Digital Technology Use and Learning: Internet Addiction Disorder in Japan

LLED 601: Theoretical Frames for Language and Literacy Research

Introduction

One of the challenges for research into digital literacy first of all is discovering a widely accepted definition of its theoretical framework, one that differentiates this type of literacy from the many “new” and “multiple” forms literacies have taken on in the past thirty years. Similar to the binary code of ones and zeroes that work together to operate the numerous digital devices at the microprocessing level, much of the discussion on digital literacy seems to be what it is not as well as trying to define what it is (Dobson & Willinsky, 2009; Martin & Madigan, 2006). The “is/is not” nature of this relatively new term for literacy recalls the autonomous model decried by New Literacy Studies authors like Brian Street (1984) and Shirley Heath (1983). The evolution of digital literacy through the development of design orientated multiliteracies (New London Group, 1996) and the figured worlds that create “a space of authoring” (Holland, Lachicotte, Skinner & Cain, 1998, p. 169) will be the jumping off points for my review of literature. The purpose for investigating this topic is to better understand a recent development concerning digital technology use in Japan. This essay will investigate the current media’s claims of an Internet Addiction Disorder (IAD), relate it to psychological studies in Japan and elsewhere, and then compare these results to a digital literacy theoretical framework. In the analysis and conclusion, I will discuss the proposed Japanese national policy for limiting mobile phone and Internet use among children and adolescents, as well as attempts to create “Internet fasting camps” in an effort to either help or hinder cognitive development.

The issue of IAD came to my attention while preparing a case study for a course on Literacy and Multimodality. One of the parents of a six-year old child I asked to interview via Skype raised concern over the potential damage to the subject child’s mind by allowing him to participate in a study on virtual world games. At issue were his sense of reality, concentration level and social interaction that would be adversely affected by playing the game on a mobile phone. These concerns echo the reported claim from Dr. Susumu Higuchi of the Kurihama Medical and Addiction Centre in Yokosuka that IAD “can cause health problems, including sleep disruptions, and can also have negative mental effects.” (Kyodo, 2013, Aug 1). Higuchi’s findings are part of a national Health, Labour and Welfare Ministry’s panel research conducted by Higuchi and Nihon University professor Takashi Ohida claiming that of the 98,000 teen-aged students who responded to a survey conducted earlier this year, 7,952 of them were determined to be Internet addicts, based on Kimberly Young’s (1996, 2009) eight survey questions for identifying the addiction (Sato, 2006). While the details of Higuchi and Ohida’s report are a modest amount compared to the 140,000 students nationwide who originally selected for the survey, the unnamed study received attention from international websites and news outlets with increasingly alarming headlines (Bertumen, 2013; Martin, 2013; Roncero-Menendez, 2013). A closer look at this development in Japan will follow a review of literature that supports the sociocultural and culturalist view of Internet use in general and online gaming in particular to discover a connection to IAD.

Literature Review

Constance Steinkuehler (2008) mentions, but avoids discussing, the current psychological research on Massively Multiplayer Online Games (MMOG) that “tends to rely on a deficit model in which gamers, through their online participation, make up for something their real life purportedly lacks” (p. 620). She refers instead to Sherry Turkle’s (1995) study of Multi-User Domains (MUDs), the virtual world forerunners for the MMOG and Massively Mutliplayer Online Role-Play Games (MMORPG). Each example of the virtual world is described as “objects-to-think-with in thinking about postmodern selves” (p. 185) and give a positive constructivist view of identity-making. Dorothy Holland, William Lachicotte Jr., Debra Skinner and Carole Cain (1998) describe the same identity authoring in less Internet-savvy terms by connecting to culturalist and social constructivist theories of Mikhail Bakhtin (1981, 1986), Pierre Bourdieu (1977, 1993) and Lev Vygotsky (1978, 1987). Holland *et al.*’s figured world is a topic that repeatedly gets mentioned in connection to Instant Messaging (IM) and literacies (Lewis & Fabbo, 2005), asynchronous web forum discussion (Xin & Feenberg, 2005), popular culture in new literacies research (Hagood, 2008) and serious gaming (Gee, 2003). Other articles that explore the positive constructivist and educational effects of online gaming include Suzanne de Castell and Jennifer Jensen (2003), Teresa Dobson and John Willinsky (2009) and John Rice (2007), much of the discussion focusing on how a well-designed virtual world helps the player to understand better learning habits and social interaction. Criticism of the educational value of the Internet and online game exists in academic publication (Jewitt, 2008; Sefton-Green, 206) that raise the point that video games only seem to be teaching children how to play video games.

