

UNDERSTANDING THE POWER OF NEW LITERACIES THROUGH VIDEO GAME PLAY AND DESIGN

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In this article, we provide the results of our examination of the range of multiliteracy activities that engage boys' time and attention, and the types of literacy skills and understandings they learn through their engagement with alternative texts. We focus particularly on video game play and creation/composition as a learning activity that consumes a great deal of their out-of-school time. Our observations and conversations with adolescent boys suggest that significant, powerful learning is happening through video game play and creation, and calls into question claims that boys are not succeeding at literacy, instead suggesting the potential for critical engagement with new literacies.

Key words: multiliteracies, technology, video games, composing, alternative texts

Dans cet article, les auteures présentent les résultats de leur analyse d'un vaste éventail d'activités de multilittératie auxquelles se consacrent les garçons à l'adolescence et des types d'aptitudes et compréhensions qu'ils apprennent à maîtriser au moyen de textes alternatifs. Les auteures se sont penchées tout particulièrement sur les jeux vidéo et la création/composition comme activité d'apprentissage occupant une très grande partie des heures passées en dehors de l'école. Leurs observations et les conversations qu'elles ont eues avec des garçons semblent indiquer qu'un apprentissage important a lieu à travers les jeux vidéo et leur création, ce qui remet en question l'affirmation selon laquelle les garçons ont des lacunes en littératie et suggère plutôt que les nouvelles littératies offrent un potentiel sur lequel il y a lieu de réfléchir.

Mots clés : multilittératies, technologie, jeux vidéo, composition, textes alternatifs

"We lead interesting lives because of video games."

- Nick, a 14 year old video game design instructor.

Literacy educators' attention has been recently focused on students' reading and writing success. Despite considerable literature broadening traditional definitions of literacy, it continues to be understood as engagement with print text, most often books. Boys' and girls' alternative literacy practices continue to push educational and parental panic buttons. Media headlines continually suggest that boys are failing to meet reading and writing standards, as measured through high-stakes standardized tests, identifying repeatedly that boys are not "measuring up" in the same way that girls are. These test results, reported widely throughout the world, suggest that there are problems with boys' literacy levels and that solutions can be found by remediation, by more reading and writing, and by appealing to boys' interests. Recent studies in Australia (Alloway & Gilbert, 1998; Kenway, 1995; Martino, 2001), Britain (Millard, 1997), the United States (Newkirk, 2002; Smith & Wilhelm, 2002), and Canada (Blair & Sanford, 2004) have questioned whether simplistic solutions will indeed solve the problem and have sought to look more deeply at the complexity of issues surrounding gender and literacy. These studies have focused on identifying the issues in relation to gendered literacy practices and have addressed a range of issues pointing to the complexity of literacy for boys and the types of multiliteracy activities in which they are actually engaging.

We have examined the range of multiliteracy activities that engage boys' time and attention, and explored the types of literacy skills and understandings that are learned through their engagement. In this study we have focused on video game play and creation as a learning activity that consumes a great deal of out-of-school time of many boys and we determine the literacy skills and understandings embedded in video games. Through our observations and conversations with adolescent boys, we agree with Gee (2003), Johnson (2005), and Prensky (2001, 2006) that significant and powerful learning is happening through the play and creation of video games. If boys are learning literacy skills through a range of multiliteracy activities, why then are there such widely differing stories about their lack of literacy success?

OUT OF SCHOOL LITERACIES

In addressing the literacy problem in any meaningful way and determining appropriate strategies to work with boys in school settings, educators must first tease out the complexities of the problem. With the current concerns about boys doing less well in school, we felt it important to do in-depth research into the literacy practices of adolescents to better assess the validity of these concerns and to reassess the literacy practices and knowledge of boys and girls. What researchers (Alloway & Gilbert, 1998; Blair & Sanford, 2004; Newkirk, 2002; Smith & Wilhelm, 2002) have come to understand is that many males and some female students are finding success with alternative literacies. Literacies such as chat rooms, internet, comic books, cell phones, blogs, trading cards, zines, film creation, and video games are a few of the new and alternative literacies that students are engaging in largely outside of school spaces.

