3D virtual worlds as environments for literacy learning

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3D Virtual Worlds as environments for literacy learning

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Abstract

Background
Although much has been written about the ways in which new technology might transform educational practice, particularly in the area of literacy learning, there is relatively little empirical work that explores the possibilities and problems - or even what such a transformation might look like in the classroom. 3D virtual worlds offer a range of opportunities for children to use digital literacies in school, and suggest one way in which we might explore changing literacy practices in a playful, yet meaningful context.

Purpose
This paper identifies some of the key issues that emerged in designing and implementing virtual world work in a small number of primary schools in the UK. It examines the tensions between different discourses about literacy and literacy learning and shows how these were played out by teachers and pupils in classroom settings.

Sources of evidence
Case study data are used as a basis for exploring and illustrating key aspects of design and implementation. The case study material includes views from a number of perspectives including classroom observations, chatlogs, in-world avatar interviews with teachers and also pupils, as well as the author's field notes of the planning process with accompanying minutes and meeting documents.

Main argument
From a Foucauldian perspective, the article suggests that social control of pedagogical practice through the regulation of curriculum time, the normalisation of teaching routines and the regimes of individual assessment restricts teachers' and pupils' conceptions of what constitutes literacy. The counternarrative, found in recent work in new litearcies (Lankshear & Knobel, 2006) provides an attractive alternative, but a movement in this direction requires a fundamental shift of emphasis and a re-conceptualisation of what counts as learning.

Conclusions
This work on 3D virtual worlds questions the notion of how transformative practice can be achieved with the use of new technologies. It suggests that changes in teacher preparation, continuing professional development as well as wider educational reform may be needed.

Introduction

The idea that new technologies can activate changes in practice is a key theme in the contemporary discourse of educational reform. New and 'emerging' technologies have repeatedly been described as 'transformative' by pundits and policy-makers despite the fact that this description has been subjected to some critique (see for example: Burnett et al 2006; Selwyn 2004). Informed by the wider discourse of technological determinism which asserts " ... that the web and computer applications are creating a digital culture that will revolutionize commerce, education, and social relationships..." (Bolter & Grusin, 2000:60) this view tends, amongst other things, to downplay the role of human agents and the broader social contexts of their lives. Counteracting this discourse of technological determinism, in which hardware and software are often invested with transformative power, a socio-cultural perspective which brings everyday practices to the fore and emphasises what children and young people actually do with new technologies and how they are integrated into their lifeworlds may well offer a more fruitful way forward for educators by providing a richer account of the role of technology in social interaction and learning. The work of a number of influential literacy educators is flavoured by this sort of approach.

In the field of literacy education, the notion that new technologies are a medium for new or digital literacies - literacies that offer distinctive opportunities and challenges for schools and teachers - is widely debated (Lankshear& Knobel, 2006; Merchant, 2007), and often draws on observations and studies of situated insider practices in everyday contexts. Examples are Markham's study of MOO environments (Markham, 1998), Ito's work on mobile technology (Ito et al.,2005) and boyd's study of social networking (boyd, 2007). However, there is less work that traces these practices as they cross into the official domains of education, or explores how they might be translated or adapted to address specifically educational purposes. The ambitions of texts like Carr et al.'s (2006) work on computer games and my own on Web 2.0 (Davies& Merchant, 2009) move in this direction, and certainly invite more sustained empirical investigation of the areas in question, but apart from the plethora of research into interactive whiteboards and electronic books, classroom

studies of digital literacy, particularly in the primary sector, are surprisingly rare (Burnett, 2009).

The meaning-making practices associated with computer gameplay and virtual worlds constitute a distinct subset of research on digital literacy. Steinkuehler (2006; 2007) makes a significant contribution to our understanding of the former with her exploration of in-game and out-of-game literacies, whereas Marsh's (2008) work on Club Penguin, Gillen's (2009) study of Teen Second Life, and my own explorations of Active Worlds (Merchant, 2009) investigate the diverse literacy practices of virtual world gameplay. The implications of this work for formal education are considerable, particularly if the growth trends of the metaverse (see fig. 1) continue. Educators may need to take these new experiences of literacy into account simply because of their role in learners' lives. But they may also want to incorporate some gaming, and some virtual world play into school life, and in this respect the claims made by Gee (2004) about the learning that takes place in games, and by researchers that claim that virtual worlds can be powerful learning environments (Dede et al., 2006) are persuasive, but as yet under-explored.

