Levelling the playing field: Engaging disadvantaged students through game-based pedagogy

David Elliott | Australian Council for Educational Research

ABSTRACT
This article explores the potential for game-based learning that meets the formal requirements of the curriculum. It presents a case study in which one learner demonstrated a range of skills and competencies which may have been obscured by the traditional curriculum, but became valuable classroom assets in a game-based curriculum context using the game Minecraft. Such curriculum may level the ‘playing field’, by allowing skills and expertise that are not articulated by formal curriculum to manifest as engaged, constructivist learning.

Introduction
Computer and video games seem to be one of the most pervasive and culturally relevant mediums currently being consumed by 21st-century learners. With a global audience that dwarfs that of film and literature (Chatfield 2009), modern video games are often complex, emotionally resonant and thematically dense, demonstrating the potential of new media. Computer and video games are designed to challenge players, functioning as learning objects that require the mastery of skills that are often viewed as being integral to the development of cultural, technological and media literacies (Gee, 2010). Students who engage with these digital texts are regularly required to challenge themselves, to collaborate and communicate with others, to read, reflect, analyse and think critically, all highly desirable skills for the demands of a contemporary, technologised life (Knobel & Lankshear, 2007; Marsh, 2012).

In the English classroom, significant challenges await both low literacy students and their instructors in relation to maintaining the relevance and cultural currency of their curriculum. Developers and publishers often reinvent their products in order to pursue innovation, technological currency and profit generation. As a result of this constant appetite for reinvention, which typifies the best video game media, print-based classrooms are often perceived as irrelevant and archaic by students who are enthusiasts of new media texts. And this describes the majority of contemporary young people (Flinders, 1997).

Video game texts may, however, be a solution for adventurous educators who are searching for a strategy that can rejuvenate their classrooms (Elliott, 2012). By engaging with the informal literacy practices that many students experience during their out-of-school lives, teachers have an opportunity to reinterpret formal curriculum through the prism of authentically engaged new media (Larson & Gatto, 2004). An example of a game that may be valuable in formal classrooms is Mojang’s phenomenally popular block-based building and exploration game, Minecraft (see https://mojang.com/).

This article addresses one aspect of a recent study conducted in a northern metropolitan secondary school in Melbourne, with a group of disadvantaged learners. The study used an exploratory curriculum design involving Minecraft. Although the study is still in progress, the data that have been collected to date are used here to open up a conversation regarding the use of video game media in
formal classroom spaces. The example of one student, John, highlights the potential for rethinking and revaluing the knowledge that some students bring to the classroom.

**Project aim**

The research this article draws on involved a single Year 8 English/Humanities class at a government secondary school in the northern suburbs of Melbourne. While the class was randomly selected due to availability, it did contain a number of students with significant reading and writing issues and these were often accompanied by disciplinary or behavioural issues. The students had a median age of 14, and during preliminary data generation many had identified as video game enthusiasts. The study was intended initially to explore the ways that a developmental curriculum may be developed around a non-linear new media text (such as a video game) in a state school English/Humanities class. The initial study design did not focus on the potential of a video game-based curriculum as a method of empowering disadvantaged learners. As the study progressed, however, it became increasingly apparent that this was a research focus that may yield interesting data, and thus it became a key research focus.

**Minecraft**

*Minecraft* is not a linear game. It has no characters, no narrative, and players are given no instruction. It is a ‘sandbox’, an activity toolkit in which players are permitted to engage with the game in any way that they see fit. Using an ‘emergent world’, *Minecraft* randomly generates a large, block-based landscape of mountains, canyons, oceans and jungles, as can be seen in Figures 1, 2 and 3. There are no restrictions on the ways players choose to engage with the landscape. They may decide to build structures, mine for minerals, hunt for animals, photograph the landscape, build machines and vehicles with the game’s robust physics engine, or simply go exploring. *Minecraft* offers players an almost limitless range of opportunities for different kinds of gameplay (Short, 2012). A global cottage industry of *Minecraft* enthusiasts has seen the scope of the game opened up to include everything from detailed recreations of national landmarks to complex and accurate simulations of machines, devices and computers. *Minecraft*’s design, a block-based building simulator, is now very much player-driven, and the scope of the game has been broadened by enthusiasts, many of whom are Australian secondary school students passionate about the game.