Although it has been reported that boys are not reading or writing successfully (PISA), some research studies tell a different story (Sanford & Blair, in press; Blair & Sanford, 2004). They enjoy a range of fictional works, including fantasy, science fiction, realism, adventure, and mystery. They also read biographies, non-fiction texts, newspapers, magazines, internet texts, Pokemon and Yu-Gi-O cards, graphic novels, e-mails, and comic books. In a less traditional sense of literacy, they "read" TV, videos, and video games. They write and create a similar range of texts, demonstrating sophisticated vocabularies, concepts, and multi-modal literacy structures. As previously identified (Blair & Sanford, 2004; Smith & Wilhelm, 2002) boys seek texts that are purposeful, engaging, active, fun, and meaningful. If fiction offers these characteristics, they willingly engage. If not, they seek other modes of active engagement and enjoyment. Some boys struggle with reading school-based print text, but many are highly literate.

The literacy aspects involved in alternative texts are often undervalued in school because they are seen as mass culture, cultural practices produced for the general public (Hong Xu, Sawyer Perkins, & Zunich, 2005). However, reading non-linear, multi-layered, intertextual texts, as well as reading images and other semiotic sign systems, are some of the literacy skills being practised with these alternative texts.

The New London Group (1996) recommended that a broadened understanding of literacy needs to be adopted to address, “the culturally and linguistically diverse and increasingly globalized societies” and to “account for the burgeoning variety of text forms associated with information and multimedia technologies” (p. 61). In other words, literacy pedagogy needs to move beyond the “formalized, monolingual, monocultural, and rule-governed forms of language” (p. 61). Once this perspective of literacy is adopted, adolescent male literacy practices can be recognized for their sophistication and complexities. Video game play and creation is a growing phenomenon, especially among boys, which combines numerous complex literacy skills in one activity.

This research project is concerned with how adolescent males practise literacy through video game play and creation. Through this study, we have been better able to understand their literacy skills and practices, as well as their perceptions of what constitutes literacy. Clearly a disconnect occurs between school literacy practices and those that our male participants practise out of school; the interviews we have had with boys indicate the unique richness of their literate lives that is not being recognized in school; teachers do not understand or ignore many of their literacy practices as teachers address curriculum demands.

Although we recognize video games as powerful texts and learning experiences, we feel uneasy as we watch the speed with which adolescents become immersed in a virtual world that is often devoid of social conscience and social justice. Lankshear and Knobel (2003) suggest, “being literate involves much more than simply knowing how to operate the language system. The cultural and critical facets of knowledge integral to being literate are considerable” (p. 12). If their claim is right, then educators need to explore both the potential benefits and dangers of this powerful new literacy: video games.

THEORETICAL FRAMEWORK: GENDER, LITERACY, AND VIDEO GAMES

Hagood (2000) suggests that schools as social institutions choose and participate in particular literate practices promoting specific social ideas and beliefs. Because, she says, learning occurs in developmental stages, curriculum and assessment have followed linear patterns. However,

recent research findings, as noted below, have revealed that learning and literacy are more complex than has previously been thought.

As with all learning, literacy learning is affected by scholars' changing conceptions of knowledge. As noted by Lyotard (1984), in today's postmodern world of intensified digitization, knowledge and learning are undergoing rapid shifts; the learner who has technological knowledge and can access information has an advantage. Nevertheless, schools have not as yet recognized the impact of technology in adapting their practices (Prensky, 2001; Shaffer, Squire, Halverson & Gee, 2005). Rather, school practices have been focused increasingly on "means and techniques for obtaining [optimally] efficient outcomes" (Marshall, 1998, p. 8) and not on aims, values, and ideals. However, four momentous changes related to literacy "are taking place simultaneously: social, economic, communicational and technological" (Kress, 2003, p. 9); the combined effects of these are profound. These factors are having a great impact on the nature of literacy in today's society, an impact that has not yet been acknowledged in schools.

Gender as a social construction has in recent decades been identified as a significant impact on literacy, seen in the negative reporting of boys' literacy successes in school and also in the significant engagement boys have with alternative literacies such as video games.

Literacies presented through legitimate school practices as well as out of school practices "participate in constructing, circulating and naturalizing gender norms" (Rowan, Knobel, Bigum, & Lankshear, 2002, p. 59). As suggested by Gilbert and Gilbert (1998), boys' and girls' learning even before they start school has been different: boys' learning has introduced them to performances of activity and "maverick individualism" (p. 205) while girls' learning has introduced them to performances of submission, passivity, and courtesy.

