Reciprocal Disconnectedness: computer games, schooling and boys at risk

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ABSTRACT Ethnomethodology is the analytical frame used here to recover embedded cultural discursive phenomena in the language of 'at risk' middle-school boys as they talk about 'computer games' and 'schooling'. What emerges is a rich picture of myths and heroes, identities of participation where member values and a discernible moral order are part of the 'gaming' culture. A second picture emerges of 'boys in school'. Here 'sleepers, avoiders and disconnected teachers' are disclosed through conversational structures as identities of non-participation in the classroom. Through student talk we learn that identities of non-participation are a reciprocal phenomena, wherein these students and their teachers co-construct a reciprocal disconnectedness, each to the other. To the individual learner, the computer game is 'serious fun'; to the classroom it is a 'peripheral distraction'; to the school community it is a marker for identifying boys 'at risk' of disengaging. Each of these individual accounts stands only as a 'partial' explanation of the role of computer games in schooling. The article argues that our ability to nourish learners' inner capacities is not dependent on the level or nature of technology, but on the creative learning applications it invokes.

Introduction – boys' talk

In September 2006, in the company of a group of eight 'at risk' middle-school boys, we logged onto the Internet to participate vicariously in the launch of Microsoft's new Xbox 360 games console. Our warrant was the 'success for boys' project we were currently involved with; their warrant was the launch of an exciting new next-generation gaming machine. As digital immigrants (Prensky, 2001), the best analogy we have here is to the game of musical chairs. When the Microsoft promotion started, we all had a chair at the 'gaming' table. As the promotion progressed, like the ten little Indians, one by one we had our chairs at the table removed. Ours were amongst the first to go, in what was an existential experience in marginalisation; for the rest of the promotion, we were very much on the periphery of the gaming discourse erupting around us. We learned many things, not only that there exists a basic terminology for Xbox gaming, but that it is also possible to add to the functionality of the new Xbox console by enhancing it with an HD-DVD add-on, creating yet other levels and repertoires of practice. Gaming, it seems, is not a linear phenomenon; it is both parallel and multilevel, and exponential at that.

Mitch, one of the students present, added to our growing sense of isolation. 'I'm a Sony Playstation guy myself', he quipped; 'the new Sonys have a GPS peripheral, which is really cool'. I replayed this in my head, slowly at first, and then even more slowly with my co-interviewer, looping it constantly between us. Both of us failed to make the connection between global positioning systems and the console games we had just witnessed. Mitch enlightened us: 'With the GPS peripheral', he said 'I will be able to actually chart the stellar constellations in some space games, or use it to measure distances in virtual golf'. Derek, another of the natives (Prensky, 2001) present, and also a Sony PlayStation user, concurs with Mitch's avid assessment. He seemed much more excited at the release of *Guitar Hero II* for Sony users: 'I can download my favourite tracks, and use my guitar controller to play along with my favourite riffs'. Lenny, a third student, sees nothing but 'Doom' – that is, 'the X06 Live Arcade game and I can download it for just $10'.

Clearly, a new lingua franca is at work here; quickly we piece together that X stands for Xbox, and 06 for the version. Buoyed by this connection, we also realise the extent of the apprenticeship in front of us.

From Material to Cognitive Artefacts

We are left in no doubt that there are different frames of reference operating in the gaming world. Anthropologically speaking, over time human societies and cultures have developed by sharing new information, knowledge, ideas and technological advancements through the medium of the 'artefact'. For the most part these social and cultural artefacts are 'material' in nature; stone tablets, cave paintings, papyrus scripts, board games and so forth. Film is a celebrated social and cultural 'artefact', singled out here as evidence of a broader paradigm shift from 'material' to 'cognitive' artefacts at the community level.