**The study**

The study was conducted in a ‘real’ Year 8 classroom, but also inside a *Minecraft*-based world which was hosted locally on the school network (see Figure 4). This was a case study, involving a single Year 8 class over a six-month period, using my and the classroom teacher’s design and development of curriculum content and resources, through to implementation of the necessary software, and finally, the execution of the unit. Using a qualitative data generation methodology, I interviewed selected student and teacher participants, distributed a formative survey, collected artefacts in the form of screenshots, text logs, video game levels, written work, photographs and classroom audio. Narrative inquiry is currently being used as a preliminary analytical methodology, although additional analytical frameworks may be introduced as analysis continues.

As *Minecraft* has no real beginning, middle or end, the question of how best to use it in a literacy classroom was an important one. I was concerned that a curriculum that forced students to play the game in a specific way, which would facilitate my pedagogical goals, would render the experience inauthentic. I wanted the game to be experienced by students as it was intended – without the potentially corrosive effects of formal instruction being seen as an intrusion. I wanted the ludology, the playing of the game, to be tightly aligned with the pedagogy of the study curriculum.

To this end, at the study’s commencement, I distributed a ‘framing narrative’ to students, which described their ‘reason’ for being in the in-game world. I created a ‘survivor’ narrative, with students...
being given a backstory intended to position their in-game activities as connected to some kind of ongoing, emergent narrative. This is illustrated in Table 1. Students could log in from school computers, where they would be carrying out activities in the same virtual space, represented by in-game avatars. They could choose to work together in groups, or could work alone.

In order to ensure that neither the narrative nor the broader pedagogical aims of the curriculum negatively threatened the playful aspect of the study, I created an ‘activity matrix’. Rather than presenting the curriculum as a weekly iterative list of activities and milestones that must be completed in order to progress, the curriculum would propose a broad range of activities which students may choose to engage in, which would not be required to be completed in total nor to be completed in
any prescribed order. I began to build a list of the kinds of things that students might use *Minecraft* for – construction, design, photography, journalism – and attached activities and assessments to each one. Some activities are shown in Table 2.

Thus the role of the experimental curriculum was to anticipate student response to the game and to assign learning activities as the practices emerged. In the example in Table 2, students were asked to think about the founding of a city within their *Minecraft* world – with a written and/or printed ‘town design’ being the desired product that students were to complete as an accompaniment to their *Minecraft* experiences. Additionally, students were encouraged to think about letting their mums and/or dads know that they were safe and to send them a message from their *Minecraft* world. They could write a letter or send photographs taken of the various activities that they and their fellow students were engaging in while working inside *Minecraft*.

This allowed the curriculum design to facilitate a sense of authenticity in the ways that students were engaging with the game, while ensuring that pedagogical and curriculum imperatives were not neglected and could be attached to each student-led activity as it emerged. *Minecraft* was not, in this instance, a text that had been re-imagined as a learning tool for the classroom. Rather, the classroom was, in some ways, re-imagined as a space which supported the play of the game.

**Literacy in a new media context**

The class reacted to the exploratory curriculum in a number of ways. Some students were deeply engaged with the game from the outset and, during interviews, described the game being used as curriculum as a highly desirable alternative to ‘traditional’ schoolwork – one which closely mirrored the out-of-school cultures in which they were often immersed. Others demonstrated anxiety regarding the presence of the game in the formal space, seeing it as an intrusion into the mandated curriculum.
valued by their parents. This was seen in classroom transcripts that involved students questioning their teacher about the validity of the game-based curriculum. During interviews, a number of girls described video gaming as a masculine medium and one in which females had no role. Interestingly, though, this did not seem to apply to games found in the mobile phone space, which all of the girls actively played and were happy to demonstrate when asked.

In the next section, I highlight John as an example of one student who participated in the study and demonstrated a range of interesting changes in his attitude towards schooling, schoolwork and his role as a student in the classroom of the study.

**One example: John**

John was 14 and had been identified by a number of teachers as a student who demonstrated significant difficulties with formal learning spaces. He was generally disengaged from his work, with teachers noting that he often refused to complete assignments, and his school attendance was poor. While a formal evaluation had confirmed that John suffered from some kind of learning difficulty, school administrators were not at liberty to discuss the specifics with his teachers, resulting in teacher frustration with attempts to ameliorate what was, to date, an unnamed condition. He was not,
however, disruptive in class. Rather, he was a timid, gentle student, who was often a victim of bullying. His profile was one of a marginalised student within the overall social structure of the school and he was heavily reliant on a small group of students who cared for him and, in many ways, protected him throughout the school day.

John had previously identified as having some expertise in the playing of the game, expertise that went beyond simple competence in the operation of the game’s controls. His peers remarked that he was seen as an authority on how *Minecraft* could be used in progressive and interesting ways, and he was often required to assist the other boys when they wanted to achieve various self-directed goals within the game. John’s expertise as a player of the game was not general knowledge within the class. He was respected by his group of friends, but few other students knew much about him, due to his extensive absences and his social difficulties. John was overwhelmingly shy around the other students and, coupled with his absences, was not considered an integral member of the social composition of the class.