What it means to be male is continually being negotiated and renegotiated in today's society. From a poststructural perspective, there are multiple ways of being a male and creating or negotiating male subjectivities. These multiple and diverse positions open up the possibility of constituting subjectivity as multiple and contradictory (Davies, 1992) – every individual male accesses, performs, and transforms multiple versions of masculinity in various contexts and at

various times. Masculinity is performed in multiple ways; however, hegemonic versions of masculinity are most highly valued, that is, performances of masculinity that embody “the currently accepted answer to the problem of the legitimacy of patriarchy, which guarantees (or is taken to guarantee) the dominant position of men and the subordination of women” (Connell, 1995, p. 77). The dominant hegemonic masculinity is most often represented in the video games that male adolescents play – the virtual worlds presented to the players are at the same time seductive and troubling.

LITERACY LEARNING AND VIDEO GAMES

Many researchers (Gee, 2003; Jenkins, 2000; Lankshear & Knobel, 2003; Shaffer et al, 2005; Williams, 2005) recommend that video game play is a literacy practice that educators need to take more seriously and incorporate into their teaching and literacy curricula. Video games provide multiple positive learning opportunities. Gaming can encourage imagination, problem-solving skills, positive engagement with computers, as well the practice of “leadership, competition, teamwork and collaboration” with multi-player games (Jenkins, 2000, p. 120). The learning that occurs with video games is enjoyable and challenging, while video games employ well developed scaffolding in their teaching (Gee, 2003). Norton-Meier (2005) has also acknowledged the powerful learning that is embedded in this so-called entertainment: “turn taking, risk taking, decision making, and even content about our world is the focus” (p. 429).

Based on a socio-cultural perspective in examining new or alternative literacies, we draw on Green’s (1997) three-dimensional model to examine the complexities of literacy learning, both in its traditional and alternative forms. As Green (1997) describes, scholars need to raise questions about operational dimensions (basic competence with the skills of reading and writing), cultural dimensions (competence with the meaning system of literacy as social practice), and critical dimensions of literacy learning (awareness that all social practices, and thus all literacies, are socially constructed and selective).

Gee (2003), Lankshear and Knobel (2003), and Williams (2005) suggest that video games need to be examined more critically. Norton-

Meier (2005) concludes that video game play is “not about the teaching of facts; it is about the action and interaction of values, dilemmas, and decisions” (p. 430). Lankshear and Knobel (forthcoming) use the term “attention economics” to describe the inundation of information (cell phones, internet, email, chat rooms, movies, television) that constantly demands attention and leaves little time or energy for reflection. Attention is considered a scarce resource because of the abundance of information and as Goldhaber (1997) suggests, “some of the most popular uses of computers, fax machines, networks, phone systems, etc., have more to do with getting attention than with directly aiding what they are supposedly about, increasing productivity of an organization or society as a whole” (n. p.). Attention is easily attained by the effective scaffolding, continuous assessment, and innovative graphics. If, as Goldhaber argues, the new attention economy is “based on endless originality, or at least attempts at originality” (n. p.), then those adolescent males who are engaging in creating video games that attain attention are the ones who are learning how to be successful in leading the new economy and influencing others.

These technological discourses “have their own more or less distinctive language uses and they shape our identities in particular ways – as we take on their beliefs, purposes, ways of speaking and acting, moving, dressing, and so on” (Gee as cited in Knobel & Lankshear, 2003, p. 13). Therefore, the video games that adolescent males engage in for numerous hours a week initiate them in the discourses of the gaming culture: a culture that is largely unquestioned and unexamined. We believe that as we acknowledge video games as a powerful learning tool (Gee, 2003), we must also find ways to raise critical questions relating to these texts and to disrupt unexamined hegemonic masculine attitudes related to power, status, and exclusivity.

METHOD

Over the course of one summer, when nine week-long video game making summer camp sessions were held, and the subsequent fall, when two five-week sessions were held, we obtained ethics approval and then observed the adolescent instructors who had indicated an interest in being part of this research study, as they worked with younger students,

and followed up with weekly interviews. The instructors were hired by an entrepreneur in a mid-sized western Canadian city to run the camps in his video game facility. The instructors were 11-16 years old, predominantly male, from a range of educational and socio-cultural backgrounds – the one thing they had in common was their interest and expertise in video games. Some of them had wanted to take the video game making sessions, but their skills were too advanced and so were hired as instructors instead. The students were also from very diverse backgrounds, mostly males aged between 8 and 12, and although most were very interested in video games, that was not the case for all of them. In some cases their parents were looking for interesting activities for them over the summer months.