<INSERT Figure 1. here>

This paper looks at some of the issues that are raised when virtual world technology is introduced in school settings, and builds on earlier published work (Merchant, 2009) in order to reflect upon the lessons learned from a specific research project and to identify some key concerns for the more general use of virtual worlds in classrooms. In particular, I look at how the imaginings of the educators who collaborated in designing a 3D virtual world environment for literacy work with 9-11 year-olds were translated into classroom realities by teachers working under the influence of powerful pedagogic and curriculum discourses. Using a Foucauldian perspective I show how the social control of pedagogic practice is continually re-invented (Foucault, 1997) through the use of space and disciplinary time, as well as through normalised routines and practices. I illustrate this with examples of activities that demonstrate the gravitational pull of print literacy. This is placed alongside the counternarrative of new literacies which is underpinned by the view that there is a growing separation between the everyday meaning-making practices of children and young people and those that are valued in the school system (Lankshear & Knobel,

2006). I conclude by arguing that transformative practices will need to be based upon a re-conceptualisation of learning in which meaningful interactions between pupils and teachers are informed by the wider access to the ideational and relational resources that new technology makes possible.

The study

Barnsborough, the virtual world under discussion, was built by virtuallylearning.co.uk in the Active Worlds Educational Universe (AWEDU) and was designed by advisers, consultants and teachers working in primary schools in one local authority in the north of England. The aim of the project was to raise achievement in literacy in a small group of 10 project schools. Whilst school performance data and informal teacher assessments suggest that this work had a significant impact on pupil motivation and performance, the main focus here is on the processes of implementation and the implications for curriculum and pedagogy, rather than the successes of this particular initiative. The virtual world was introduced to Year 5 and Year 6 classes in the project schools in September 2006, after a six-month preparation period. The initial project concluded in July 2008. From that point on, the world became freely available to all primary schools within the local authority. At the time of writing, the virtual world is underused despite being available to a wider number of schools than those originally targeted, suggesting that the world, like many of its technological predecessors, could not be as easily accommodated into classroom life as the designers had initially hoped.

To explore Barnsborough, pupils selected off-the-shelf avatars, entering the metaverse through underground sewers and controlling their avatar with simple keyboard strokes. In the project described here, teachers explained to pupils that Barnsborough had been hurriedly and mysteriously abandoned by its inhabitants. The broad objective for children was to solve this mystery by collecting evidence available in-world in a number of media and textual forms. These included:

1. *Environmental print*

This material forms part of the texture of the 3D virtual world and is designed to create a real-world feel to the visual environment and also to provide children with clues. Examples of this include shop signs, graffiti, logos, posters and advertisements.

2. *Tool tip clues*

These give additional explanations or commentaries on in-world artefacts and are

revealed when 'moused over' with the cursor. Tool tip messages draw attention to environmental features ('looks like someone's been here') or carry navigational information ('you'll need a code to get in').

3. *Hyperlinked texts*

Mouse-clicking on active links reveals a more extended text. Examples include an oildrilling proposal (a Word document); a child's diary (a Flash document); and a web page on aliens. Some of these links are multimedia (such as phone messages and music clips) whereas others provide examples of different text types, such as text messages and on-line chats.

4. *Interactive chat*

This is the principal means of avatar interaction and involves synchronous chat between visitors to the world. This is represented as speech bubbles above the avatars' heads and in scrolling playscript format in the chat window beneath the 3D display (see Figure 2).

<INSERT Figure 2. here>

From this perspective Barnsborough is an immersive textual universe incorporating some of the features of a game or simulation in which visiting avatars participate in a 'constellation of literacy practices' (Steinkuehler, 2007: 297). As we shall see the in-world literacy practices of virtual world gameplay were also related to real world classroom practices – many of these being explicitly linked to the official, literacy curriculum. Project schools followed up visits to Barnsborough in their timetabled literacy lessons, as part of their established curriculum provision. The texts located in the virtual world provide visitors with a number of possible accounts and solutions to the problem of why Barnsborough has been abandoned including a major bio-hazard, an alien abduction, a political or big business disaster.

