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Gaming capital: Rethinking literacy

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In rethinking literacy education in light of unprecedented technological change, this paper reports on adolescent gamers and their accumulation of gaming capital. This is in opposition to more pervasive assumptions about gaming as mindless entertainment, learning simulations, ideological tools and interactive mediums for the masses. We see the need to research the medium of games in their entirety, exploring their uniqueness as a medium—while at the same time—making connections to a wider media ecology (Fuller, 2005) that includes more than the games themselves. This media ecology of videogames is demonstrated in part by the ‘paratextual’ (Consalvo, 2007) industries that support game play, production and design. The ‘paratext’ is central to gaming capital in creating individual and group systems of distinction within gaming culture. Because we understand videogames as actions across social fields enacted through the actions of players or ‘operators’ on software, we also deem it necessary to understand both the operator and machines’ diegetic and non-diegetic actions (Galloway, 2006). This distinction allows us to think about games as more than texts, literacy practices and narratives, which highlights games’ significance in technoclature as systems (Salen, 2008), procedures (Bogost, 2007), algorithms (Galloway, 2006; Wark, 2007), configurations and code (Lessig, 1999; Manovich, 2001). In conclusion we provide a series of interview questions developed to uncover adolescents’ gaming capital. We also propose a heuristic to map a players’ total volume of gaming capital to better understand how gaming capital establishes trajectories of exchange between cultural and economic capitals and its implications for literacy education.

Keywords: Gaming capital, paratexts, media ecology of videogames, literacy

Introduction

Traditional approaches to videogames in education often involve the task of analysing or discussing one or two specific videogames in the classroom. Our position is not that this approach is flawed, but rather that the skills and literacy practices around videogames are best understood as imbricated to other forms of digital media and global youth culture. This is why we employ the notion of the media ecology of video games to conceptualise researching teaching and learning *through* the medium of videogames. The media ecology of videogames signifies two key elements; first that games are consumed, produced and played not simply as a machine/operator action and secondly that games themselves are compossible systems that have diverse potential combinations. Both the operator and the machine itself are important to the media ecology of videogames. The videogame is an algorithmic machine where “game and the operator work together in a cybernetic relationship to effect the various actions of the videogame in its entirety”

(Galloway, 2006, p. 5). There are four types of action in videogames: diegetic machine and operator actions and non-diegetic machine and operator actions. The difference is that the machine actions are performed by the hardware and software, while the player performs the operator actions. Diegetic actions are actions which take place inside the gameworld and non-diegetic actions are exterior to the gameworld although they may resonate in the gameworld. By thinking about videogames this way, we are better able to understand and investigate the entire medium.

We are interested in the intersection of gaming and literacy that goes beyond simply treating games as texts to be integrated into the curriculum. We view gameplay as action with consequences, which involve the exploration of risk, possibility, identity and subjectivity. Video gameplay extends the player into new domains that lay outside reading, writing and visual culture because they are *enacted* through gameplay and actions in virtual and non-virtual worlds. Important in our discussion, is an understanding about how we situate ourselves within and across the fields of game studies and literacy education. To do this we deem it necessary to provide understandings of videogames and gaming themselves within the media ecology of games. Later, we elaborate and discuss these understandings in light of paratexts, gaming capital, literacy as a form of cultural capital and our conviction that education, particularly literacy education, must respond to the growing economic and social significance of the global games industry. In conclusion, we propose a heuristic to map a players' total volume of gaming capital alongside interview questions we believe will allow us to understand how gaming capital encapsulates cultural, economic, social and symbolic forms of capital that are embodied through the knowledge, skills, and dispositions of the bodily habitus within local sociologies of gaming.

Videogames and gaming

Videogames are cultural objects, bound by history and materiality, consisting of a machine and a game simulated in software. Galloway (2006) puts it this way:

The machine will typically have some sort of input device, such as a keyboard or controller, and also have some sort of intelligible surface for output such as a screen...Loaded into the machine's storage is the game software. Software is the data; the data issue instructions to the hardware of the machine, which in turn executes those instructions on the physical level by moving bits of information from one place to another, performing logical operations on other data, triggering physical devices and so on. The software instructs the machine to simulate the rules of the gaming through meaningful actions (p.2)

The player interacts with the machine by communicating with the hardware and software. This interaction includes inputting (via input devices) and receiving (via output devices) codified messages. The sum of these messages is *gaming* (Galloway, 2006). Thus we see the game as a system that is enacted through play (separate from the skills of playing). For us, play is about the possibility of opening spaces for movement or action within the

media ecology of gaming despite games being rigidly structured through coded software and algorithms. Through gaming, gamers embody a procedural literacy where they “read and write procedural rhetorics—to craft and understand arguments mounted through unit operations represented in code” (Bogost, 2007, p. 258). The literacy practices procedural literacy demands are: an understanding of the rules of the system; the significance of these rules over others; claims about the world the rules make; and the gamers response to those claims. These procedural literacy practices inform how we view the notion of gaming capital. These ideas are further elaborated below.