Observing and leading focus group interviews enabled us as researchers to examine how the adolescent males were constructing their world as it existed in this particular context. Drawing on a feminist critical perspective, we were conscious of the multiple ways that the participants enacted gendered identities, while also encouraging dialogue to transform as they began to reflect on their experiences as male instructors. Our research questions framed the focus group interviews and our observations of the participants as they played, created, and assisted others in constructing video games: What success are adolescent males finding in out-of-school literacy practices? What literacy practices are occurring when adolescent males participate in instructing the creation of video games? and Where is a space for adolescent males to think critically about video game content?

Data Collection and Analysis

Observations were an effective method to use because they provided us with examples of how language (words, body language, tone, expression) constructs the way instructors, our male participants, understood gender roles and expectations. We took field notes of, among other interactions, examples of these language uses from each session. At the end of each session, we held focus group interviews with the instructors. Focus group interviews were spaces for catalytic thought (Hart, 1995; Parsons, 1994). The participants had not experienced many, if any, opportunities to be approached as experts of video games because

video games are often the brunt of much negative commentary and blame. During the focus group interviews, the participants listened to their peers speak, and had time to gather their own thoughts. This interview space allowed for reflection about their role as a person of influence that would not have occurred with only observations and were more appropriate than written reflections because the setting was based on being disassociated from school-type learning. Our observations and interviews were supplemented with digital images of the games being played and created as well as audio recordings of the conversation between the game instructors and their students. The focus group interviews and individual interviews with the instructors were documented, analyzed, and coded for significant themes, using Green's (1997) three-dimensional model of literacy.

It became apparent through the interviews and observations that the adolescents involved in teaching these camps had developed significant background in playing video games and through their involvement in the focus group interviews thought more explicitly about their practices. They were interested in sharing their knowledge and were articulate in conveying their ideas and conceptions about learning through video game play, even though they generally did not connect it to literacy learning. The environment was a rich site for building a more extensive understanding about the literacies that the participants were learning through video game play and the role that gender played in their learning.

FINDINGS

The intersect of gender, literacy, and video game play is complex. Green's (1997) three dimensional construction of literacy offers an accessible method of examining the often elusive interweaving of gender, literacy practices, and video game play that occurs while these boys (both the instructors and students) participated in the complex negotiations of playing and instructing video games.

Operational Literacy

Operational literacy "includes but also goes beyond competence with the tools, procedures, and techniques involved in being able to handle the

written language system proficiently. It includes being able to read and write/key in a range of contexts in an appropriate and adequate manner" (Lankshear & Knobel, 2003, p. 11). We saw many examples of operational literacy being practised by the adolescents we worked with – they are able to read both visual and print-textual instructions, use and adapt semiotic systems to meet their needs, and create icons to communicate with future players of the game being created. Participants and their students recognized the differences in the rules of creating print text and video game making. This awareness is exemplified in the following example observed by one of the researchers in a teaching session, one that offers suggestions for why boys may be seen as less successful with print-based literacy practices:

Two students were creating potential avatars in their notebooks, and one asked the instructor, "what if we spell wrong? Does it matter?" The instructor's response was, "Only we need to understand it, if you can understand it it's okay." "What will the game look like, does it need to have writing on it?" "You can put writing on it if you want, but mostly you use your characters and colours and stuff..." The students proceed to spend a considerable amount of time drawing and naming their characters.

To non-video game players, staring at a video game screen may seem like numerous chaotic digital graphics, odd sound bites, and purposeless plot; yet the sophistication on the screen is impressive when awareness of the symbol system and background knowledge is enhanced. The players take much of video game operational literacy for granted because of the large amounts of time that they have devoted to learn the symbol/language system, which is likely why the instructors we interviewed did not correlate video games with literacy learning. However, they continually handled the semiotic systems efficiently and effectively, creating good guys and bad guys that were easily distinguishable, structuring backgrounds, developing character movements, rules for movements such as jumping, disappearing, moving weapons – simple programming – and creating more and more challenging stages for the games. In one teaching session a student, in creating his background, commented, "I'll make this level blue, because

it's happy, and lots of green grass, and then this one will be red, 'cause it needs action, and bloodshed...."