It is of particular interest in digital literacy that many of the theorists and educators mentioned above rely on Vygotsky’s socio-psychological theory of constructivism, particularly those following the New London Group design for education. Some of these New London authors, such as Bill Cope and Mary Kalantzis (2000), James Paul Gee (2004) and Gunther Kress (2000), write that new literacies are more concerned with moving ahead than returning to the “back-to-basics” model of education. While there is a dawning sense that the type of school experience has changed from the brick-and-mortar place of learning to one more accepting of communities of practice and situated learning, there is still resistance to classrooms going completely digital. Other authors who weigh in on the subject, such as Cynthia Lewis, Patricia Encisco and Elizabeth Moje (2007) call for a critical sociocultural research that combines many of the new, multi-, and multiple literacies to have a better understanding of agency and identity. Virtual worlds, almost from their inception in the early days of on-line gaming (MUDs, MMOGs and MMORPGs) have developed communities that cannot be contained in one brick-and-mortar institution, such as a school or even national boundaries, but organized around what Gee (2004) has termed “affinity groups”. People with similar interests are able to connect and scaffold the novice players in various ways (chat rooms, video tutorials, in-game live communication). For schools to take on such folk-knowledge would be a radical shift from standardized testing, which assumes there are only a certain percentile of students who will understand concepts well enough to pass on to the next level of schooling. David Cole and Darren Pullen (2010) suggest that interconnected sub-grouping identities, such as cyberpunk and techno-tribalism, are quick to grasp the latest affordances of digital technology, and in a reciprocal fashion, the global learning market produces the tools these new learners need (Pullen & Cole, 2009).

With a great amount of optimism behind the latest sociocultural theories of digital literacy, it is also important to have a critical look at the one of the sources of inspiration for each of these new literacies: Lev Vygotsky himself. Many of his case studies and psychological discoveries were grounded in the notion that play was an important part of children’s mental development (1987). Virtual worlds have more to do with playing a role in a social setting and learning skills needed to advance game-play; the whole purpose of entering a virtual world, it seems, is to play with electronic symbols. Holland *et al.* take up his notion of symbols as markers for agency created by society, yet they are critical of his neglect of “social forms and constraints” that authors such as Bakhtin, Bourdieu and Michel Foucault (1979) were especially attentive to while Vygotsky seemed:

…nearly silent on the kinds of human domination that they revealed. He focused instead on a fantastic, seemingly utopian and liberatory power granted by symbols and human ability to play with symbols: the power to create worlds, effective context of actions, that may never exist apart from the pivot of imagination. (p. 280)

The Russian psychologist died in 1934, his shortened life producing a wealth of studies not just in cognitive psychology, but also art and literature. He would have never known, in his final years, about a young Oxford professor marking exam papers who would suddenly write on a blank page “In a hole in the ground there lived a hobbit” (Carpenter, 1977, p. 230) and by 1937 begin publishing a landmark book that caught worldwide attention for its imaginary world. Everything that Holland *et al.* mention about Vygotsky in the above quote suggest that he would have been a fan of J. R. R. Tolkien’s Middle Earth, and especially if he had live another fifty years, Vygotsky would have been writing papers about the MUD games based upon Tolkien’s novels (Castronova, 2006; Ito, 1997).