Unit operations, procedural rhetorics and procedural literacy

Unit operations are modes of “meaning-making that privilege discrete, disconnected actions over deterministic, progressive systems” (Bogost, 2006, p.3). In general they are in opposition to “system operations” that privilege overarching structure for generating their meaning. In terms of literacy practices this means that moments or fragments of play are as significant as the game in its entirety. These individual unit operations might take the form of actions, movements, and/or configurations, which are equally as significant as looking at the games’ structure as an entire system. The benefit of this approach is that it allows us to understand gameplay and the acquisition and exchange of gaming capital.

Videogames, due to their basic underlying coded rules or procedurality open a new domain for literacy and rhetoric. Procedural rhetoric refers to the ways videogames enact ideology in their computational structures by using rule-based representations and interactions to convey a meaningful and persuasive argument in the code of games. This is enacted through gameplay and may be accepted, negotiated, or rejected by the gameplayer. Understanding how procedural rhetoric operates in the design of games can help us as researchers begin to make claims about how things work in games. The reason why we think procedural rhetorics is important, is that it describes the unique process of meaning making within gameplay. Furthermore, procedural rhetoric is necessary for understanding procedural literacy, which provides us with an initial metalanguage to investigate adolescents’ gaming capital.

Videogames and gameplay embody a form of procedural literacy because verbal, written and visual rhetorics inadequately account for the unique properties of procedural expression common in computer games. This procedural expression cannot exist without the active participation of the players and the machines, because videogames on their own exist only as static computer codes. This makes videogames themselves actions (Galloway, 2006) because they only exist when enacted (when the computer/machine is powered up by the player and the software is executed). However, this action does not take place in a discrete field. We want to situate the action and research of gameplay in a media ecology of videogames because it accounts for the key role of how gaming capital and paratexts operate and how gaming literacy practices segue into other fields.

Paratexts

Paratexts play an important role in creating connections and distinctions between

individuals in gaming capital and are an important common ground for the basis of social relations formed around videogame play. Rather than taking place in a vacuum, gameplay occurs in the context of the culture of videogames (Consalvo, 2003: 331; Newman, 2004: 57-58). New technologies allow information to be easily shared, modified and distributed. They have a key role in sustaining the culture of videogames (Consalvo, 2003; Myers, 2003: 178; Newman, 2004), the videogames industry – and associated sub-industries – have also been active in sustaining this culture through various publications and promotions (Consalvo, 2007; Kline et. al., 2003). These mixed productions of videogame culture, integral to the industry, but also a product of the videogame audience, are collectively labelled ‘paratexts’ (Consalvo, 2007). The notion of the paratext, and its relation to a media ecology of videogames is important to educators because of its strong connection to both traditional and multimodal literacy practices.

Important to literacy educators is Consalvo’s (2007) reintroduction of the concept of paratexts to the study of videogame culture. She defines them as the system of media products – ‘communications and artefacts’ – which emerge on and about videogames that frame their consumption. A key concern of Consalvo’s work has been to establish the paratext as central, rather than periphery, to the experience of videogame play. This system includes a wide variety of products made by the videogame industry (guidebooks), specific paratextual industries which are parasitical to the videogame industry (cheatbooks, mod chips), and by the players’ themselves (FAQs, Walkthroughs, YouTube videos). It includes procedural materials that are focused on gameplay, and various extra-gamic materials that use videogames as a platform, like Machinima, or reference the videogame aesthetic, like fan art and music. Importantly, for many games this also includes material for the game which was created by the players, like furniture and skins for *The Sims 2* (2005, Maxis), or maps for *Warcraft III: The Frozen Throne* (2003, Blizzard). The existence of these materials suggests that paratexts and their peripheral industries might be more interesting/significant, than the ‘originary’ texts (Consalvo, 2007). This not only because the shape games and gamers in the process of creating new markets, but because they resonate with adolescents’ lifeworlds in ways many school-based texts do not. We argue they need to be included within the literacy curriculum.