The operational literacy dimension of video games is one of the main reasons why those less familiar with the genre (parents, teachers, many girls) feel intimidated by video games, lacking competence with the skills and processes. The multiple semiotic systems on the screen simultaneously can be baffling to novices – information that provides life data, damage information, present weapon in use, roving map, and written instructions; this system is overlaid with symbolic sound, background music, and verbal instructions – occurring at the same time, while the player is making decisions and playing the game. The controller is another tool that needs to be understood and used in an appropriate manner for success. In addition, video game players often need an excellent ability to explore on the internet to either locate clues or more information about their game, or to play their game online. One of the instructors decided halfway through the creation of a game to change the rules from a mouse controller to a keyboard controller, and used the tutorial to find out how to do it, and then showed the students, "Exit this, do you know how to do it, yea, you click there, okay..." and then explained – "It makes it easier to control your characters, watch... now you try it." Again, the oral language was heavily supplemented with demonstrations and gestures.

Within a two hour instructional period of creating video games, the students and instructors were engaged in many engaging and challenging operational literacy practices. Reading instructions and learning to recognize the semiotics of the software program were crucial in being able to continue designing the game. The instructors also used technological language to describe aspects of the screen that students usually recognized. To bridge the gap between technological video game discourse and the learning of the software program to create a game, one instructor and student found common ground. As recorded in one researcher's observation notes:

Student: How do I find a knight like you did? Instructor: "Get." The student did not directly go to the 'Get' button on the screen. The instructor jumped up to the wall screen and pointed to the 'Get' button. The student followed the non-verbal cues and pressed 'Get.'

There were few words spoken and yet meaningful communication clearly occurred. The student was not showing the ability to follow verbal instruction, whether from lack of ability or distraction by the screen semiotics, and the instructor recognized the need to communicate more effectively.

Generally, the students had no problem remembering the use of icons, moving between screens, and understanding the functions. They learned to understand the purpose of the directions in relation to computer programming, for example, "do in turn," "and if." Sometimes they accepted suggestions from the instructors: "Go to the blue thing," "Turn up the speed, it's kind of lagging." Sometimes they had to check with the instructor: "Do random, right?" "No, you need to drag all the movements into 'random.'" Sometimes the instructors gave general advice about the technology they were using: "Remember, computers aren't that smart, you haven't made a rule for facing left. The program is made to do one thing at a time, but here's how you could do it, try this new crouch rule." Students were sometimes directed to the tutorials for the game-making software and were required to read the instructions as they practised some of the programming skills. The instructors themselves sometimes had to refer to the tutorials for rules that they were unsure of, and had to read the instructions themselves. Often though, the instructors and students had learned how to read the semiotics enough that if the software program is decent, they knew that they could figure out what to do next by exploring and experimenting (Prensky, 2006).

Although the instructors were insistent that these camps "weren't like school," the students engaged in more traditional literacy practices as they wrote and sketched their ideas into their journals. The journals were a required component of the camps and were used by most of the students, but there was no required format and the students were free to use them to support their game development in whatever ways that were useful for them; consequently, the journals were used on the first two days of camp and were replaced by discussions between the campers and instructors and direct action with the video game software. The journals were not effective tools to achieve continuing success,

especially because there was limited time to complete three levels of a game.

The operational literacy dimensions are complex but essential when playing and instructing video games. The students became more capable and confident about their video game designing and playing as the instructors and the tutorials challenged them to build on their understanding of and use of their operational literacies; as one student learned from his instructor of the complexity of his original journal plan, he modified the number of characters and rules he had planned to make the game manageable and possible. The instructors' appreciation of their students' development is also evident, as one commented "Sweet!" after his student created a rule that enabled his character's sword to move. The instructors' and the students' competence and confidence with their ability to manipulate the video game designing software increased as they together experimented with new uses of rules, new special effects, borrowed ideas from peers and from other well-known games. Additionally, as Gee (2003) identified, the games make considerable use of repetition, a powerful learning tool when combined with enjoyment and challenge, and provide a great deal of latitude for the participants (instructors and students) to employ their not very subtle humour in creating characters and situations. The students and instructors shared a common culture. One of the more experienced instructors in particular talked to the students as peers, commenting, "You don't have to do what I say, it's only an idea, but it will be funny..." He connected to his students easily and was also having fun and learning more about the operational aspects of video game creation.

