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Commentary on Gee's "Science, Video Games, and Literacy: Situated Learning.

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Abstract
A Mother and Multicultural Teacher Educator's Reflection

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COMMENTARY ON GEE'S SCIENCE, LITERACY, AND VIDEO GAMES: SITUATED LEARNING

A MOTHER AND MULTICULTURAL TEACHER EDUCATOR'S REFLECTION

As mother to an eleven-year-old boy, I have spent the last seven years in Pokemon denial. I do remember the day my son, then four, in a birthday party favor bag, was given a solitary Pokemon card. I regarded it with the same amusement and smug pride that I did the first time, earlier that year, he was given a candy bar and did not know what to do with it. A practitioner of alternative parenting, I had limited his exposure to junk food, disposable diapers, stereotypical gender roles (my partner was a stay-at-home Dad), and screens (television and computer). So I was proud of how little impressed he was with this novelty of a Pokemon card. I knew it represented an element of popular youth culture to which he would be increasingly exposed with his public schooling (we could not, after all, afford a Waldorf education), but at that time viewed it as just one among a number of challenges that would present themselves in the course of my "mindful" parenting.

Seven years and who know how many hundreds of Pokemon cards (and candy bars) later, the denial takes a different form. I do not deny him the game, but I do as much as I can to avoid having to play it with him. I just do not get it. He begins to talk about Pokemon and my brain just shuts off because it is so bewildered by the new language and culture he knows so well and I so little. I have recognized it as a gulf between us, and quite honestly, as a fault in my parenting that I have not had the patience to let him teach me (as he has so earnestly wanted and tried). So imagine what it did to my "Guilty Mom" complex to read Gee's paper (after all, it is Gee) in which he claims that "the game is nearly as complex – or more so—than what many young children today see in school during their science and math instruction." I do, as part of my alternative identity, of course, believe in karma. So, here it was. My Pokemon avoidance had come back to plague me. My Pokemon parent guilt would not go away unless I, in full Pokemon fashion, was able to evolve.

To begin to tackle the task before me, I did what many others do. I consulted an expert. My son was thrilled when, with interview questions and video camera in hand, I marched into his bedroom and told him I needed some information about Pokemon. His answers to my questions, including his reactions to some of Gee quotes in the paper, were, to say the least very illuminating. I left convinced of two things: 1) There is more to playing Pokemon (and other card and video games) than meets the eye; and 2) James Gee must be spending a lot of time working hard at such play.

My son is a probable candidate for an ADD/ADHD diagnosis. In the words of his teachers, he is "impulsive," an "underperformer," one who suffers from "quality of work" issues. But listen to what he says in responding to Gee's quote about the

complexity of gaming compared to math and science instruction: “School is just plain annoying. Stuff’s getting harder and boringer and I just don’t think it’s useful.” He goes on to criticize the repetitive nature of schooling – “You basically go over stuff …. You go over it and then we go over that again and go over that again and then go over that again.” His Pokemon game, on the other hand, “is more complex because if you don’t know how to play, you like have no clue what’s happening.” Whereas “school is easy once you get a hold of it and get to know it after awhile,” my son’s Pokemon game, he is saying, ensures his continuous interest-driven learning.

In his chapter, Gee accounts for my son’s enthusiasm for Pokemon, and his disinterest in school, by explaining the inherent situatedness of learning in gaming. Card games like Pokemon or Yu-Gi-Oh or video games like SWAT4, he argues, are particular domains of practice. To be an effective participant or player in these domains, one must master particular sequences of moves and communicate about those using particular sets of technical terms. The meaning of these moves and terms only becomes clear as the play unfolds; it would be impossible, as I know from the bewildering experience of listening to my son talk Pokemon, to comprehend these moves and terms by simply being told about them. Their meaning is situated within the gaming practice. Thus, my son, after describing the information contained on the favorite Pokemon card he is holding, a Rayquaza (this includes its “HP” or “Hit Points”), when further asked what that information means, leans forward and puts the card down. He must put the card into play, so to speak, in order to answer the question. He has, as Gee calls it, a “lucidly functional situated meaning” of his Rayquaza card. As he talks, his movements simulate play, illustrating how his Rayquaza’s HP is really only meaningful when being attacked by or attacking another Pokemon; that is, his card’s meaning is dependent on another card’s meaning (the HP of each card will go up or down in interaction with the other) and for that reason the information contained on the card itself does not mean much of anything until the card is put into play. Therefore, in order to learn Pokemon, you have to play the game, not just be familiar with the isolated properties of the cards.