Two recent examples include *Lord of the Rings* director Peter Jackson's new video-game studio, Wingnut Interactive, an offshoot of his existing film production company working on the science-fiction movie *Halo*. A second is New Line Cinema's US$150 million effort, *The Golden Compass*, starring Nicole Kidman, based on the first of Philip Pullman's science-fiction trilogy. Both films will deliver new media gaming products, with Microsoft adding an interactive strategy game entitled *Halo Wars* to the existing Wingnut *Halo Universe* game (Colbourne, 2006). If each film stands as a social and cultural 'artefact', then each 'computer game' spin-off is its cognitive expression. Games enable developers to design and build complex cognitive processes around artefactual knowledge in a way that enables user manipulation of information, knowledge and data in the abstract sense. Many cognitive artefacts therefore engage literacy and numeracy skills, but these are often not the same literacy and numeracy skills that formal education recognises and rewards.

> Modern computer and video games are terrific at providing kids with unforced learning
> opportunities every second, and sometimes even fractions thereof. And despite what the press
> would often have you believe, *the overwhelming majority of this learning is positive.* (Prensky, 2006)

It was McLuhan (1964) who labelled books 'our first teaching machine' in an effort to point out that contemporary technologies offer many mediums of information, and many more teaching machines. Clearly, there has been a complex evolution of cognitive processes and educational applications for media since Gutenberg's 1453 printing press. Wilson & Keil (1999) capture the dynamic of the 'cognitive artefact' well, asserting that these 'are (man-made) physical objects' for 'aiding, enhancing, or improving cognition'. Such artefacts have in the past included 'a string tied around a finger as a reminder, a calendar, a shopping list' and more recently, 'a computer'. A piece of string, a calendar and a shopping list have a clear context of use; the computer is a richer complex that has multiple contexts and applications. But what can be said about the computer game as a cognitive artefact, and who might want to say it?

Methodological Leanings

We have chosen ethnomethodology as the analytical frame here. The main reason for this choice is to highlight the connection of these eight students to the social discourses and structures of formal schooling. To those of us reading this article, these experiences are particular, but they are also typical and generalisable themes of existing school cultures and institutions. Conversational analysis provides an analytic link between the concepts and themes presented in this discussion. The aim here is to disclose or recover embedded cultural discursive phenomena in the language of 'at risk' middle-school boys as part of the 'success for boys' project. The focus of the talk rests upon how these boys interactively encounter the computer game culture. What emerges is a rich picture, where member values and a discernible moral order are themselves part of this culture; these are also embedded in 'gamer conversation', and therefore recoverable through the analysis of conversational structures.

Analytical tools used here begin with the basic form of conversational turn taking known as an adjacency pair. An adjacent pair occurs when the current turn of talk causes an expectation of response on the part of the conversational partner. This could be question and answer, greeting,

fast food service (would you like fries with that), complaints, goodbyes and/or authority encounters. Jayyusi (1984) identifies the strategic value of conversational analysis as a tool for recovering deeper discursive themes and ways of talking. This centres on the role of membership categorisation (Sacks, 1972; Eglin & Hester, 1992), which is a classification or type used to describe people and other objects. Classifications cluster together to form a complex known as a membership categorisation device (MCD); in this case the MCD 'serious fun' is used to describe student conceptions of learning through computer games. It is by reference to this derived MCD that an analysis of 'student' talk is possible to the outsider. For example, in the transcript presented it is only through shared student talk, built up by linking specific membership categories, that conversation between computer 'gamers' succeeds.

Standard relational pairs (Eglin & Hester, 1992, p. 244) are paired categories of terms. Like most pairs, these pairs are dialogically related, such that each derives meaning from its relationship to the other. For example, in conversational analysis certain paired categories have incumbent category-relevant features, or predicates (Eglin & Hester, 1992, p. 245) that define each category. In turn 35, the category 'gamer' and its silent pair, 'the non-gamer', present as a standard relational pair, such that the category-bound activities of the gamer include (for example) specific fantasy, gender and behavioural orientations whereas the 'non-gamer' is said to rely upon different sets of ideas (knowledge), content (artefacts) and practices (rituals) to mediate formal 'schooling'. It is important in this sense that the reader is able to feel the moral dilemmas presented in the talk and 'think with' these accounts, rather than think 'about' them. Here, knowledge and values are inseparable; broader sociological questions – why are boys predisposed to gaming and why are boys more likely than girls to be 'at risk' in school – are connected in conversational practices.