Cultural Literacy

Operational, cultural, and critical literacy dimensions are overlapping aspects of negotiating the language systems and are not hierarchical in importance (Green, 2002). We observed the overlaps in many interactions between the instructors and their students. Cultural literacy "involves competence with the meaning system of a social practice; knowing how to make and grasp meanings appropriately within the practice ... this means knowing what it is about given contexts of practice that makes for appropriateness or inappropriateness of

particular ways of reading and writing” (Lankshear & Knobel, 2003, p. 11). Video game players’ operational literacy allowed them to communicate with other video game players with more ease, although often the communication was not articulated in conversation to create affinity groups but rather by gesture, single words, and through icons presented on the screen (Gee, 2003) as they demonstrated cultural literacy. During focus group discussions the conversation sometimes veered towards the participants discussing their favorite games and critiquing other games. Other topics of conversation included their avatar (video game character) choice, assessment of the video game graphics, and the type of technology they used to play games. While the instructor was helping a student complete a section of a game, one of the students said, “That would be cool if that could happen to planet Earth.” The other student then commented, “I wonder if God could do that.” The instructor, in a position of power, responded, “I don’t even know if there is a God, ‘cause I’m not Christian.” The second student then responded again, “I don’t have a religion.” At this point of a fairly critical issue, the instructor said to the second student, “Do you talk all the time?” The conversation was ended. The instructors can readily connect to the ideas of the students; they share cultural capital. At the same time, they elicit respect from the students who value their skills and expertise: “Can you create that weapon for me, you’re so much better at it.” One student commented, “I think I’m going to be a video game designer when I grow up – my graphics will be awesome.”

During game play, the instructors and their students often concentrated on the game, yet they often were involved in what might be called banter: they talked in abbreviated sentences to each other, at each other, and sometimes to themselves, usually facing the screen for the entire time. An example of the abbreviated talk took place after the game creation and the students and instructor were playing a video game; the conversation surrounded a specific gender issue, as noted in one teaching session:

Student 1: I want to be [female character name in the video game]

Instructor: No, let’s all be guys.

Student 1: No....why?

Instructor: ‘Cause she’s a girl...

Student 1 chose a male character instead.

Another example of the banter observed in a teaching session is as follows:

Student 1: Oh! Oh! Falcon miss.
Instructor: Enter stairs.
Student: Hee Hee
Instructor: Oh my gosh. This isn't working as well as I planned.
Student: I see you. I see you.
Instructor: No you don't. You just think you do.

The beginning of the banter is of two people talking to themselves, and then merges to become a conversation together. Talk about video games or video game creation often went in and out of this type of pattern.

Part of the cultural literacy dimension was the instructors and their students' awareness of how the media, family, and society felt about video game play. They were articulate about what they learned from video games, and what were the potential positives and negatives about game play, as noted in an interview with some of the instructors:

"Playing video games changes you, it can be kind of addicting, but I'd rather play than anything else." "Playing video games helps with online courses, helps me to concentrate." "Definitely helps my hand-eye coordinate, helps when I play tennis, my reaction time is better, I just think differently." "I take out my anger in video games, you know, my brother, parents." "We lead interesting lives because of video games, I wouldn't skate if I didn't do video games, or BMX, or karate."

They also recognized that people play video games for different reasons: as a pastime, as a social activity, as a mental challenge, or as a way to battle loneliness. These adolescents found a social community, a purpose for developing skills, and an awareness of their community and the world beyond. They found common ground and learned vitally important literacies for the twenty-first century technological world.

Listening and talking were also two essential practices that happened during these lessons. The instructors had to practise good listening skills to know what kind of game the students wanted to create.

They also had to listen to more than just words. One instructor explained that he adapted his teaching depending on the facial expressions of his students. He was reading whether they understood what they had to do or if they were pleased with what they had created. They also recognized that they had to encourage listening skills in their students: "You need to try it." "I already tried." "You tried, but you weren't listening." In another instance, a student wailed, "I can't do it," to which the instructor responded, "If you would just listen.... Remember, you have to get this done if you want to play video games later."

Although listening was important to instructors' teaching, talk was also important in negotiating meaning, helping students develop ideas, and in responding to ideas. It was also fascinating to examine language use between the instructor and students as they negotiated power structures, turn-taking, and valuing of ideas. For example, in one week's session, a female (not a participant in this study) was hired to instruct at the video game camp and found her students to be difficult to manage. One male instructor offered to help with her students, and was more easily able to connect with them than she had been able to manage. Through talk, he both connected with the students on their level and at the same time required them to show respect, as the following conversation shows:

Instructor: Since I'm so awesome, I can do this.

Students: [laughing, talking to each other, making jokes]

Instructor: Next person who talks doesn't get any help on his game.

Silence.

Student: [burps]

Instructor: Say excuse me.

Student: You talked! You can't get help!

Instructor: [sarcastic tone] Oh my gosh. I'm the master instructor. I can't get help.

Student: How do you know?