A Brief Overview of the Video Game Industry in Japan

In order to link research in digital literacy to recent development in figured worlds, this brief overview takes off from the imaginary case studies Vygotsky never got to write about the inception of virtual worlds and moves into the actual history of the video game industry of another place and time. In Kyoto, Japan, a company began producing playing cards in 1889 and by the start of the digital age, almost a century later, the Nintendo company decided to produce video game consoles (Gorges & Yamazaki, 2010). By 1977, the firm had hired a recent industrial design graduate from the Kanazawa Municipal College of Industrial Arts named Shigeru Miyamoto, who in a few short years would create some of the most endearingly long-lived video game characters: Donkey Kong, the Mario Brothers, and Link from the Legend of Zelda games, among others (Dyer-Witheford & De Peuter, 2009; Paumgarten, 2010, Dec 20). While other video games companies, notably Sega and Sony PlayStation also based out of Japan, have had success with their video game releases, Nintendo has led the industry with its innovation. One worldwide phenomenon was the release of a handheld GameBoy role-play game called Pokémon, designed by Satoshi Tajiri. Not only did it gain critical attention from scholars like James Paul Gee (2004) and Julian Sefton-Green (2004), but as the game quickly grew into a multi-platform franchise, it allowed Nintendo to return to its historical roots by producing playing cards. A decade later, another gaming revolution occurred with the motion-operated and Internet-connected Wii console released in 2006 (referred by its project code name Nintendo Revolution in Squire, 2008, p. 638) is one example of Miyamoto’s appealing design for Nintendo, setting new industry standards. With a long-standing history of innovation and playfulness within the video game industry, it seems strangely inevitable that Internet-based games would be part of a growing problem for children in Japan: IAD.

Research into Internet Addiction Disorder (IAD)

The psychological investigation of this emerging addiction is not confined to Japan: countries across Asia from Taiwan (Lin & Tsai, 2002) and South Korea (Kim, Ryu, Choi *et al.*, 2006) to Iran (Ghassemzadeh, Shahraray & Moradi, 2008) and into Europe with Norway (Johansson & Gotestam, 2004) have all conducted surveys on adolescent addiction in each country. Most of these surveys, including the recent Health, Labour and Welfare Ministry survey conducted in Japan by Higuchi and Ohida, are based on a series of questions devised by Young (1998). The tests for Internet addiction are usually expanded up to twenty questions, each with a scale from one to five, but still based upon Young’s original eight questions (Table 1). A score of 80 points indicated an adolescent may be addicted to the Internet (Sato, 2006).

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|  | Table 1: Young’s (1998) Internet Addiction Disorder Questions (p. 3-4) |
| 1. | Do you feel preoccupied with the Internet (i.e. think about previous on-line activity or anticipate next on-line session)? |
| 2. | Do you feel the need to use the Internet with increasing amounts of time in order to achieve satisfaction? |
| 3. | Have you repeatedly made unsuccessful efforts to control, cut back, or stop Internet use? |
| 4.  | Do you feel restless, moody, depressed, or irritable when attempting to cut down or stop Internet use? |
| 5. | Do you stay on-line longer than originally intended? |
| 6. | Have you jeopardized or risked the loss of a significant relationship, job, educational, or career opportunity because of the Internet? |
| 7. | Have you lied to family members, a therapist, or others to conceal the extent of your involvement with the Internet? |
| 8. | Do you use the Internet as a way of escaping from problems or of relieving a distressed mood (e.g., feelings of helplessness, guilt, anxiety, depression)? |

The questions in both cases are similar to those devised by psychologist to analyze patients with compulsive gambling and alcohol addictions. Other psychologists argue that IAD is not classified as a disorder in the American Psychiatric Association’s Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (Grohol, 2013; Byun, Ruffino, Mills, Douglas, Niang, Stepchenkova, Lee, Loufti, Lee, Atallah & Blanton, 2009) even though Internet gaming disorder is listed as a condition for further study. In their meta-analysis of different test for Internet addiction, Sookeun Byun *et al.* (2009) have this to say about Young’s eight questions:

…if a respondent answered yes to more than 5 of the 8 questions, the respondent could be defined as an Internet dependent user. The cut-off score of 5 was consistent with that of the criteria for pathological gambling. While Young’s instrument has the advantage of simplicity and ease of use, it in no way covers all the antecedents of Internet addictive behaviour, nor does it provide a clearer understanding of the topic. (p. 204)

Other tests for IAD have similar pluses and minuses, and Byun’s team of researcher, from a variety of different academic fields in the United States and South Korea, investigate a full decade of data; interestingly enough, none of the case studies they discuss are from Japan.