Gamer 'Talk'

In its use of the 'myth' as a framing device, the computer game has a long and quality-filled genealogy of games inspired by legends and fairy tales. Lachlan, a Playstation 2 user and middle-school student, lists 'gaming' as his one and only interest, and his favourite games as probably *God of War* first, then *Mark of Kri* or *ICO* and *Shadow of the Colossus* would be up there too'. Trying to make the world of research more accessible to the group, we suggest that these games compare favourably to the 'mythology of research', best captured in *Ariadne's Thread* from Homer's *Odyssey*. We try to explain the similarities to Lachlan, having established that Homer Simpson was not the Homer to whom we referred:

1. I: Ariadne was the beautiful daughter of King Minos of Crete, who falls in love with Theseus. The only problem is that Theseus has been sentenced to the great Labyrinth of Knossos, to be sacrificed to the Minotaur. Theseus promises to marry Ariadne if she helps him kill the Minotaur and escape. So she gives him the ball of thread, to be unwoven as he *descends into the labyrinth*. Once he kills the beast, he will then be able to find his way back out.

2. Lachlan: Wow, does he have a *choice* of weapons?

3. Lenny: //Did they copy that labyrinth from *Doom*?

4. I: No, it actually dates back to the times of ancient Greece. The Odyssey was as important to ancient Greek society as the Bible is to us//.

5. Derek: Don't you mean *Star Wars Sir*? [*laughter*] Trekkies ( )

6. Lachlan: //That would make an excellent computer game.

7. I: Why ... why would that make an excellent game?

8. Mitch: *Because it makes the world a better place*

9. I: How can a game make the world a better place? ( ) No ... I am serious, how can a game do this for you, for me and for other people?

10. Toby: SHINE-YOUR-DIVINE-LIGHT-UPON-THIS-BROKEN-AND POLLUTED-WORLD ... *That's how [laughter]*

11. I: Tell me more (3) Is that a mantra or a prayer// *[more laughter]*

12. Derek: //It's an instruction dude ... *a prayer* ... no way.

13. Toby: *Okami* ... its straight from *Okami* ... PlayStation 2. [YEAH]

14. Ho: //But there is a goddess ... but she's a *wolf/* you are a *god, hero, hunter, saviour.* The game begins with like ... a half *(an hour) or* (or) so about Amateratsu// 100 years of history ... (2) but it's not spoken it's like whispered, and already you know this is another world. And it's in trouble ... you read from text boxes that flow from paintings.

15. I: So *Okami* is a game that makes the world a better place/ ( ) What world? ... Your world, my world ... *Our world (inflection)*

16. Mitch: It's a fictional world, but it's not. It's kinda two-dimensional storybook but by interacting with it ... it becomes three-dimensional//you are the powerful God, who can grow the world. You can jump and double jump, and there are secrets to find throughout the world's valleys and villages.

17. Derek: Then colours, *blooms* and talking animals. But you have to make it happen. You are the good guy see ...

18. Lenny: And in it (2), the world used to be healthy and kinda ( ) beautiful. *But* ... the Guardian trees that held everything together ... have been cursed and poisoned//

19. Ozzie: That's where you come in/ first you have to restore the trees, and then create a sense of order. It's kinda like building from the ground up ...

20. I: Do you do this on your own?

21. Lenny: nuh ... of course not. *Amateratsu does it* ... she is the white wolf, who is really a shimmering Goddess, and who is really you. So, you learn through her adventures. You possess the power of a god, but face the world in the form of a wolf. She has her own commands, and weapons that you can upgrade. You can even freeze everything and use a paintbrush to get rid of your enemies. I really love the cherry bomb ...