Over the two and half year period of the project, I worked with the design team as a consultant and researcher following the process from initial planning into classroom implementation. The case study material collected includes views of the project from a number of perspectives including classroom observations, chatlogs, in-world avatar interviews with teachers (five sessions in total) and pupils (nine sessions

in total), and my own field notes of the planning process with accompanying minutes and meeting documents. An evaluative questionnaire was also distributed to project teachers at the end of the final summer term (July, 2008). Classroom observations focused on the world in use, rather than follow-up work, and involved 'over-the-shoulder' observations of children and their avatars. These were conducted in two of the project schools on a termly basis. Each observation was bounded by the timetabled session – being between 40 and 60 minutes in duration. Chatlogs of these sessions were archived by the researcher. During these observational visits, I negotiated follow-up in-world interviews with groups of pupils. These normally took place in school break or lunch times, were located in Barnsborough, and were conducted by me and through my avatar. Although the pupils were co-present in the classroom or computer suite at the time of the interview, I was elsewhere and they communicated with me through their avatars. These interviews were semi-structured in form, allowing participants the scope to explore areas of interest. The pupil/avatar group size was 4 or 5 and the group interview's average duration was about 20 minutes.

In addition to this material, I collected documentary evidence and fieldnotes derived from approximately 18 hours of planning meetings - although this is hard to quantify with any precision, since it was enriched by more informal email exchanges and regular in-world visits. Between May and July 2008, I conducted one-to-one avatar interviews with five of the project teachers in the virtual world and distributed a short evaluative questionnaire to all ten (seven were returned). My overarching research strategy was to provide insight into the ways in which virtual worlds could be used to promote new literacies in the classroom by constructing what Stake (2003) refers to as an instrumental case study. Broadly speaking, then, the approach involved an exploration of what Markham (2004, p. 97) describes as 'the context of social construction', the negotiations of meanings, identities and relationships that occur discursively in and around the virtual world.

This paper is based upon an inductive analysis of the case study material, identifying themes that are central to a consideration of literacy and literacy learning with respect to new technologies. As such they 'emerge out of the data rather than being imposed on them prior to data collection and analysis' (Patton, 1990: 390).

In what follows I discursively explore 3 themes: the first is concerned with the design of the virtual world; the second with the way the virtual world was adapted to fit the existing literacy curriculum; and the third with children and teachers' perceptions of the literacy work that took place.

<INSERT Figure 3. here>

Designing and imagining a virtual world for literacy learning

As educators we invest considerable time and energy in planning for the learning experiences of our students. Planning is enshrined as a key professional skill in training documents and programmes for teachers working at every stage of compulsory education (for example: TDA, 2009). Design, on the other hand – particularly in the sense of curriculum design – is often, and perhaps increasingly, conceived of as the work of official bodies, examination boards, and government agencies. In this sense of the word, design could be associated with the aims and ambitions of a curriculum within the overarching project of education. So, for example, design has been described in a way that suggests a broad vision as '...an active, willed, human process in which we make and remake the conditions of our existence...' (Cope& Kalantzis, 2000:203). And yet we still talk about designing games, designing activities, and designing environments - perhaps because the concept captures the sense of creative possibility that has been drained out of the act of planning by the discourses of learning objectives, learning outcomes and lists of skills and competences. I argue here that the design process, particularly when it involves new technologies, necessitates a complex of imaginings which are value-laden (see Livingstone, 2009; Merchant, 2009), and that these imaginings are modified when they meet the discourses and practices of classroom life.

<INSERT Figure 4. here>

The tension between the idea of design as an opening of creative possibility and the reality of curriculum planning, in which particular themes and objectives have to be covered, was a key issue in the Barnsborough project. In the first instance, the planning team was involved in the design of a multimodal virtual space which would serve as both an environment and a resource for literacy work, and this enterprise

included taking decisions about the overall context as well as the look and feel of objects in the virtual world. Not only were the planners grappling with the 3-D geography, conceived in terms of zones (see the planning document in Figure 3), they were also creating the world's invented history and the texts which would reveal the 'back story' (Figure 4). Imagining the geography involved thinking about where pupil-avatars might go, what might interest them as well as what they might do, read or discover in particular locations. So, at this design stage the planning team was also obliged to think about how imagined pupil-avatars would fare in this world. The consensual view of the planning team, captured in my fieldnotes, was that students would *discover* things in the world, and *make meanings* and *form hypotheses* about previous events in Barnsborough. Implicit in this design, then, was a view of active and exploratory learners motivated by an interest in problem-solving.