Gaming capital

Gaming capital is a dynamic and highly contextual form of capital. Its accumulation and exchange are dependent on the specific situation and conditions in which gameplay takes place. The concept of gaming capital provides a way for researchers to understand how operators interact with ‘games, information about games, the game industry and other game players’ (Consalvo, 2007: p. 4). Thus it establishes a local sociology of the media ecology of videogames as it plays a key role in the development of communities of practice. Within communities of practice around videogames, paratexts are the key example of a tangible form of exchange. The paratext demonstrates the most obvious smooth segue of gaming capital into other forms of capital, whether that be in the traditional literacy practices required to put together a FAQ or walkthrough, or the more technology oriented skills that are required to crack software, or homebrew console

systems. In this sense the paratext is a material trace of the intangible forms of exchange that take place with gaming capital, and between gaming capital and other forms of capital.

The exchange of gaming capital is a negotiation where the multiple objects, actions, combinations, and strategies of play may be contextualized. In this sense, individual unit operations (Bogost, 2006) are valued and appraised by players during the process of exchange. Without an exchange of gaming capital individual acts or unit operations cannot be measured meaningfully. This makes the concept of gaming capital particularly important for understanding the process of play because it points both to the importance of a media ecology and a local sociology of videogame play. This situates videogame play in relation to machines, paratexts, and players. Even when players are playing in isolation, they are connected to the media ecology of videogames through a variety of paratexts, including FAQ, cheats, hacks, other players, magazines, MOD chips, conversations about the game and other mass media including commercials, movies, and music. This exemplifies and establishes the importance of games for literacy education because gaming is a multi-billion dollar global. These are the experiences, actions and texts youth often draw upon in the construction of their identities and subjectivities in an increasingly networked and globalised world where games matter.

The circulation of information about gaming that takes place in the media ecology of videogames helps establish a hierarchy of gaming capital among adolescent gamers. Different gameplayers possess different gaming capitals based on their accumulation of – or inability to accumulate - various gaming capitals across social fields. Gaming capital has to be evoked through the social element of games because when looking at games on their own, gaming capital has limited exchange value. One key example of differentiation in gaming capital is embodied through gameplayers' understanding, not just of the system of the game (code and algorithm) but also how that system can be configured. We frame this difference in terms of gameplayers' understanding and execution of diegetic and non-diegetic operator actions as a form of distinction in gaming capital. This is because it demarcates two kinds of understandings of gameplay and gaming capital. One is about actions within the world (diegetic) and the other places the players outside of the world of the game (non-diegetic) and instead allows them to act upon it through the various modes of configuration. For example in *The Elder Scrolls IV: Oblivion*, the player has to move between acting in the diegetic world (moving, fighting, questing) and configuring the avatar (equipping items, choosing spells/abilities, gender, race, etc). Both diegetic and non-diegetic actions are forms of gaming capital, which are distinct, yet the most important form of gaming capital is the ability to understand how they operate alongside other forms of gaming capital. This means that different gameplayers play a crucial role in the exchange of information during gameplay. Consequently, this has a high impact on players' experiences and becomes an important part of the media ecology of videogames.

The conversion and exchange of capital in literacy education

Many literacy researchers accept that literacy is a form of cultural capital. Thanks to Carrington and Luke (1997) and Luke (1995), many literacy researchers also understand

that for literacy to make a difference in students' life trajectories, it is sociologically contingent on the availability of other forms of capital (social, economic, and symbolic) and the patterns of conversion or exchange across social and institutional fields. This idea is synergistic in understanding how the exchange of gaming capital is also dependent on the specific situation and conditions in which gameplay takes place. Luke (1995) argues that if we accept that literacy has malleable social, political, and cultural consequences, then educational theorists, researchers, and teachers must develop ways of discussing the possible material consequences and narrative outcomes of particular plottings of the literate subject in relation to the accumulation and exchange of various capitals. Bourdieu (1984) describes four kinds of capital: cultural capital, symbolic capital, economic capital, and social capital. Cultural capital can be described as embodied capital, the knowledges, skills, and dispositions of the bodily habitus; objectified capital, the cultural goods, material objects and media physically transmissible to others; and institutional capital, the academic qualifications, professional certificates and credentials an individual holds. Symbolic capital is the institutionally recognized and legitimate authority and entitled requisite for the conversion of cultural, economic, and social capital. Economic capital is primarily the material goods and resources that are directly translatable into money, whereas social capital is defined as access to cultural and subcultural institutions, social relations and practices. Drawing on Luke (1995) each form of capital is explained with specific reference to literacy education:

<p><u><i>Cultural Capital</i></u> Cultural capital describes the sum total of durable knowledges and practices as well as discursive and material resources acquired by individuals as they develop across their life trajectories. This capital can be split into three distinct forms of capital: embodied, objectified, and institutional. In terms of embodied capital, the student is trained in a set of knowledges, practices and dispositions of the bodily habitus. Within schools, embodied capital can be converted into particular forms of objectified capital where students leave schools, universities and other institutions with particular kinds of portfolios or visible objectified signs of embodied capital. Institutional capital refers to those particular academic qualification schools and other institutions grant to students when they have demonstrated embodied and objective capital.</p>
<p><u><i>Economic Capital</i></u> Economic capital refers to the material goods and resources available to the student that are directly translatable to money. For example, a student may have developed practices and dispositions in the school, an adequate portfolio that displays 'worth' and the relevant credentials but without requisite economic capital, whether provided through employments, inherited wealth, welfare or other forms of institutional interventions, the students may not have enough resources to access other social fields.</p>
<p><u><i>Social Capital</i></u> Social Capital is the direct access to social and cultural institutions and organizations. Even if a student has acquired requisite cultural capital, official knowledge skills, practice and competence, and even some category of economic capital, their access to social institutions may be contingent on culture, class, gender and other factors that influence how subjects are identified. Social capital is best characterized by who has and who does not have legal access because many social institutions continue to exclude on the basis of class background, racial phenotype, gender, sexual orientation, disability and other visible and non-visible forms of difference.</p>
<p><u><i>Symbolic Capital</i></u> Symbolic capital, then, is an overarching category for describing the uptake of all other forms of capital within specific social fields. Assume then, that a student can write genres, read with comprehension, deconstruct texts and there is credential evidence of this meaning he/she has some level of tangible economic resources and access. Yet the above is not necessary and sufficient to guarantee success.</p>

Table 1: Capital explained with specific reference to literacy education

Students' differential discursive resources, the sum total of their embodied cultural capital, are taken out into differing fields as part of their life trajectories. Thus students'

paths through various social fields are not determined or caused in any structural sense—rather they are mediated by their available capital—as well as the laws of conversion of capital within and across specific social fields. This is also true of students’ gaming capital. The social fields primarily correspond to institutional domains of work, gameplay and identities. Each of these fields, in turn, is not just a domain of discourse, but as well constitutes a ‘local sociology—a system of communication and exchange wherein particular patterns of ‘value’ are established and defined” (Luke, 1995, p.16). What is important about the media ecology of videogames, are the local sociologies of gaming that are mediated by different gamers’ accumulation of available capitals.

Uncovering Gaming Capital

We have drawn on theorists from the fields of gaming and literacy education to discuss gamers’ experiences, actions, interactions and gaming capital in the local sociology of a gamespace. We are interested in understanding youths’ accumulation and exchange of gaming capital in order to understand how it impacts on other forms of capital, rather than viewing gaming a discrete entertainment oriented past time that has no meaning outside itself. In a project¹ funded by the Australian Research Council to investigate what English and literacy educators might learn from and about video games and video gameplay. Researching videogames—by investigating the entire medium through gaming capital—provides us with a platform that moves beyond thinking about how to incorporate games on their own into classroom practice. Rather, this model provides us with a means for tracing vectors of exchange between and across cultural and economic capital that takes games outside of literacy practices and engages them on their own terms as cultural artefacts, bound by history and materiality, consisting of a machine and a game simulated in software. Below we postulate questions, aligned with the way Bourdieu categorises capital, to generate data about students’ accumulation and exchange of gaming capital.

Cultural Capital

- Do you ever ask people for help to play/finish the game?
- Do people ever ask you for help?
- Do you know how to find information finish/play without asking anyone?
- Are you a leech and do you ever contribute or add to FAQs or walkthroughs?
- Do you know people who are really good at video games? Would you consider them experts? Can they make money from their knowledge?