22. I: The cherry bomb ... what is the cherry bomb?

23. Lachlan: It's a tool *[laughter]* ... looks like a circle. But with a line to the top like a wick. It has these little dots around it that grow into trees. The bad Gods don't like this at all. You can also put circles over dead trees to bring them back to life ... (an) do the same over water//

24. Derek: And the waterlilies create pathways.

25. Mitch: Mr Orange helps too. He like ... break dances, after he drinks the Japanese wine//

26. Lenny: Sake dude ... its Sake.

27. Mitch: ... and this puts cherry blossoms on all the trees.

28. I: So; this is a non-violent, environmentally positive game? *(Inflection)*

29. Toby: No I wouldn't say that ... I mean ( ) *is a choice.* There are 13 weapons to collect, so there's plenty of opportunities of combat. *But* (2) no one's telling you what to do, and it just kinda makes sense to jump or double jump into hidden valleys, rather than to always resort to violence.

30. Lenny: And it's also a game// ... it's also a game that let(s) you look back at where you have been, and see that you have left it a better//

31. Derek: Yeah healthier/

32. Lenny: ... a better place than when you found it. It's just a game, but it's really challenging (2) you got to overcome many obstacles and enemies and it's a really good feeling to make that kind of difference.

33. I: Isn't that what you try to achieve through education/ particularly in SOSE// *[moaning]* I mean ... how does SOSE compare to the game as an experience?

34. Ho: I can't stay awake in SOSE// *[shouts of me neither]* I sit there and vege//

35. Ozzie: That stuff is the game ... and this is ... *is more real.* That's a joke. Like ... We are supposed to think this, and do or think that just because ... buy this and don't buy that. Who *says?* It's brainwashing. *[laughter of approval]* And then when I say something ( ) to (teacher) they never hear what I say ... they just tell me to put up my hand and wait my turn. The next level is they *offer me the choice* (2) get it ... the choice to leave if I am not interested. And I'm not, so I leave. Waste of time ... space ... should get the cherry bomb for SOSE *(laughter)*

(Transcription conventions adapted from Baker & Freebody, 1989)

Learning as Serious Fun

Friedrich Froebel and Maria Montessori are at the epistemological root of 'play-based' learning; a connection to Dewey through inquiry-based learning recognises a classroom application of the playful learning tradition (Resnick, 2006). To appreciate the complexity and poetry of the 'game' as a cognitive artefact, we need look no further than the game of chess for an example. After the first two moves of any game (each player begins with 20 options), the board sits in one of 400 possible configurations. The second pair of moves leaves the board in one of 71,852 potential patterns, and the third in one of 9 million possible configurations. After four moves by each player, the number of possible board configurations exceeds 315 billion. By the end of the game, the number of possibilities is greater than the number of electrons in the universe (Shenk, 2006).

As fascinating as these figures are, what is more fascinating is that the typical chess grandmaster can 'see' the board up to 10 moves in advance. Play is synonymous with mental dexterity, a kind of paradigm for strategy, and a means of explaining the unexplainable; play is a tool for moral, social and intellectual development. Among the great players of history is William the Conqueror, Napoleon (who suffered at the hands of his generals), George Bernard Shaw, Voltaire, Lenin and Trotsky. Joseph Stalin presented himself in the image of the chess virtuoso to impress the Bolsheviks, and in a sign of things to come, issued false public accounts of his famous victories over senior officers (Shenk, 2006).

Like the gamers of bygone days, contemporary gamers also hold the 'game' as a key structuring activity in the lives of their communities. In turn 8 Mitch suggests that the function of the 'game' is to 'make the world a better place'. In turn 10, Toby connects Mitch's comment to a particular game, *Okami*, and recounts the game's central message, *'shine your divine light upon this broken and polluted world'*. In turn 12, we are told this is an instruction, an overview of your 'job' as the player as you lead a goddess in the shape of a white wolf through a possible 40 hours of mental gymnastics. The derived membership categorisation device (MCD) here is 'serious fun', and the key categories in the transcript which demonstrate this are the categories of 'engagement', 'strategy' and 'escapism'. While ostensibly all about mythology, the sequence is in fact divided into three sections: turns 1 to 5 are about constructs of mythology; turns 6 to 31 seamlessly change to talk about the game 'Okami', overlapping with the last sequence in turns 32 to 35, which are essentially about connections to schooling. The consequences of topic shifts in the talk carry pedagogical as well as moral messages: pedagogical, in that computer games compete with traditional curricula for these boys' attention, and moral in the sense that these boys are often labelled 'at risk' by our educational system as a consequence of disengagement.