Figures 3 and 4 show how imaginary environments were conceived by the planning group with this heuristic in mind. Figure 3 shows how learning spaces were to connect – a cave system joins the park with 'The Singing Cricket', a basement club in the town (but only if you discover the caves and then choose the right cave entrance). Similarly the design for the Park Zone is not only subdivided into navigational, storyline and *vague* 'clues' but also evokes a particular atmosphere. The planning notes read: 'A ghostly sound of brass band music should be played when the avatar is within the bandstand. I imagine the music to be played softly in the background (like it's a long way away – in the distance).' This attention to detail illustrates how at the design stage, planners were imagining how pupils might become immersed in a world in which they would be making links, forming hypotheses and generating storylines around the clues they discovered. Whilst teacher representatives on the planning group appeared to share this view, classroom practice often involved a series of compromises, in which the idea of investigation and exploration was translated into direction and focused instruction (see below). In a similar vein, responses to the teacher questionnaire suggested that the world was often seen less as an immersive experience and more as 'a very good tool for integrating ICT into the curriculum'; 'a resource that provided a useful basis for report writing' or 'a motivator for boys.'

Adapting the virtual world to fit the literacy curriculum

In an earlier paper (Merchant, 2009) I explored how learning theories together with notions of orderliness and legitimate behaviour work together to create what Pratt (1991) calls the 'unified social world' of professional imaginings. Perhaps in this sense, designing a virtual world for learning is not so different from designing real world classrooms. If the Barnsborough planning team imagined active learners engaged in playful discovery, the teachers who eventually introduced the virtual world into classrooms were governed by other stories of learning, were constrained by institutional norms and routines, and obliged to adopt narrower definitions of literacy, such as those of the Primary National Strategy (DfES, 2006). Hence the support materials generated during teacher workshops were, quite predictably, tailored to fit familiar pedagogic moves (such as shared text work, guided writing activities and so on) – those explicitly referred to in the Primary National Strategy and promulgated through local in-service training (DfES, 2006) – in short, they fitted the official version of learning and the official version of schooled literacy.

In a similar way, children's access to the virtual world was subject to institutional routines, and delimited by the availability of hardware. In practical terms, this meant that Barnsborough was usually visited during a weekly timetabled session in a computer lab in ways that favoured individual and paired work. Literacy, on the other hand, was timetabled on a daily basis, was classroom based, and was comprised of various combinations of whole class and individual activity – and this pattern largely dictated the shape of follow-up work on Barnsborough. The use of technology in literacy routinely involved teacher demonstration on whiteboards and independent pen and paper pupil outputs. Teachers were quite understandably focused on a view of literacy that was not only governed by a genre approach, but also by particular ways of understanding and teaching those particular genres referred to in the curriculum and circulated through approved support materials. So despite the recognition by some teachers that 'texting and chat are genres in their own right' the dominant discourses of teaching approaches, the separation of literacy from technology, and the primacy of official versions of print literacy dictated how Barnsborough was viewed and used.

The influence of these official discourses can be illustrated by two examples. The first is drawn from the archive of curriculum materials and accompanying fieldnotes, and the second from in-world pupil interviews. In the first case, one of the project teachers attempts to formalise what her students have learnt about Barnsborough, and about literacy, through the pedagogic device of a quest-type activity. Much could be said about the provenance and assumptions of quest texts and their use in formal and non-formal settings, but here I simply focus on how the *Barnsborough Reading Quest* illustrates the recontextualisation of virtual world play into a familiar classroom routine. Figure 5 shows a page extract from the *Barnsborough Reading Quest* a booklet designed by one of the most active and influential teachers in the project.

The 6-page quest booklet is carefully designed and word-processed, drawing either consciously or unconsciously on the genre of school literacy assessments in general, and specifically the SATs test booklet, both in layout and syntax. So for example, question 4 is framed by a how question underneath which we see the instructions, 'Give TWO reasons' (a capitalised number two) and then the enumerated response section. In the side margin there is a box which shows the mark-weighting. Now although the booklet's introduction tells us that 'The aim of this quest is to help you discover more about Barnsborough...' (note the use of the word 'discover') this is conceived of in terms of individual pupils locating specific texts and 'doing comprehension work' on them. The process is further reified by the teacher's accompanying marking schedule which imitates the official by identifying the assessment focus and the marks available – in the case of the oil drilling proposal this is 8 items carrying a total of 11 marks. In this and other ways, the fluid and interactive in-world interactions through which children engaged in exploratory meaning-making using new literacies became the handmaiden of a conventional print-based literacy assessment.

<INSERT Figure 5. here>

A second example of how the Barnsborough work became absorbed into more traditional schooled literacy practices is drawn from pupil interview data. In the extract from an in-world group interview, shown below, I ask the four child avatars

what writing they have done 'in Barnsborough'. Interestingly enough their initial responses are all about writing they have done *out* of Barnsborough.

