

Are Computer Games an Educational Cul-De-Sac?

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Abstract

This paper questions some of the fundamental psychological assumptions that have stimulated the uptake of computer games research by policy makers and the adoption by professional educators of computer games activity. Games playing is discussed in the context of conventional western educational practice and tradition from a professional teaching practitioner's perspective rather than a researcher's. The paper calls for an abandonment of the "games" tag altogether in favour of a more honest appreciation of the role games playing has historically had in successful pedagogy and of those behaviours of effective teaching that ubiquitously move children forward in their intellectual development.

Research into computer games and concomitant questions about the psychology of players is clearly a prime magnet for funding these days. An extremely wide range of interested parties either fund, publish or in some way support researchers curious to understand what is actually going on in children's heads when they engage with a computer or video game. Others seek to define precisely what constitutes a computer game and, by default, understand what drives their vast appeal.

This paper doesn't encompass the breadth of that research but takes issue with several of the most often cited, influential authors whose work has stimulated this burgeoning research into computer games and gaming, namely Thomas Malone (1980), J. C. Herz (1997), James Paul Gee (2004) and Marc Prensky (2001). In his book, *What Makes Things Fun to Learn: A Study of Intrinsically Motivating Computer Games*, Malone hijacks the Hungarian psychologist, Mihaly Csikszentmihalyi's (1997) sophisticated concept of "flow", derived from his research into the subjective experiences of skilled musicians, sportsmen, artists and, crucially, chess players, whom, he noticed, exhibited the same complete immersion and joy in their activity. Apparently taking as his cue a very tenuous link between chess and computer games, Malone ends up contorting Csikszentmihalyi's "flow" into a state in which the players are so engrossed in the game that they lose a normal lucid relationship with the real world in favour of the game's world. A concept some distance away from the condition Csikszentmihalyi studied and observed most often in sportsmen and artists who brought intense physical skill and mental agility to bear on real world experiences, but one which researchers into computer games seem to have latched onto as indicative of educational value.

Anyone interested in this question, like myself, is likely to have taken the time to observe children, or indeed adults, who are obviously engrossed in a computer game. Their behaviour is of course in some ways determined by the nature of the game they are playing: combat games, puzzles, role-playing games, sports or strategy games may all have differing observable effects on the players. Yet rather than anything

approaching the sophisticated concept of “flow” that helps us understand the extreme application of a sportsman or musician, certainly, in the case of boys or men engrossed in playing computer games, the one thing I have observed is a frustration so intense at moments of failure or loss, it manifests itself in physical signs of distress and discomfort, even tears. That boys or adult males still persist, in spite of these symptoms, in playing computer games often, literally for hours on end, suggests there undoubtedly is something powerful happening. What I question is that it is in any way similar to the intensity of mind/body co-ordination and control required to be a successful musician, dancer, sportsman or woman. Perhaps a more instructive model for analysing such behaviour is the experience of building a playing card pyramid, which requires not only manual dexterity but a determination and doggedness the most hardened foxhound would admire. Failure is routine and even a slight error of judgement results in sometimes partial, but often complete and catastrophic loss, taking the player right back to square one.

In her book *Joystick Nation* (1997), J. C. Herz categorised computer games into eight types, and by creating a loose taxonomy, immediately invested them with a kind of educational legitimacy. Even a cursory examination of any commercially successful existing game against Herz’s categories will expose them as too insubstantial to be of any real value, and it is self-evident that many of the most successful contemporary computer games could be located equally comfortably under three, even four the categories. It would have been far more educationally valuable and representative of the games themselves to have examined the fundamental manual, or in some cases mimetic actions, which make up the overwhelming majority of player activity: jumping, fighting, shooting, steering or targeting and then have considered what a player learns from the extreme levels of repetition of these functions the games’ inbuilt patterns of repeated failure demand.

Neither Malone nor Herz offer much of value to anyone interested in computer games and education in the widest sense, since they also equally ignore the single most discrete characteristic of computer games, which is that they are essentially defined by their direct opposition to education. Their *raison d’etre* in the minds of most school age children is as an alternative to education, to be entertaining, to be diversionary — in short to be fun. This is equally true of adult behaviour and is indeed enshrined in the business practices of companies like my own, where the playing of computer games is banned outside lunchtimes. Stroll through any section of the offices during lunch break and you will discover young men (and I have seen one woman) in their twenties, engrossed in a computer game, usually a combat game of some kind.

This *fun* versus *learning* opposition is one well known to all skilled, experienced teachers because it is a basic tool in their toolkit. Such teachers wisely use games of various types as a kind of educational seasoning which they employ to aid the digestion of less appetising learning. Needless to say, if teachers used games all the time, they would cease to be either an appealing alternative to learning, or fun. Education would indeed become insipid and in some ways that may indeed already be some children’s current experience and account for the large-scale disengagement with formal education to be seen, certainly in many UK secondary schools.