Myth as a Structuring Device

Turns 1 to 5 five show a clear initiate–respond–evaluate (IRE) sequence (French & Maclure, 1981), where the sharing of 'myths' moves from Homer's *Odyssey* to encapsulate both the Bible and the *Star Wars* trilogy. This is a broad construct, and at all points each individual mythology is acceptable and recognisable to member accounts. In turn 6, Lachlan shifts the category of response to focus on computer games in particular; in turn 7 Mitch invokes the moral order of the gaming world (a better world). In turn 11 the interviewer asks for elaboration, raising the standard relational pair of 'mantra or prayer' as a possible explanation for student talk. In turn 12, this work is undone by Derek; prayer is not heard as correct, nor in turns 12 and 13 is it validated or made credible in member talk. The indexical 'it's' in turn 12 is an elicitation, to which Toby in turn 13 adds definition – 'it's' refers to player instructions in the game *Okami*. Turn 14 works as a substantiation move, establishing the context of the game, and marking the category of 'engagement' as a key referent in what-counts-as-serious-fun. Research has shown that many of children's best learning experiences come when they are engaged not simply in interacting with materials but in designing, creating and inventing with them (Papert, 1980; Resnick, 2002). The design cycle is seen as a type of play, wherein players test boundaries and experiment with new ideas in order to test what is possible.

> you are *a god, hero, hunter, saviour*. The game begins with like ... a half (an hour) *or* (or) so about Amateratsu// 100 years of history ... (2) but it's not spoken it's like whispered, and already you know this is another world. And it's in trouble ... you read from text boxes that flow from paintings. (Ho, turn 14)

Turn 15 is a seen as a confirmatory move, where the interviewer evaluates and then accepts student responses as the organising frame for enquiry. The inflection at the end of turn 15 is a feature of adjacency pairs, and works as an invitation for further elaboration from students. In turns 16 to 19, the category of 'strategy' and its many predicates are raised through student talk; as players design and create, they also learn new concepts. In turn 16, Mitch reiterates, 'you are the powerful God, who can grow the world', restoring 'life' and creating 'order'. Although this is a fictional world, it is not a world devoid of a moral structure. In turns 16 and 17, the moral order is connected to the 'god' within, who is the 'good guy'; the standard relational pair, 'the bad gods', stand in stark contrast to this in turn 23. In turn 20, the attributes of the moral order are said to reside in the character *Amateratsu*, a mythical unification of a holy trinity comprising the player, a white wolf, and a shimmering goddess. She has 13 weapons in her arsenal, and in turn 21 we are introduced to one of these, the 'cherry bomb', which is essentially a tool of redemption and rejuvenation. At this level, *Okami* serves as a remarkably self-renewing metaphor for everything from politics, battle and ideology, to the nature of thought and the shaping or dissolution of culture.

> You possess the power of a god, but face the world in the form of a wolf. She has her own commands, and weapons that you can upgrade. You can even freeze everything and use a paintbrush to get rid of your enemies. (Lenny, turn 21)

The categories of 'engagement' and 'strategy' align in turns 23 to 31; the pedagogy of the game involves three intertwining strategies, the first being 'exploration' cited in turn 16, where 'you can jump and double jump, and there are secrets to find throughout the world's valleys and villages'. The second function is 'tooling', introduced in turns 21, 23, 24 and 25, which relates to the 'skills' players acquire as they expand their 'god-like powers' as they move through the levels of the game. The third pedagogical function is combat, introduced by the interviewer in turn 28. Here, the interviewer moves to establish the standard relational pair – 'violent and non-violent' as possible attributes of the game. In turn 29, this hearing is contested by Toby; the moral order dictates that violence is a choice, but that consequences, like weapons, are simply 'strategy' in the context of the game.