> KM: mystery solving mind maps and notes
> KC: sometimes we take notes and mind maps
> KB: note taking . mind maps and mystery solving
> ....[several repetitions of this by other children]....
> LW: stories
> DC: explanations
> Guy: yeah
> KM: perswasive text n story openings
> KC: we do things like storys
> KB: exsplanations story's and perswasive leaflets also we wrote recounts

Note that all of the terms used by the children to describe written text can be traced back to text types and activities outlined in the original curriculum document *The National Literacy Strategy* (DfEE, 1998) introduced in England as part New Labour's programme of educational reform. Despite the introduction of revised curriculum documentation at the time of the Barnsborough project, it seems that the discourse about text types (genres) was still prevalent and, moreover, that its importance was effectively and successfully communicated to children. Another group of children also showed that they understood just how mastery of these text types was a key to the description of educational success. The extract below shows children discussing the end of year tests (SATs). SATs are in place:

> SJ: 2 show teachers how good we r at different subjects!
> GP: to test your abilities
> GB: to show teacher how good we are
> TM: geting a good educhtion
> Guy: OK I bet you are!
> AH: sats are to test our kolage and get a good education
> SJ: we r thank you !!

A clear picture emerges from this data – one in which children have been successfully inculcated into a view that the genres associated with a curriculum that privileges print literacy are the ones that count as writing and, furthermore, that mastery of these measured by SATs results are what constitutes a good education.

Virtual and real life learning of literacy

If the pupils could be seen as knowledgeable, and to a certain extent complicit in their understanding of the rules of the game called 'schooled literacy', the majority of them also expressed a sense of enjoyment and motivation when they talked about the

experience of visiting the virtual world. This was consistent with the intentions of the design group that had anticipated high levels of pupil engagement. During group interviews children enthused about the ways in which Barnsborough was 'cool' or 'mint' (Merchant, 2009); however, individuals often expressed more nuanced views. These views included an enthusiasm for Barnsborough's game-like quality 'it's good because you can walk around and find clues – it's like a game, a virtual game', to a sense of frustration with the lack of interactivity 'if only there were some shopkeepers' (visitors to Barnsborough are able to enter a number of life-like and well-stocked shops but can't barter for or buy any items). Children also reported on variable levels of engagement, from the cautious – 'I get put off when I think the world is fake' to the immersive 'I enjoy the world that much that sometimes I forget what time it is'.

Teachers tended to stress the motivational effect as well, often referring to the ways in which the virtual world built on children's out-of-school experiences of computer games, although it should be acknowledged that such experiences were assumed rather than evidenced in any way. The dominant view from teacher survey and interview data could be described as one in which Barnsborough was seen as a *stimulus* or *resource* for real world literacy learning and teaching. In varying degrees the teachers felt the responsibility of enacting the official literacy curriculum, and so, although they played in the world too, both in and out of classroom hours, they tended to see Barnsborough as a way of enriching existing practice rather than transforming it. Hence the disappointment expressed by one teacher who described how:

> 'Some boys who were really into computer games and the virtual world loved the ICT aspect. But when it came to writing they still couldn't be fooled to write and still moaned.'

Here, the use of the verb *fooled* provides a strong indication of how virtual world play was positioned in relation to the official literacy curriculum - perhaps not always as a way of entrapping the reluctant but often as an enticement.

In some cases, this use of the virtual world met with resistance from the pupils who enjoyed exploring Barnsborough and the literacy practices embedded in it, but were unwilling to transfer this enthusiasm into conventional literacy. For one pupil, at least, this was quite explicit in his evaluation of the project.

'The virtual world is good and not good. I enjoy looking around for clues, I don't enjoy writing about the world when I come out though'

Here the idea that the Barnsborough experience was negatively affected by the formal work which routinely followed it is quite clearly communicated.

To polarise in-world and real life literacy would be to oversimplify the children's experience, since a minority did report on difficulties in reading and writing *within* Barnsborough. Although the view that 'talking in the world helps me make my ideas better' was widely held - and remember that talking in this context is a written conversation - a few pupils were frustrated by the perhaps all too familiar challenges of spelling, which made it hard for them to engage. In some ways then, the virtual world reproduced the literacy practices of the formal curriculum as well as its inequities. These practices were dominated by adult views of literacy learning, strongly shaped by official discourses and informed by ideas of how some groups were underachieving (in this case boys) and how they might be motivated to learn (new technology).