Instructor: How do I know I'm the master instructor? Cause I'm the one with the most knowledge of the program - more than Jason [the facility owner]. (observation notes, July 15, 2005)

The instructor reinforced the social rules of knowledge and experience as symbolic of power and, therefore, he effectively established a hierarchy between himself, the students, and the other instructors.

Very rarely would there be silence in a room for very long. Whether they were giving instructions, laughing about a character or its actions, thinking their decision making out loud, or talking about what they did on the weekend, these adolescent instructors were involved in a lot of talk. Positive feedback was another aspect that was evident in the instructor's teaching practice. One instructor praised his students by commenting: "I like the shark you created. I like how the mouth is open and shows what's behind it." "Good work today guys. You did lots of work today," and on another day he said, "That stage only took us 10 minutes so tomorrow should be a fun day!" Providing positive feedback is an aspect of cultural literacy in that our Western philosophy believes learning requires reinforcement.

Gee's (2003) description of active learning includes preparation for future learning. The instructors noticed some of the learning platforms that they were building on. "Resumés" was a frequent answer to what were they gaining from teaching video game design. For most of them, this was their first job and they recognized that they were learning to work for an employer, they were learning to be accountable, they were showing responsibility beyond their homes or school life, and they were being shown their worth by being paid. All these skills prepared them for their future places in the workforce. The instructors also suggested they were learning to have more patience and to keep an open mind. When working with students who were supposed to complete a game in one week, they realized that they had to work with the students for success to occur, and because the students were paying the money for the camp, the instructors also had to make sure that the students were happy with their game. Another example of their preparation for future learning was in the instructors' ability to analyze and think ahead of their students. Their minds were actively thinking about the next step for the student and figuring out the problem solving that was required when creating rules for the game so that the game worked properly and made some sense. One instructor's comments revealed his immersion in the lesson: "We're doing a different enemy for stage 3, aren't we?" and

“We’ll need some hiding places, ... if you make it too hard, you’ll die and everyone will laugh at you – it’s quite shameful.” This instructor was not only including himself as part of the team creating the game, but also continuing to keep the students thinking about the next plan for the game, and suggesting ways to be more successful as is evident in his last comment regarding presenting the game to the rest of the camp.

As the students created their characters, backgrounds, and actions, they showed awareness of literary strategies and symbolism. As mentioned previously, one student made decisions about background colours because blue sky and green grass suggests “happy” and red is suggestive of action and bloodshed. They juxtaposed colours and character types to suggest different types of action and character development, and developed actions that provided a critique about their culture and society – cheerleaders and other popular school figures, war and violence, fast food outlets, pollution. This grasp of the cultural dimension overlaps with the critical literacy dimension.

Critical Literacy

Critical literacy addresses “awareness that all social practices, and thus all literacies, are socially constructed and ‘selective’: they include some representations and classifications – values, purposes, rules, standards, and perspectives – and exclude others” (Lankshear & Knobel, 2003, p. 11). Although Gee (2003) suggests that critical thinking occurs during video game play, we argue that unless taught how to notice and critique the social values and assumptions in a game, video game players are mostly unaware of the broader social practices embedded in video game content and play. Video games are not created to allow for reflection or contemplation of values: to succeed a player must accept the game rules, rules that are steeped in particular values and assumptions about the way the world works. *Guild Wars*, *Burnout Revenge*, *Mercenaries*, *Doom*, *Halo 2*, or *Devil May Cry 3* are games that the adolescent male participants played and are games that promote hegemonic Western masculine traits of competition, strength, speed, aggression, and domination. Video game playing then becomes problematic in that the values being stabilized through these games encourage the inequities and injustices that exist in society.

Neither parents nor teachers are addressing critical literacy dimensions of video game play. The individual and focus group interviews we conducted created a space in which the male instructors could further question the issues that were raised within and surrounding game play. On their own, the instructors did not seem to take up "critical" in a social justice way at all; they did not discuss the sexist, racist, or homophobic attitudes and presentations of the video game characters. Although not all the students created games that included weapons and destruction, many did, and the instructors did not question or problematize their decisions in any way. Conversely, the weaponry and demolition that provided considerable amusement for the participants was viewed as "cool." One instructor queried, "Is your character going to have a weapon, or jump on them?" "I was going to have him throw a ninja star." "That's cool." Another student was assisted in making a rule to kill all the evil octopi, and another wanted to lop off the heads of the cheerleader characters. In another exchange, the instructor commented, "You don't have to go on a murderous rampage" at which the student responded, "But it's fun," and the instructor rejoined, "You don't *have* to, but you can!"