> But (2) no one's telling you what to do, and it just kinda makes sense to jump or double jump into hidden valleys, rather than to always resort to violence. (Toby, turn 29)

In many ways this rationalism through 'strategy' is a challenge to existing fundamentalisms and ideologies (best captured in turn 35), in that nothing is 'absolute' in and of itself, especially

schooling. This is taken up by Ozzie in turn 13; his critical assessment of schooling paints it as a fundamentalism he rejects, and which in turn rejects him. He uses the categories of 'engagement' and 'strategy' to rationalise and legitimise his disengagement with formal schooling.

> That stuff [schooling] is the game ... and this [Okami] is ... is more real. That's a joke. Like ... We are supposed to think this, and do or think that just because ... buy this and don't buy that. Who says? It's brainwashing. *[laughter of approval]* And then when I say something ( ) to [teacher] they never hear what I say ... they just tell me to put up my hand and wait my turn. The next level is they *offer me the choice* (2) get it ... the choice to leave if I am not interested. And I'm not, so I leave. Waste of time ... space ... should get the cherry bomb for SOSE *[laughter]*. (Ozzie, turn 35)

That final utterance, 'should get the cherry bomb for SOSE', is a compelling one. Just like the labyrinth, the great sea in Homer's *Odyssey*, or Orpheus's mythical underworld, the classroom, too, is part of our students' magical journey. Turns 23 to 32 suggest that in the world of the game, when players follow their hearts and their correct path, special things happen: somehow they manage to jump or double jump to a new environment, morph into a new form, acquire a new weapon, or defeat a mortal foe. This is the culmination of a series of pedagogical moves related to the exploration, tooling and combat functions of the game. Yet, the fact that these students are 'at risk' at such a formative stage of their scholastic identity is an indication that schooling is not the stuff from which such myths are carved, and that the mediation of 'schooling' (like the game) requires certain 'ways of being'.

In turn 33, it is the interviewer who makes the connection between myth-making and the classroom: 'isn't this what you try to achieve through education?' In turn 34 this is soon dismissed by students, and in turn 35 systematically deconstructed and challenged. Some interesting parallel attributes emerge here; games construct, whereas schooling instructs; games are active, and the classroom passive; games teach through design, schooling through compliance; games create learner and conceptual leverage, and schooling locates the teacher as the arbiter of what constitutes learning and knowledge; games are inclusive, and schooling exclusive. Even though these students are labelled 'at risk', it is not their intention to exit schooling, but to transform it. In turn 21, the cherry bomb is introduced; in turn 23 it is explained. It is part of a noble ancient art form called myth-weaving that had honour and healing power and gave people hope.

> It's easy. You hold down one button to make the landscape look like a canvas, press a second one to put your brush down and then move the left analogue stick to paint. I can put a circle over a dead tree to bring it back to life, or freeze the action and paint away my foes. (Ozzie, turn 58)

Through the agency of the game, these eight young men hold a committed belief that the good guy will eventually prevail, and in their game-driven discourse, the 'good guy' is invariably themselves. However, the social distance between the world of the classroom and the world of the game (reflected in turn 35) often intervenes to bring the student undone.

Well and Unwell Accounts – relations of disconnectedness

For the student, the game allows an escape from a schooling world that at times appears more foreign to him than the fictional world of the game. The relational pairing of 'gaming and schooling' is presented in the third session, turns 32 to 35. There is the world of the game, whose play portions involve intertwining moves and functions; 'exploration' makes sense, as every game has a context. 'Tooling' is intuitive; this is a cognitive apprenticeship into the layers, levels and domains of the game, where the right tools can result in quantum changes to a 'broken and polluted world'.

> Lenny: And it's also a game/ / ... it's also a game that let(s) you look back at where you have been, and see that you have left it a better/ /
>
> Derek: Yeah healthier/ /
>
> Lenny: ... a better place than when you found it. It's just a game, but it's really challenging (2) you got to overcome many obstacles and enemies and it's a really good feeling to make that kind of difference.

