Game	Cultural Models About the World Principle
10	Fight Player Fatigue; Let the Player Turn the Game Off	None

One thing this comparison shows us is that there indeed is, as Gee suggests, a strong overlap of game design principles with learning principles. There are also game design principles that are *not* on the learning list, but perhaps should be, such as fighting fatigue or giving breaks (I could have listed many more of these.) A key difference between the two lists, though, is the way in which they are phrased. The game design rules are stated in terms of instructions to follow, rather than observations of existing patterns. This has the strong advantage of making them immediately usable.

Using the Principles of Game Design to Write and Teach

So let us finally turn to the subject posed in the title of the is article: What can academics can learn about teaching and writing from video games?

You might think that Gee would have offered some help here. But how many of his own 36 "Principles of Good Learning" has Gee taken into account in the design of how he has written his book? My answer is few, if any.

Suppose you were writing a book – text or other – for an audience of video game players (i.e. all your students.) Now suppose, for a moment, that the book, instead, were a video game. How would it have to be designed in order to be successful? If Gee's book were a video game, would anyone buy it or bother playing it? If they did, would it keep them in their seats for 40 hours and have them begging for a sequel?

One could argue that a book is a book and a game is a game. But suppose a game started out with a 2 hour (= 40 page) lecture on semiotic domains? Would anyone buy or play it? Gee correctly observes that the pressure of the marketplace has forced games to be better. I fervently hope something forces academia to become better in our lifetime. I do not mean "better" as in different content – I don't argue, in most cases, that the academics'

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ideas are wrong – I mean better at presenting those ideas in an engaging way, a way that is as engaging as video games.

Despite all the "I can't compete" moaning from teachers, I believe this is possible. Not only is it possible to transform our books, but it is possible to think of *any* learning experience we are giving to others – especially game players – as an experience designed to keep them avidly engaged until the end. Now that you've seen some game design principles, what do they suggest you might do? While I hope you will think about this for yourself, here are some ideas:

- See if you can avoid "telling" (i.e. lecturing) totally. (Quite a challenge, but doable.) Gee's book contains so much telling at the beginning that were it were a game I would have abandoned it within minutes. Were it a course I would have dropped it. And as a book, I only persevered because I was reviewing it. Yet Gee's ideas are compelling when presented in the context of the games he has played.

- Give your reader/listener/learner, at every step of the way, meaningful decisions to make. A video game never goes even a minute without a decision being required. Ask your students to identify what you say that's wrong, or even require them to "Agree? Disagree? IM me" at certain points. (In Gee's case he could have offered us a number of decisions to reflect on, along with a promise to respond if we emailed him.)

- Give your reader/listener/learner clear short, medium and long term goals to accomplish as they read or listen, and alternative ways of doing this. (In Gee's case the goals could have been for the reader to discover for themselves the learning principles in his game descriptions.)

- Give your reader/listener/learner alternate paths through the book or session. (In Gee's book the game descriptions could have been a separate appendix, as could have all the jargon-filled "theoretical" sections.)

- Give your reader/listener/learner better, more frequent rewards. (In Gee's book the game descriptions are the rewards – having more of them, starting earlier, would, I think, have helped.)

Conclusion

At the end of his introduction, Gee says "We academics have much to learn about the real world." Certainly one of the most important things for us to learn is how to relate what we do and think to the world of non-academics.

I am totally in support of James Paul Gee's thoughts and research on video games. If his work stimulates the discussion of just how much learning video games have to offer, Gee has done us all a tremendous favor.

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I am, however, strongly against *all* academic style, jargon-filled writing, especially in the "learning sciences." I believe such academic writing has gotten completely out of touch with the real world, and weakens terribly the impact of any useful or original work. It is time for academic administrators to take a strong stand and revise the expectations for how their academics and researchers should write.

Gee has learned from video games, he says, many important and "life enhancing" lessons. But like many of his fellow teachers and academics today, he has not yet learned to apply the lessons of game playing to teaching and communicating his ideas to the outside world in general, and especially to those of the video game generation.

This is why I think Gee's view of his book as a "plea to build schooling on better principles of learning" – along with the cries of most of his learning science colleagues – will continue to fall mostly on deaf ears. It is difficult for me to believe that any student, non-academic parent, or even most teachers and principals – not to mention school administrators – will slog through this book's jargon to understand and accept many of its core messages.

But I could be wrong. One of the saddest thing about our society is that many who will buy the book or hear Gee speak will choose to accept his messages *not* because they understand them, or because they find the messages concur with their kids' or their own experience, but because a "professor with a Ph.D." has linked game playing with some arcane jargon about education that "must be really important."

What can you do?

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