Economic Capital

- What game are you the best at? Would you consider yourself to be an expert on any game? Why?
- Are there games you want to play that you can’t? Are there consoles that you want that you don’t have? Is your Internet connection fast enough? How do you know these better games exist?
- Would you like it if there were more people you could play games with? What games?
- How do you access and play better games than the ones you have access to?

Social Capital

- Do you think particular games are designed for girls and boys? (Example/explain)

- What do your friends think about your gaming? What do your parents think about your gaming? What do your teachers think about your gaming?
- Do you ever play games online with people from other countries? If so, where are they from? Are they better than you? If not, why not?
- Where would you say the best gamers are from? Why?
- Do you play games with the rating of MA15+? Where do you play them? Where did you get them? What do adults say about your playing these rated games?
- Do you think it is a good idea that the Australian Government does not allow games with a rating of over MA15+ to be released in Australia?
- Do you think it is bad that game companies make special versions of the game for Australia to avoid it from being banned?

Symbolic Capital

- How would you describe people who are really good at computer games?
- From your experience, what kind of person is a good gamer?
- Do you think people who are good gamers get good jobs when they leave school?

The questions that we have chosen focus on drawing out the intersections of different forms of gaming capital and how they are accumulated and exchanged in local sociologies of gameplay. This work, still largely theoretical, is informed by students' responses to earlier interview questions about the role of games in their lives as well as observations of adolescents playing the *Elder Scrolls IV: Oblivion* and the *McDonalds' Video Game*.

A heuristic to map the accumulation of gaming capital

In order to analyse and understand the interview data, we have designed a heuristic to map adolescents' accumulation and exchange of gaming capital across various local sociologies of gameplay. The heuristic locates various types of gamic action within two important frames. The first is the media ecology of videogames, primarily the paratextual, and then Bourdieu's notion of economic and cultural capitals. What the heuristic allows us to do is trace the particular elements of students' gaming capital that arise from specific forms of play—diegetic and non-diegetic machine and operator actions and paratexts. It also allows us to map how economic and cultural capitals are exchanged in either positive or negative ways.