Interaction of this kind takes place at twitch speed, and stands in stark contrast to the question and answer sequence of Ozzie's classroom in turn 35. Combat is an essentialism also; it just makes sense (turn 29). The character is the saviour, a hero whose world-view cannot be compromised, and whose actions help the developing mind make sense of the precarious world of adolescence.

Then there is the world of the school, with its routines and rituals of attendance and behaviour, its hierarchies of order and sundry other structuring devices, of which the hand-raising display in turn 35 is but one illustration. This is the world of the hypothetical 'student', an 'othering' that often rails against the natural chaos of male adolescence and its many disaffections.

Ho: I can't stay awake in SOSE// [shouts of me neither] I sit there and vege.

Here, exploration is problematic; tooling is abstract, and combat frowned upon. The design of the game gives the learner 'conceptual leverage' whereas the design of the classroom allocates 'conceptual leverage' to the teacher. Whether it be Gandalf the Grey, the Lady of the Lake or the fairy godmother in Cinderella, an expectation is planted early in life that gurus and teachers will emerge to guide us through troubled times and help us to grow. But in formal schooling, not all learners are blessed with a guiding hand, and some go in search of the mythical character, the wise one, the observer, the adult, in structures and communities outside of schooling.

Inside schooling, it is not uncommon to attribute the absence of learning to a lack of interest (turn 35 ... it's your choice), lack of intelligence, lack of perseverance or as an exercise in wilful disengagement; these identities can be found in many contemporary classrooms. Yet the 'gamers' seem to me to be very good at managing their own learning. Inside the game, they are deeply engaged in learning what they need to know, and what they do not need to know. When talking about the more personal experience of 'gaming' compared to 'schooling', their inquisitiveness does not show the same distance, the same coolness. In learning to manage schooling, these boys are not only doing the minimum, but are actively managing the construction of an identity that enables them to support this into the future. It is important not only to be comfortable, but to also minimise classroom 'effort' in order to maintain the largest cognitive distance possible. Herein lies the irony; preoccupied with learning just how to be a non-participant, and constantly having to identify and then meet only minimum learner outcomes, is a form of 'managed disconnection' that requires a great deal of learner effort to sustain in the face of teacher challenges.

In turn 35, through the agency of Ozzie, we learn that identities of non-participation (Wenger, 1991) are a reciprocal phenomenon; just as the boys see the teacher as distant and mostly irrelevant to their frames, we also learn that the teacher does not participate in the boys' world any more than they do the world of the teacher. This profound and reciprocal disconnectedness is something very striking in student talk. Neither behaviour management, nor classroom protocol, nor assertive discipline does much to bridge this gulf, despite overwhelming evidence of the existence of a shared and 'common' curriculum ground. The game draws much of its imagery and characterisation directly from Japanese legends, myths and culture. These boys (and their teachers) seem oblivious to the fact that they have been 'deeply' engaged in the Studies of Society and Environment (SOSE) Key Learning Area; the game is an open-ended, self-directed, and inquiry-based exploration of key content from specific learning outcomes in the SOSE syllabus:

TCC6.2 – Students use their own research focus to analyse changes or continuities in the Asia-Pacific region.

TCC6.3 – Students collaboratively identify values underlying contributions by diverse individuals and groups in Australian or Asian environments.

PS5.4 – Students use maps, diagrams and statistics to justify placing value on environments in Australia and the Asia-Pacific region.

PS6.2 – Students create proposals to resolve environmental issues in the Asia-Pacific.

There are obvious asymmetries at work in all school classrooms (credentialism, recognition and reward) which translate into different degrees of allegiance to the learning process. In this case, these asymmetries are anchored in the distinction that the teacher is the declarer of global knowledge, while the student is responsible for acquiring it locally. In the world of the 'computer game', we find this same locality of knowledge. It is not in what the learner does that the essential

differences lie: in both cases the learner needs to problem-solve, negotiate meaning, create, build relationships, postulate, hypothesise and so forth. The essential difference seems to lie in the fact that the 'gamer' and the 'student' identities operate within such different world-views.