Yet at the same time the virtual world also provided a glimpse of the possibilities and practices of digital literacy. Teachers and pupils from a number of different schools experimented with avatar-based gameplay in classroom settings; the possibilities of interacting with those not immediately present were explored; pupils were able to work in an environment which could only be understood by reading and downloading digital information in variety of media, and in-world communication depended upon rapid interactive written communication. There is plenty of evidence in the chatlogs of children's familiarity with the latter, their skill in using this kind of interaction as well as inventiveness in representing their voices. The extract below captures this. Three pupils are in-world and looking for clues, collaborating online in ways that are engaged and purposeful.

TO: go to the singing criket some 1 this is so spooky
WC: wev got a alien
OA: no don't think so
WC: where do u mean
OA: ininter c
TO: singing criket on stocks lane

The extract conveys their excitement as well as a certain familiarity with the linguistic innovation that characterises chat. But not only did they use commonly found abbreviations such as 'u' , '1' as well as 'r' snd '4', they also made plausible attempts at representing their local dialect – for example 'Gis sum clus wire yu ar' was used as a dialectal rendering of 'give me some clues about your location'. So whilst the dominant view of schooled literacy prevailed, as I suggested in the previous section, this did not preclude explorations of newer digital literacies.

In sum, Barnsborough provided plenty of engagement with a range of old and new literacy practices and provoked a strong sense of motivation in learners. However, in an educational climate in which specific kinds of achievement in specific kinds of literacy tasks are favoured, it is perhaps inevitable that they came to the fore in the practices of teachers and in the perceptions of their students.

Discussion

Virtual world technology and the literacy practices that are involved in associated gameplay extend, and in some cases challenge dominant conceptions of literacy, and particularly those associated with schooled literacy (Merchant, 2009). According to some commentators, introducing virtual world gameplay into classrooms can be transformative (Dede et al., 2006); but here, I have argued that this rather simplistic view tends to downplay the role of human agents and the broader social contexts in which they operate. My analysis in this paper shows how the social control of pedagogic practice mitigates against significant innovation, as new literacy practices are pressed into the service of older ones. In ways that are reminiscent of Foucault's (1997) description of schooling the use of space, disciplinary time and the regulation of activity institutionalised conventional approaches to literacy learning and teaching in this project. So on the one hand timetabled computer lab activity meant that access to Barnsborough was limited, and on the other timetabled literacy lessons involving familiar routines (shared, guided and independent work) narrowed the focus of work on, and in Barnsborough. Furthermore the dominant discourses of schooled literacy that emphasise particular understandings of particular textual genres informed the views of both teachers and pupils. Testing regimes, although very different from the examinations described by Foucault, still guaranteed 'the movement of knowledge from the teacher to the pupil' (Foucault, 1997:187), as the influence of SATs test

papers on the teacher-designed quest booklet illustrates, and secured the identity of pupils in individual performances of ability, rather than in collaborative acts of problem-solving.

In an earlier paper (Merchant, 2009) I argued that digital literacies can disrupt classroom routines by introducing communicative practices that are difficult to control and difficult to integrate into dominant classroom routines. However, the picture that emerges from this analysis is one in which digital literacies and the virtual world in which they were embedded, were relatively easily translated into resources and stimuli for the instructional routines of schooled literacy with their emphasis on print-based genres. Despite the fact that there was some recognition that 'texting and chat are genres in their own right' and that the construction of a shared and imagined narrative to explain events in Barnsborough was valuable, these processes did not receive the same attention and emphasis as note-taking and report writing.

Conclusion

If the school literacy curriculum is due for radical reform because it no longer reflects everday literacy practices nor prepares the young for a digital future, then good exemplars of new literacies in the classroom are needed. But although an increasing number of literacy educators are in search of what Carrington (2009:7) describes as 'a literacy education that is procactive and provocative rather than reactive to local politics and predictable cycles of literacy crises', the Barnsborough project shows how difficult this is to achieve. Partly because of this, I suggest that there is a need to re-evaluate the broader areas of curriculum and pedagogic practice in which communication and literacy are located. The reforms of primary education recommended by the Rose Review (DCFS, 2009) point in this direction, and certainly articulate a more integrated role for new technology in the curriculum than is currently in place. But rather than thinking that new technologies can activate changes in practice we should begin to think about how changes in practice could create possibilities for using new technologies in innovative ways.

Qian (2000) in a review of development work in Second Life argued that:

> '3D virtual world learning environments provide a more dynamic platform for
> social interaction, communication, expression and approaches to learning, all

of which is enabled by a plethora of media and technology. Therefore, one of the major goals of new media literacy education in the digital age is to develop students' transmedia skills. Students' technical and literacy skills across multiple media channels and modalities become especially important in this technology-rich and media-saturated learning environment.[.....] Equally important [....] are the spirit, habit, and skills of inquiry.'