Csikszentmihalyi's concept of flow is also a very perturbing one to use in an educational context since, regardless of the time players may spend absorbed in a computer game, their gender, or any tangential collaborative social activity that might occur, games playing as currently practised is fundamentally anti-educational because education can be defined as precisely that step change a culture takes when it shifts from *informal* games playing within families or peers to construct a *formal* system specifically designed to pass on inherited cultural values and knowledge. This is in fact why games are widely viewed and experienced as non-educational by children and teachers alike — because atavistically and culturally, they are.

Similarly arguing that computer games which employ high-quality virtual world simulation is a good enough reason on its own to justify their educational use is highly suspect. The US Armed Forces have embedded remarkably complex simulations into their training procedures and in conjunction with operant conditioning the technique has proved an incredibly successful educational tool. That is if one restricts one's definition of education to the crudely utilitarian. Soldiers need to learn how to kill on command — simulations help them to do this. The US and British infantry are probably more deadly, in the strict sense of that word, than they have ever been in their entire history as a result of the sophisticated combination of these two techniques. Some of the most commercially successful video games like *Full Spectrum Warrior*, *Operation Flashpoint*, and *Spearhead* have their roots in research and development budgets originating in the US military, as of course does the US army's hugely successful recruitment tool, *America's Army*. There is not space in this paper to delve into the aesthetics of these games, or address extremely difficult questions like the psychological effect of verisimilitude. It is one kind of design challenge to build a flight simulator which moves and reacts so like a real Boeing 747 that professional pilots can effectively learn to fly in it but quite another to design a battlefield game in which young, often poorly educated military recruits hopefully learn how to stay alive in Afghanistan or Iraq.

However, what combat simulations don't do, and neither does even the most sophisticated form of operant conditioning using real guns and human opponents, is educate the soldiers as to the real consequences of their actions. That is only ever possible on the real battlefield. US Army psychologists are working overtime in the current war against terror climate, trying to patch up the psychological damage this terrifying disparity between the simulated and the real creates in the minds of many of the soldiers who have survived real warfare.

Ironically, the US military is now using precisely the same simulation technologies which have contributed to the large numbers of veterans suffering psychological damage in their attempts to treat them. At a *Medicine Meets Virtual Reality* Conference in Long Beach, California last year, Albert Rizzo, assistant research professor at the Institute for Creative Technologies at the University of Southern California, told delegates that his department was creating an immersive virtual environment system specifically to treat Iraqi veterans suffering from post traumatic stress disorder (Kaplan, 2005).

A conventional, non-pharmacological way of treating post-traumatic stress is through imaginal exposure therapy, which involves the patient imaginatively reliving and revisiting the traumatic event repeatedly, but within the supportive context of a

clinical setting. Unfortunately, denial, avoidance and memory loss are common symptoms that war veterans exhibit and effective infantrymen are not historically renowned for their imaginative capacity. It could be argued, not at all facetiously, that their entire training experience of drill and battlefield practice in effect discourages a free use of the imagination. Whatever the case, many find the kind of conventional therapy on offer difficult and so the Institute for Creative Technologies is using precisely the same computer assets originally designed and used in battlefield simulations to help veterans relive traumatic events within a controlled, therapeutic environment. Clinicians are able to select the appropriate environments and conditions, and introduce the stimuli that may trigger the stress symptoms, while monitoring the patient's physiology at the same time.

In the light of this worrying evidence, there are really only three convincing arguments for using simulations in any school-level educational context: expense, danger, or scarcity of resource. Children, of course, are psychologically far more vulnerable than adults and therefore reality is always educationally the more valuable option than a simulation. Teachers know that children learn by doing. But the doing *what* is every bit as important as the doing itself and it takes a confident, skilled teacher to provide and be in control of the *what* if the child is to learn safely and successfully. A five-year old would probably take marginally longer than a chimpanzee to draft *Hamlet* if left to play with a laptop and Microsoft Word. It's no accident that the most vociferous computer games advocates in schools are frequently the least inspiring teachers, because they are the ones most ill-at-ease within the educational culture in which they have to work, or that a great deal of the research interest has been stimulated by commercial games designers like Marc Prensky or social engineers like James Paul Gee, with minimal experience teaching children.