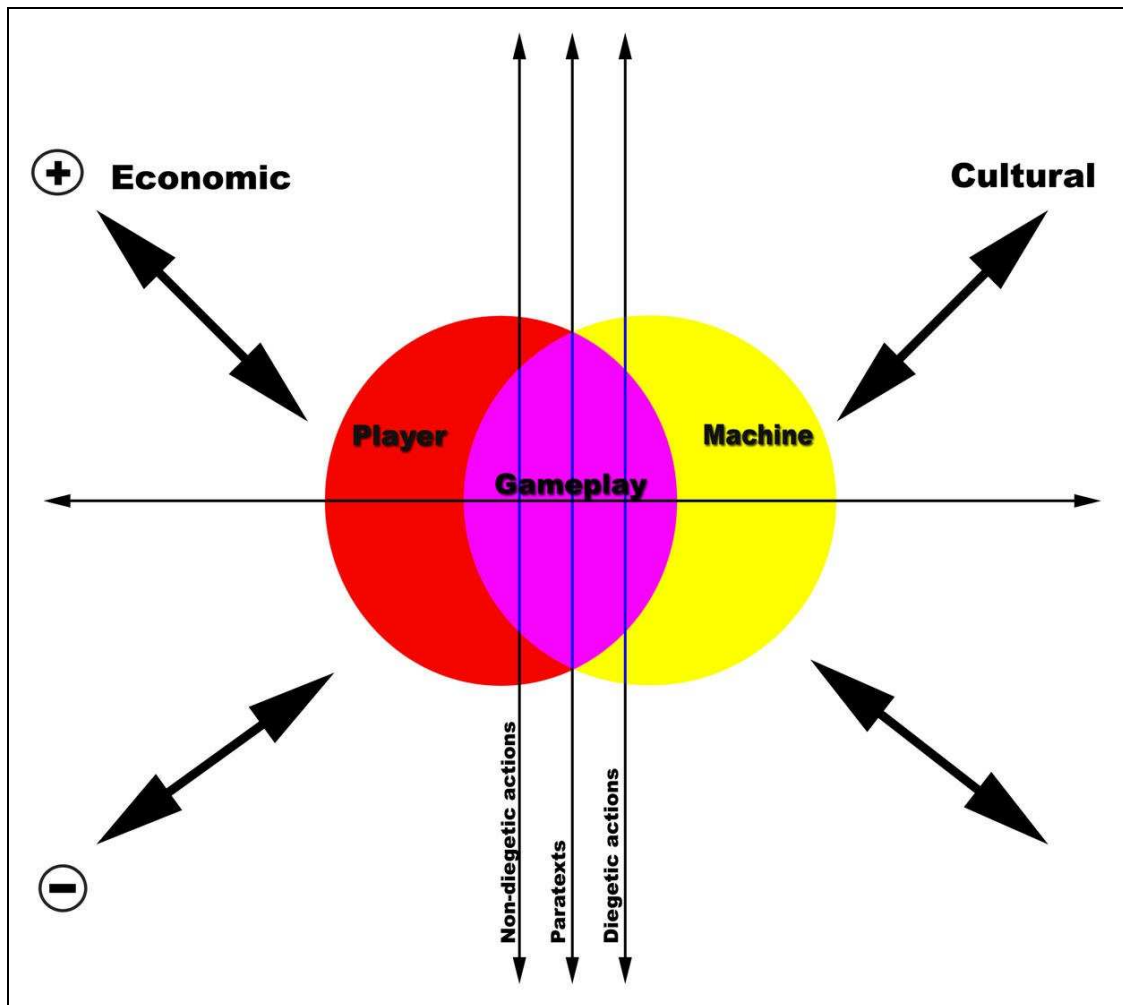


Figure 1: Total volume of gaming capital

The two circles in the centre of the heuristic are the machine and the machine operator (player), the actions of which produce videogames play. Running through the intersection where play occurs, are three arrows representing forms of action that are taken in play, which may be either machinic or operator actions: the diegetic, non-diegetic and paratextual. By examining the intersection of these elements we aim to trace how different forms of gaming capital emerge in, through and around videogame play. The accumulation of gaming capital is placed in a wider field of economic and cultural capital in order to trace the exchange of capitals, and to demonstrate that gaming capital is important in the accumulation of other capitals. The double-ended arrows in the corners of the Heuristic represent this exchange of gaming capital, with both negative and positive forms of economic and cultural capital.

Our interview questions to uncover gaming capital and our heuristic to map students' accumulation and exchange of different gaming capitals are a work in progress. We see the value of exploring gaming capital because it informs our understanding of literacy education. Instead of thinking about how games might be, could be or should be used in

the classroom we are interested in videogames and gaming capital as a factor that shapes youths' identities. Rather than looking at videogames for some extrinsic value that we may extract for educative purposes we want to examine videogames as significant cultural artefacts and actions in students' lives. This understanding allows us to rethink the role of videogames in literacy education because there are many important aspects of gaming that occur completely outside of traditional concepts of education. Central to this is the notion that games are code, which are enacted through play; crucially this play occurs both at the level of diegetic and non-diegetic operator and machine actions.

Conclusion

This research hopes to explore the value of studying games in school because they play a vital role in young people's lifeworlds and in the development of their sense of self as well as their relations with others. We suggest that gaming capital is a valuable tool for conceptualising the nexus of gamers, video/computer games and gaming culture along with all of its accretions. The value of researching gaming capital to inform teaching and learning is not only to motivate particular students to be more engaged with learning. Gaming capital marks the movement of knowledge and skills from one form of capital to possibly obtain leverage or capital in another, outside gameplay. We believe the significance of video games for literacy education is not simply about teaching youth how to 'read' the videogame text, but to be able to critically understand and situate their gameplaying practices in a field of knowledge which can move outside the media ecology of videogames into other tangible forms of literacy practices.

Drawing on this research, educators could extend their repertoires to understand how gaming capital and the media ecology of games are relevant to students' lifeworlds in planning for literacy teaching and instruction. It is anticipated that this research will assist educators in understanding how gaming capital involves organising and prioritising knowledge and information and to recognise and be critically informed about the global context in which gameplay occurs. This is part of schools' larger challenge to build robust connections between school and the world beyond, to meet the needs of students, and to counter problems of alienation and marginalisation, particularly amongst students at risk. With respect to literacy education, engagement and technology, we urgently need more information as to how this might be best achieved rather than ignoring the gaming phenomenon.

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ⁱ Beavis, C., Bradford, C., Omara J. and Walsh, C. S. : *Literacy in the Digital World of the Twenty First Century: Learning from computer games*. Australian Research Council, 2007-2009. Industry partners: The Australian Centre for the Moving Image, The Victorian Association for the Teaching of English, The Department of Early Childhood and Education, Victoria. Research Fellow: Apperley, T. E.