Gee refers to the fixation in schooling on learning isolated properties or facts as a “content fetish.” It is this fact fetish of formal learning that my son describes when he says they go over it and then “go over that again and go over that again and then go over that again.” And, importantly, it is precisely the repetitive nature of fact learning that my son says makes school, as a fifth-grader “harder and boringer.” The boringer the learning my son is required to do, the harder it is for him. What would make school less “annoying” is if there were more times, it seems, when my son had “no clue what’s happening.” The unpredictability of what next move the play will require is an unpredictability absolutely predicated on interaction with another player. This is what generates the complexity Gee attributes to these games. Given what my son has said, it is also what makes them so easy, quite ironically, to learn. Such easy complexity is then what is missing in the schooling experience of my son. It is what is missing, Gee asserts, in science teaching and learning.

While student-centered, inquiry-based science classrooms are a step in addressing the learning malaise my son’s comments describe, what is needed, states Gee, is an understanding of the science classroom as a “goal-driven problem

space," a situated learning matrix in which talk and activity is always intimately linked to functions and outcomes valued by members in the community of practice. That space of learning, to be maximally effective, would be structured by specific objectives, consist of activities that lead to and are useful for future problem solving and that provide immediate feedback, present opportunities to apply knowledge gained in new, yet similar, situations, and ensure the educative potential of peer and expert (teacher) experience.

Gee's wish list here sounds strikingly familiar. In contrasting the traditional education he sought to dismantle with the "new education" he sought to develop, Dewey (1938) says "To imposition [of learning] from above is opposed expression and cultivation of individuality; to external discipline is opposed free activity; to learning from texts and teachers, learning through experience; to acquisition of isolated skills and techniques by drill, is opposed acquisition of them as means of attaining ends which make direct vital appeal" (p. 19). There is, Dewey insisted, "an intimate and necessary relation between the processes of actual experience and education" (p. 20). It is this relation that creates "the most important attitude that can be formed [which is] that of the desire to go on learning" (p. 48). Without it, education is, in Dewey's words, "mis-educative," or "arresting," or "distorting" (p. 25). Or it is, in my son's words, "annoying."

Of course, Dewey's "new education," nearly seventy years later, is still yet-to-be and thus we still have need of educational philosophers, like Jim, who argue against the "greatest of all pedagogical fallacies," the idea that "a person learns only the particular thing he [sic] is studying at the time." Collateral learning, a term that Dewey uses to describe unintended or secondary learning outcomes, gets at the idea of an axis of intersecting learning dimensions that Gee similarly evokes with his image of a learning matrix. The formal learning dimension of school, with its content fetish, constrains productive collateral learning by reducing all meaningful learning to just one plane – that characterized by the memorization of the routine of talk and activity. Informal learning, like that exhibited by gaming, in contrast, thrives on collateral learning. This is precisely because of the interaction-driven unpredictability of game moves and movement. Envisioning science teaching and learning as a goal-driven problem space helps remind us of the presence, and importance, of collateral learning because of the way it encourages the building of instructional models that, in containing multiple pathways to mastery, never just teach students only one particular thing. So, in referring back to my son's experience, there would never be the chance of complacently "getting a hold of it" because there is, in essence, no one "it" to be gotten a hold of. What keeps gamers hooked is the challenge of beating the next level. The addictive additive momentum of gaming rests on the success by which these games help the players project and propel themselves into their future game learning. This kind of momentum in schooling is desperately needed.

Dewey (1938) was, above all, concerned that schools should prepare students to take up educated action in a democracy. I doubt Gee would disagree. Yet I cannot help puzzle over the implications of looking at gaming as the model by which we strive to configure situated learning experiences to help students "play" at this

learning-for-democracy goal. If I have learned one enduring truth from my research on the language- and science-learning of newcomer Mexican immigrant youth, it is that teaching is enriched when it draws upon real world experiences. So, what does a goal-driven problem space, a situated learning matrix, in real science look like? When simulated in a classroom environment, how could the talk and activity of a real science domain in some way prepare students for democratic life? I am sure that if we followed the work of scientists, we would arrive at important answers to these questions, answers that could be greatly illuminated by using Gee's knowledge about systems and modeling. I am less certain we will arrive at those answers, however, by knowledge about systems and modeling, about gaming, alone.

While it is true that, in gaming, you learn to play by playing, it is also true that, in gaming, the ethical consequences of your play are relatively inconsequential. My son has now taught my daughter, aged seven, to play Pokemon and he invariably takes advantage of her limited understanding of the game to the bend the rules in his favor. Aside from some verbal outbursts and card-throwing, his behavior has little impact on her because it is on the level of fantasy only. At the level of reality, however, there are consequences, grave ones, to unethical behavior in science. The design of a goal-driven problem space, a situated science learning matrix, would need to be informed by such scenarios. What we need then is a model that not only theorizes science "play" through a process of interrogation and generalization of science-learning experience, but one that humanizes and democratizes it as well. Without that, science learning will still take place in a vacuum, void of its social and ethical context. Without science students playing the game *that* way, they will never, as Gee himself and my son so persuasively illustrate, take their learning, and I argue, their living, to another, higher, level.

REFERENCES

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