Piecing it Together – a tale of two communities

Life in the classroom for these boys hinges on the reality that the 'role of student' does not engage their sense of self in any profound way; in fact we see them sleeping through or leaving classrooms constantly (turns 34 and 35). Nor are the identities of non-participation generated by classroom structures a source of concern to these boys, because the 'gamer' is part of an identity of participation in the broader community where membership is non-problematic. Gamers gather in public spaces; they participate in 'Trekkie' conventions and occupy both real and virtual play-space. In this sense, they are a robust and active community. First and foremost, when we talk about computer gamers as 'boys at risk' in schools, we are really talking about relationships between individuals and communities; in this case 'learners' and their 'classrooms', and not just the isolated characteristics of identified individuals.

The pedagogical consequences of hearing characterisations of 'at risk' as an identity of non-participation are different from seeing these as a state of 'being'. The student clearly has in mind a specific form of community membership; legislating curriculum or behavioural change alone or in tandem is not enough; richer forms of school membership are needed, and have indeed already taken shape in the emerging 'learning through design movement' (Resnick, 2006). Here advocates call for a 'holistic approach to individual and community engagement with technology, one that seeks to identify their (learner) interests first, and then determine how technology can support those interests' (Pinkett, 2000, p. 2). The actual scenario painted here is of an impoverished classroom experience, where resistance is reduced to its minimal expression: sleep or withdrawal. This affords control to the school, and diffuses social learning; it is also seen to drive the learner in search of other avenues for self-expression and creativity, contributing to the 'distancing' of the student from the ontology of school experience. Another avenue is possible, where the productive practices of these students are brought into the school to the point that they also become accessible as material for the construction of scholastic identity.

> The target of true 21st century education should be the advanced knowledge processes that scientists, scholars, and employees of highly innovative companies engage in daily. These processes must be built into the social fabric of communities, and into the technologies that support their work, so that creative knowledge work is as integral to schooling as it is to our most high-powered knowledge-creating organizations. (Scardamalia, 2001)

The binary opposites of 'gaming' and 'schooling' are skilfully constructed through participant talk. In many ways, this is a false binary, in that what 'gamers' and 'schooling' advocates are after are one and the same thing: a means to mediate between young children and their world. There is also a consensus between parties that knowledgeable and caring teachers are the best category of mediators, but for these young men, not always the most accessible. As Resnick (2006) points out, the ability to 'nourish children's inner capacities' is not dependent on the level or nature of technology. He urges educators to move away from these kinds of binaries, and consider instead the specifics of each technology and the context of its use. Some technologies, in some contexts, will foster creative thinking and creative expression; others, in other contexts, will restrict it.

Conclusion

This account illustrates how overlapping and dependent contexts of meaning are at work in shaping the 'scholastic' identity of each participating boy. The meanings derived from this talk are dependent on specific and consistent meanings made available in wider educational discourses. These discourses, in turn, are dependent for their meaning on the broad sociocultural contexts to which they are assumed to belong. This interdependency leads us to an understanding of how the individual learner, the classroom and the school community each accounts for 'computer gaming' within the context of a shared classroom experience.

Unfortunately, our schools have turned 'learning' into such a boring thing that most kids hate it.
'Good' students are often just the ones who've learned to work the system. (Prensky, 2006)

To the individual learner, the computer game is 'serious fun'; to the school it is a 'peripheral distraction'; and to the school community it is a marker for identifying 'disengaged' and 'disaffected' boys 'at risk'. Each of these individual accounts stands only as a 'partial' explanation of the role of computer games 'as cognitive artefacts' at work in our school communities. It is through the lens of theory that we are able to fuse each partial account into a cohesive and intersubjective framework for analytic interpretation. It is through this intersubjectivity that the social subject displays identity, and where 'gaming' stands as a significant identity of non-participation in the context of this particular classroom.

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