Gee's book, *What Video Games have to Teach Us about Learning and Literacy* (2004), has had a considerable impact, certainly in the UK. In it he argues that conventional computer games are in fact sophisticated learning machines built around good learning principles and analyses 36 he believes they employ. These include, rather surprisingly in view of the US military's experience, how one picks a role model and how one perceives the world. One of the chief qualities he attributes to computer games is their high motivational value, describing, in his experience, how players feel their minds and bodies have been expanded into the space of the game via virtual characters the player cares about in a powerful way. In a recent online interview for pc.gamezone (n.d.) he said: "This identity can then become a hook for freeing people up to think and learn in new ways, including learning, or at least thinking about, new values, belief systems and world views, as the Army realized in building *America's Army*."

Motivation is something many current educators working at high-school level, especially in difficult inner-city environments, feel is in seriously short supply. So one can see straight away why Gee's book has such an appeal for some policy makers and educators, struggling to engage teenagers who have been educationally disenfranchised by the wider culture they find themselves stuck in. And I would argue the wider culture is precisely why we have such difficulty today guiding children successfully and meaningfully through what may be 13 years of schooling, to emerge as articulate, confident individuals able to discourse and function in the civilised manner one would expect of a human being in 21st century Europe or North America.

School may still occupy a large proportion of any state-educated child's week, but time spent elsewhere carries vastly more cultural weight and influence, and not only is there very little of this wider culture that extols or celebrates learning in any shape or form, much of it actively and consciously counters it.

Possibly even more influential than Gee, Marc Prensky, founder of the *Games2train* e-learning company, formulated one of the most pervasive and pernicious concepts in this whole field: the concept of digital natives and digital immigrants. Like the shamefully debilitating opposition, thankfully now outmoded: *guide on the side, not sage on the stage*, Prensky's phrase reeks of marketing speak. In his article of that name, he states, "Today's average college grads have spent less than 5,000 hours of their lives reading, but over 10,000 hours playing video games (not to mention 20,000 hours watching TV)" (2001, p. 1). He goes on to extol the virtues of any modern technology as employed by child *natives* and condemns teachers who may have made considered and knowledgeable judgements about the value of the same technologies, as Luddite *immigrants*, unable to use technology as cleverly as their pupils, and living in some naïve, pre-digital dark age. It is precisely this entirely culturally-situated viewpoint that I most wish to challenge as the braggadocio of a self-referential, narcissistic culture.

Prensky expresses no concern over television viewing figures that would appall most European educators. Indeed in a conference at which I saw him speak recently he asserted the truth of an event, precisely because he had seen it on video. He was visibly puzzled by the slightly embarrassed titter of amusement that rippled through an audience for whom video evidence is by its very nature, untrustworthy. Prensky adds to the already unbearable weight of anti-educational cultural pressure exerted on children by suggesting that not only must teachers change their methodology to accommodate this digital shift but that the content of what they teach must change too.

"It seems to me," he states, "that after the digital 'singularity' there are now two kinds of content: 'Legacy' content (to borrow the computer term for old systems) and 'Future' content.

"'Legacy' content includes reading, writing, arithmetic, logical thinking, understanding the writings and ideas of the past, etc. all of our 'traditional' curriculum . . . 'Future' content is to a large extent, not surprisingly, digital and technological. But while it includes software, hardware, robotics, nanotechnology, genomics, etc. it also includes ethics, politics, sociology, languages and other things that go with them" (2001, p.4). This 'Future' content is extremely interesting to today's students.

Perhaps like me, Prensky's use of the enlightenment native/immigrant opposition leaves you thinking what would truly enlightened men like Voltaire or Jean Jacques Rousseau make of Prensky's aims? Are the teenage bedrooms of the United States really full of new-age, noble savages sitting in front of computer monitors? I for one wouldn't complain for one moment if I thought they were using the technology to engage purposefully with the minds of men like Rousseau or Voltaire, instead of empathising with one of James Paul Gee's favourites, *Zelda, the Wind Maker*.

If we are to advance thinking in this area, and I believe in the face of a frightening fascination many educational policy makers have for these authors and this technology, we do urgently need to, then we should abandon the “games” tag altogether. Instead, we should simply accept that all kinds of valuable educational activities can be rendered within a technological framework and that seeking to bandwagon the *fun* associated with the ferociously competitive commercial world of video games is, at best, naïve and, at worst, possibly educationally counterproductive.

There is in fact a thriving industry building genuinely innovative, effective, valuable educational activities, which not only rely on precise technologies, but cleverly exploit them, and the market for these is growing all the time. The challenge for the producers is to build the same inducements into the tool or software that skilled teachers exploit when they bring games playing into their classrooms: contrast, competition, challenge, teamwork, excitement, humour, novelty, instant reward and recognition. These are the incentives children naturally respond to, as long as they are all kept securely within a wider context of fairness. Nothing undermines children’s motivation or distracts them more than injustice. Which is why designers of educational technologies will always have one huge advantage over flesh and blood teachers — whatever they build is unlikely ever to be accused of favouritism.

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