The creation of video games appeared to be an avenue in which instructors and students placed into their games their interpretations of worldviews and values. The students who were fans of a particular video game, like *Halo*, wanted to recreate the same type of game, with presumably the same values and rules as the original game. However, once the students understood the limitations of the *Stagecast* video game software, they then began being more creative and selective of their games' purposes and characters. Although the instructors understood that video game design is difficult, they were also critical of the limits of the software that they were working with because they were limited to 2D graphics and only certain technical options, such as creating realistic hand-to-hand combat. Experiencing the world in new ways was also evident when the instructors had to explain the criteria for a good game created during the camp; where popular video games on the market tend to get high ratings for the realistic graphics, the 2D games had to be judged differently. "Funny" and "amusing" were two of the key attributes in making a good game during this camp.

The difference between playing video games and creating video games in regards to critical literacy is the difference between consumption of the medium and the production of the medium. The possibilities become empowering when individuals begin to create their own cultural products. However, opportunities for engaging critically with ideas and worldviews need to be created for younger and older youth alike. Without the creation of spaces where adolescents can consider their actions and beliefs, their beliefs and values will remain largely unexamined and undisturbed. If, as Lankshear and Knobel (2003) suggest, literacy includes critical and cultural facets of knowledge, scholars need to problematize the seamless qualities of video game play and creation and create spaces where players can step back from the powerful, immersive qualities of game play and examine values that, implicitly or explicitly, support violence, war, inequity, racism, sexism, or suffering of masses of the earth's populations. We believe that adults – teachers and parents – have an obligation to learn more about video game play and development so that they can create spaces for critical examination of the games and of the players' own beliefs and values, potentially changing harmful aspects of video games while enhancing their powerful benefits and learning potential.

The instructors did have an opportunity to practise critical literacy through their critique of how to teach effectively. Relying on their own extensive experience with teachers, the male instructors used some effective teaching techniques and tried to adopt other techniques to create what they felt was an effective learning environment for creating video games. The most frustrating aspect for the instructors was figuring out how to manage the students who had difficulty sitting still, paying attention, or not learning the software program quickly enough. Comments, such as "you have to put on a caring face," and "it is hard to focus them," suggest that the instructors felt aggravated at times. These frustrations are similar to those challenges classroom teachers contend with as they figure out how to best facilitate and instruct the individuals that make up a class. The instructors did just that. They often commented on how they adjusted their instruction to best suit the student and the situation. Four of the instructors explained how they taught differently or similarly to teachers they knew: "I don't yell at

students...I gently point them in the right direction," "I give suggestions rather than telling," and one instructor explained that he had to warn a student that he would not be allowed lunch until he completely finished a task. At the end of the week, after having dealt with a student whose behavior was challenging, one instructor commented that he felt bad for his teachers; according to him, he was the type of student to question authority and he realized how demanding this could be on teachers. With more opportunity this dialogue would lead to some critical questions about authority, power roles, and inequality that these instructors were more than capable to contemplate and discuss.

CONCLUSION

There is no doubt that new literacies are abundant and are being taken up by adolescents outside of school time. Video games are one of the new literacies that offer powerful literacy learning, especially in the operational and cultural literacy dimensions. Although the instructors in our study would not call video game design "literacy instruction," our observations were replete with rich literacy practices. According to Gee (2003), "learning is or should be both frustrating and life enhancing. The key is finding ways to make hard things life enhancing so that people keep going and don't fall back on learning and thinking only what is simple and easy" (p. 6). Video game playing and instructing provided challenges and interest for the participants. With further understanding of the potential of video games, we believe that parents and educators can guide students to practise more critical dimensions of literacy involved in video game play and creation.

Jenkins (2000) says, "We should instead look at games as an emerging art form – one that does not simply simulate violence but increasingly offers new ways to understand violence – and talk about how to strike a balance between this form of expression and social responsibility" (p. 120). Through follow-up conversations with the adolescent instructors, we are able to see a powerful space for them to take up a critical stance in relation to power relations. Although the critical nature of their comments currently seem to relate to how well the game can be operationalized, trouble-shooting of game glitches, and problem-solving strategies, tremendous potential exists for in-depth

critical engagement with the world – if educators and parents begin to engage. There is need for all citizens to engage in critical discussions of critiques of power structures, social relations, and gender relations.

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