Qian 2000: 807

What is of significance here is not the idea of developing technical skills across media, important though they are, but the suggestion that more generic attitudes of mind and dispositions towards learning are needed. If the digital literacy practices of virtual worlds offer anything distinctive to formal education these attitudes and dispositions may hold the key. Enthusiasts claim that virtual worlds can promote learning that emerges from what Graham (2008) calls the 'playfully social' in which learners can benefit from network effects (Gauntlett & Jackson, 2008), developing interest-driven collective intelligence in which knowledge is distributed and collaboratively produced (Gee, 2004). If this is indeed the case then they pose a fundamental challenge to traditional schooling. The current emphasis on standards, derived from measures of individual performance on a rather narrow range of literacy practices coupled with pervasive and powerful discourses of what constitutes literacy instruction, limits our capacity for innovation. Changes in teacher preparation, continuing professional development as well as wider educational reform may be needed. The real transformation may rest on how we can re-imagine meaningful interactions in which pupils and teachers have the wider access to the ideational and relational resources that new technology can enable.
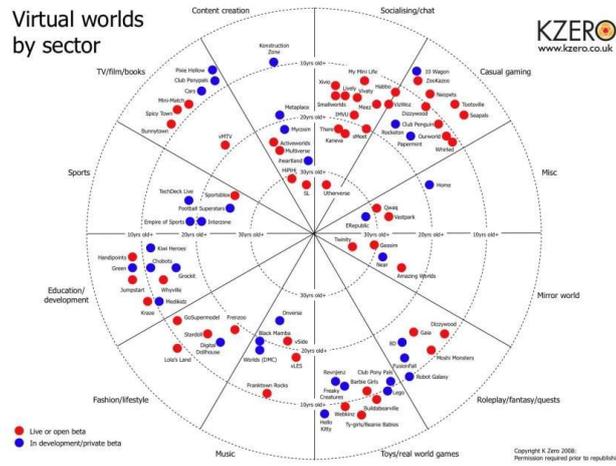
Figure 1. Mapping the metaverse (courtesy of K-Zero, 2008)

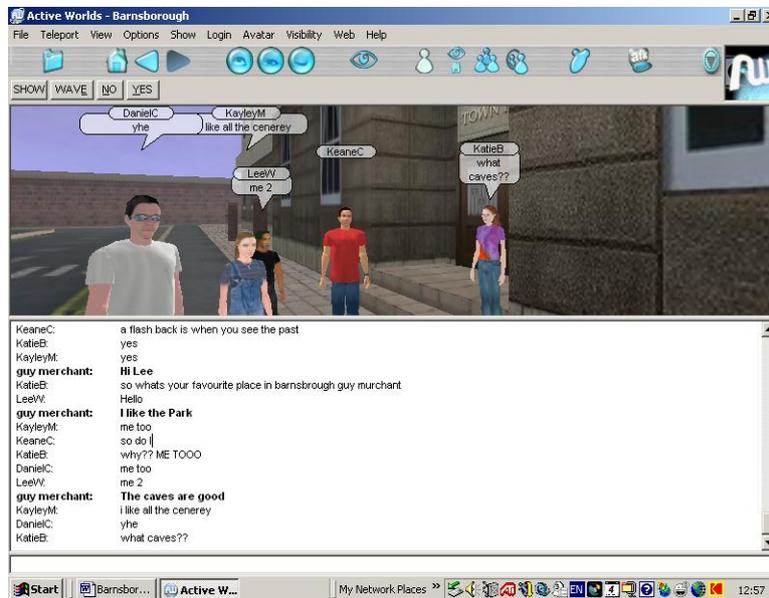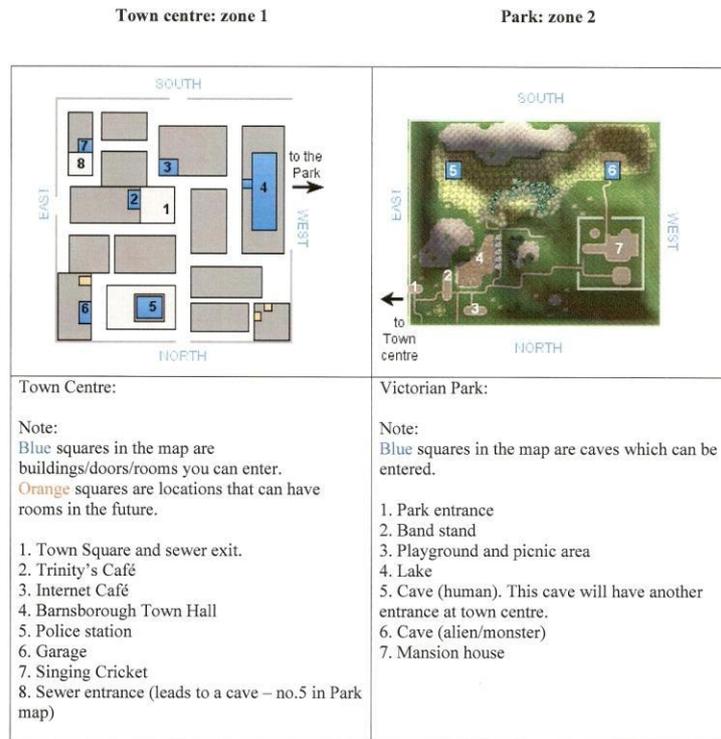Figure 2. Screenshot of an in-world interview with pupil-avatars