Comparing IAD Case Studies in Japan

Information on the study conducted by Higuchi and Ohida is buried somewhere on the Health, Labor and Welfare Ministry website, as an extensive search of the archives from July 1 to November 26, 2013 make any mention of the Internet addiction or the two authors. The same goes for Higuchi’s Kurihama Medical and Addiction Centre, which lists many programs for alcohol and drug addiction, but none for IAD. Somehow the message is getting out to concerned parents, other than the vague details reported in the newspapers. Perhaps a strategic move on the part of researchers Higuchi and Ohida not to make their report widely available on the Internet, either to help wean off those afflicted with the disease, or to drum up more business for the addiction centre by hiding any trace of the report so well that other researcher will need hours of screen time, eventually succumbing to any five of the eight conditions set out in Table 1.

In lieu of this “smoking gun” case study, I will turn my attention to another study of 996 Japanese students attending 13 different junior high schools in Tokyo. The longitudinal study (Horikawa, Hashimoto, Komuro, Ogasahara, Ohno, Amano & Kawai, 2012) took three months in 2010.From this sample of participants, 34 of the students answered five or more questions affrmatively, and the research team determined that close to 3.4% of the participants were addicted to Internet. The most common answers from those classified with IAD was sacrificed study (6) lost of sleep and (4) neglected family time (7) suffered depression and loneliness (8). However, Horikawa *et al.* could not fiad a clear connection between participants’ Internet use and their level of addiction. Nearly all the student had a reason for being on Internet for longer than they expected (5), yet they still had self-awareness, particularly as the fifth question seems to be gear more for addicted people lose track of time while on the Internet yet the junior high students indicate that something else was going on. Others who claimed depressed more often than not felt that they have nothing else to do, rather than being clinically depressed. An interesting connection could be made to the fourth chapter of Holland *et al*.’s (1998) study of United States Alcoholic Anonymous and the space for authoring an identity as a non-drinking alcoholic. For the students in Tokyo junior high schools, the strongest notion of their activities is self-awareness, how much they already know about overusing Internet.

The researchers also point out that there is a lot of research in the world that generally defines Internet addiction, but nobody seems to be investigating this topic methodologically. The relation of cause and effect is unclear since the international research community is not focused on what make Internet users addicted, just seems ready to label some and privilege those who avoid falling prey to the addiction. The purpose of their research was to investigate the interaction between Internet use, lifestyle and social interaction and to make these three areas clear. The method of sampling junior high students who were randomly selected from central Tokyo area could not represent all of Japan. Different cultural context would require different methods. In their conclusion, the most Horikawa *et al*. could make from their longitudinal study was noticing a causal relationship between Internet usage time and the students’ addictive tendency: the stronger the tendency gets, the more usage time increases. Yet the same could also be said of the reverse, that IAD comes from being on the Internet for longer periods of time. They also noticed a difference between students who used the Internet on personal computers and those who used it on mobile phones where the former were using the Internet for a longer time than the latter. The reason for the having different effects between for personal computer and mobile phone users had to do with the affordances of each device; the greater share of IAD was when addicts are at home and they don’t talk to other people. Mobile phones are situated in and with other people, designed to be a portable communication tool. Because of increasing use of mobile phones in junior high schools, the problem is not so prevalent.

Smartphones, on the other hand, started to change these results, depending on what mobile service or apps get used will reveal more about how IAD has had an affect on what may have once been an overlooked group. Mobile services now include social networking services (SNS), blogfeeds, twitter and noticeboards such as Craigslist. Online games are another risk factor: MMORPG that allows for other people to enter into game world is not the social sense of play familiar to Vygotsky and countless other sociocultural theorists. To play in a MMORPG, one simply has to be on-line to other people, therefore lead to an increase in the addiction. Compared to the Higuchi and Ohida’s study, as it is filtered through various media outlets, there is at least some specificity with Horikawa’s attention to technology trends. They mention how the students who would classify as IAD have shifted from two-way texting and RSS feeds to one-way entertainment and collecting information from blogs, homepages and video file sharing such as YouTube. On the one hand, these students are more knowledgeable and self-reliant, yet these skills only seem to increase the sense of alarm over IAD, that they soon will not need to communicate with anyone except through mediated sources.