As students began to ask questions regarding the running of the *Minecraft* software and the kinds of activities that may be performed within the game, it became increasingly difficult for a single person to cater to the needs of the entire class. A decision was made between the study teacher and myself, and we asked John to teach two female students about the game. We were unsure if John would be able to engage in that kind of activity and we had concerns regarding how he might be received in the role of instructor rather than student. Ultimately, we felt that closely monitoring John, but giving him the opportunity to assume a different role in the classroom, could be a generative activity which would possibly yield interesting results.

Despite the difficulties in communication that he had previously demonstrated, John quickly became accustomed to his newly-minted teaching role. We watched as he spoke to his fellow students with rising confidence, describing the technical requirements of the *Minecraft* software, helping them troubleshoot their installations, introducing them to the game, assisting them in logging into our server and walking them through the basics of gameplay – design, exploration, construction. Other students noticed what was happening and wanted to sit near John so that they could draw on his expertise in the playing of the game, and John became visibly changed by this sudden spike in interest in him.

Over the course of the eight-week study, John’s attitude toward school had begun to shift and his attendance began to stabilise. In class, he was increasingly considered a valuable resource rather than a marginalised outcast, and students began to look to him for guidance and instruction in the playing of the game. As he began to increasingly feel that his expertise in *Minecraft* was being validated in terms of the school’s administration, he wanted to talk to his teachers about the arcane systems that the game uses, demonstrating a previously hidden aptitude for numeracy, logic, written and visual literacy, and an intermediate level of ICT competency. John began tentatively to re-engage with more traditional school activities. Previously, he had demonstrated little interest in writing, but was willing to begin creating written material for the purposes of teaching aspects of the game to students and staff.

John was eager to complete formal classroom tasks in order to be given the opportunity to freely work on his *Minecraft* projects with his friends. And he began to attend classes more regularly in order to ensure that he did not miss any opportunities to work on the exploratory curriculum. Previously, John had fiercely rejected this kind of traditional literacy work. But, when fused with a new media focus, he found the in-class use of typically informal new media literacies to be far more relevant, rigorous and enjoyable. Similarly, a number of John’s classmates, many of whom were considered by staff to be difficult and complex students who could be disruptive, were equally engaged with the exploratory curriculum, and would ensure that projects in other classes were completed in order to more fully dedicate their school time to working on the exploratory unit.
Revalued knowledge

John’s expertise in *Minecraft* may have been hidden within the formal learning space by a legacy curriculum which does not recognise the validity of new media literacies. Or perhaps the cultural baggage attached to the video game medium means that it is understood as a medium of disrepute, not academically rigorous, and a site of violent, subversive or profane cultural activity. For many educators, video games are seen as the antithesis of ‘legitimate’ texts, which are often seen as being exemplars of the kind of culture that young people *should* be consuming in order to maintain a well-rounded intellectual diet.

Through the mode of instruction used in this study, which drew heavily on informal new media literacies and adopted a constructivist approach supported by non-linear curriculum design, John’s expertise in the playing of the game was revalued and reinterpreted as a valuable learning resource, rather than being seen as an unwanted intrusion into a ‘proper’ literacy classroom space (Selwyn & Facer, 2013). The social, cultural and intellectual rewards of this approach may prove valuable to educators who wish to engage with the new media literacies. A blended approach that directly taps into the cultural currency of the medium may act as an instrument for leveraging the skills, knowledges and understandings developed by school students during their out-of-school lives. In this way, competences that are often ‘obscured’ may be repurposed as valuable and generative classroom resources (Dyson, 2003; Mills, 2011).

For students who struggle with a traditional curriculum, this form of curriculum design may heighten engagement, rebalance classroom power so that students are responsible for the direction of their learning and motivate the broader curriculum aims of formal schooling (Pahl & Rowsell, 2012). By engaging with video games in order to facilitate situated learning, which emphasises co-constructed knowledge and places knowledge acquisition in an active, non-decontextualised context, learners such as John may perceive heightened utility and engagement in the formal learning space of the middle years of schooling.

References


**David Elliott** is a PhD candidate in the Faculty of Education at Monash University. His research interests include video games and new media learning, online cultures as sites of informal literacy activity, and the radicalising of pedagogy and curriculum through emergent technologies. He is currently the online learning developer for the Australian Council for Educational Research, focusing on the design and implementation of new media learning systems. He can be reached at david.elliott@acer.edu.au.