Figure 3. Spaces for learning: the geography of Barnsborough

Town centre: zone 1	Park: zone 2

Town Centre:	Victorian Park:
Note: Blue squares in the map are buildings/doors/rooms you can enter. Orange squares are locations that can have rooms in the future. 1. Town Square and sewer exit. 2. Trinity's Café 3. Internet Café 4. Barnsborough Town Hall 5. Police station 6. Garage 7. Singing Cricket 8. Sewer entrance (leads to a cave – no.5 in Park map)	Note: Blue squares in the map are caves which can be entered. 1. Park entrance 2. Band stand 3. Playground and picnic area 4. Lake 5. Cave (human). This cave will have another entrance at town centre. 6. Cave (alien/monster) 7. Mansion house

Figure 4. Extract from planning document – design for the park zone

A mucky sign (covered in mud and grime) on the pier saying: No public fishing, order of Barns... (the rest of the writing is obscured by the muck)

Navigational Clues: None

Storyline Clues:

On the surface of the lake dead fish should be floating, indicating pollution of the water. The water needs to have an area that looks dirty and polluted (not the whole lake) – possibly scum floating on the water. A knocked over canister could be positioned on the bank with some dark coloured liquid spilling out of it into the lake. On the opposite bank there could be a muddy, torn up area, indicating that perhaps something has been pushed into the lake or something has been dragged itself out of the lake.

Area Three:

Within the bandstand a notice board or information board should be located here. This will full of information. The clues could provide a variety of different clue types – see below.

Vague Clues:
A ghostly sound of brass band music should be played when the avatar is within the bandstand. I imagine the music to be played softly in the background (like it's a long way away – in the distance)

Evidence of people leaving in a hurry - a busker could have been playing within this stand, but all is left is his instrument case full of loose change and his sheet music.

Public notice (on official council paper, positioned on the board) which could read as follows:

Barnsborough Park will be closed to the general public as of Saturday 8 September and will remain closed until further notice. This is due to essential maintenance work. For further information please contact the Environment Official on 884357.
We apologise for any inconvenience this may cause.
Thank you for your cooperation

Navigational Clues:

The board could provide a basic map of the park – highlighting places of interest or areas that are 'out of bounds'

There could also be an area of the board that is dedicated to the history of this park and its founders, e.g.

Locke Park was given to the town by Phoebe Locke, in memory of her husband Joseph Locke. It opened in 1862. The land is held in trust by Council as a park and pleasure

Figure 5. Oil Drilling Proposal: extract from the Barnsborough Reading Quest

Oil Drilling Proposal

(Located in the Town Hall)

1. Who wrote the oil drilling proposal? ____ mark

_____

2. Tick **TWO BOXES** to show which jobs would be created in the town if the oil drilling went ahead.

____ Nurses
____ Managers
____ Teachers
____ Labourers
____ Librarians

1 mark

3. How many new jobs would be created in Barnsborough by the oil drilling? Circle the correct answer.

| 50 - 100 | 100 - 250 | 250 - 500 | 500 - 1000 |

1 mark

4. How would the oil drilling benefit Barnsborough?

Give **TWO** reasons

i) _____

ii) _____

2 marks

5. Look at **page 3** of the oil drilling proposal. Read the second paragraph. Select and copy **TWO WORDS** which indicate the disruption oil drilling may cause.

1 mark

_____   _____

Short biographical notes on all contributors

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