Analysis

Much of the discussion on IAD disorder can be reduced to a relationship between lifestyle and addiction tendency. Simply put, the more people use the Internet, the less time there is to sleep, interact with friend and family, finish off assignments, etc. When peer interaction and Internet addiction combine, people who are prone to other effects of IAD will be less satisfied with friends, and therefore lead to loneliness and perhaps even the need to escape from mounting addiction issues. In this way, IAD becomes a vicious downward spiral, and the only solution that seems to present itself, at least to concerned parents and educational stakeholders in Japan, is getting the IAD to avoid the Internet by attending fasting camps. The problem works both ways, however, as the Internet addiction seems to grab hold of the child, there is less talking to his or her parents. Yet it begs the question of how much agency the parents have in this situation: are they genuinely concerned for their child’s mental health yet cannot see the signs of IAD, or are they just waiting out increasingly antisocial behaviour from their child until he or she gets shipped off to a fasting camp in the suburbs of Yokosuka? Doubtless with all the media attention, Internet and gaming fasting camps will soon be opening up in other cities, and in countries around the world. It seems to be an easy sell for stakeholders who are not aware of the benefits of digital literacy on children’s mental development, instead they are sold a story about a psychological tendency of addiction, where more addiction is allowed to happen, the easier the child will sink into loneliness and depression. Makes one wonder why the children have access to the Internet in the first place.

Conclusion

If the preceding paragraph took on the tone of one of the articles referred to at the top of the essay, it serves a purpose to show how easy it would be to construct an argument where confusion, uncertainty and fear take over from rational thought. With the exception of the last case study, Horikawa *et al.*, most of the studies on IAD continue to develop the idea that this unclassified condition is the unavoidable result of children not knowing enough about digital technology. The diagnosis reached either by the researchers themselves or by their critics is that more research needs to be conducted to prove IAD as a classifiable disorder, yet it seems like the children are not the ones at fault. Like every theorist with knowledge of sociocultural and figured worlds would argue, children develop in a society that either models their best or their worst behaviour, and that behaviour is what scaffolds the child’s mental development. In a country where cigarettes in restaurants and office buildings on the whole still is permitted, is it any wonder that most young adult want to celebrate their coming of age ceremony in January by smoking a cigarette?

A theoretical framework that emphasizes the benefits of digital literacy to a student’s mental and social development not only needs to happen, but needs to gain wider acceptance in academic circles. As mentioned at the beginning of this essay, much of the current research into this new, multiliteracy is in a binary form: where even most theorist are not sure what it is, but also not sure what it is not. Rather than hectoring some of the best and brightest minds in field of literacy education into making up their mind hastily on a definition of digital literacy, the best way forward is to model the research that needs to be done. In my other paper, for Literacy and Multimodality (LLED 558), I have written my case study that interviews a six-year old child, Tom, as he encounters a virtual world game. Rather than approaching this study with preconceived notions about what a child his age should and would not be able to do in a virtual gaming environment, I strived to let the case study be as much of the boy’s exploration of the this digital world, and my questions were in response to his discoveries, rather than pushing him towards an expected response. When I receive both papers back, I intend to make what corrections are needed, and recreate both papers as an article to submit to journal, or to present at a conference (obviously without this much exposition on my intentions being in the next draft!). Taking cue from the famous misattributed quote: “We need to be the change we wish to see in the [virtual] world” (Potts, 2002) by Arun Gandhi (rather than Mahatma, according to Wikipedia’s entry <http://en.wikiquote.org/wiki/Mahatma_Gandhi#Disputed> - and why would Wikipedia lie?)Reference

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