Critical perspectives on curriculum and ICTs: the 3D model, literacy and computer games

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In the 21st Century, new technologies, in particular interactive multimedia and the internet, challenge many aspects of our teaching practice and assumptions. What counts as knowledge, what counts as literacy, the ways we teach and even the relationships we form, need to be considered anew, coloured and reshaped as they are by changing cultural practices brought about by global commerce and ICTs. Two key frames of reference for thinking about these changes and their implications for Education are the notion of an 'information revolution' (Castells 1996) and the changing nature of literacy, with its shift towards multiliteracies, or thinking of literacy as design (New London Group, 2000). Both have powerful implications for how we conceptualise curriculum, and teaching, and for the ways in which we ask students to work with the new technologies (Snyder and Beavis 2004). In this paper, I discuss three examples of curriculum utilising commercial computer games, or young people's knowledge of these games, as exemplars of Green's 3D model for literacy and technology pedagogy and curriculum (Durrant and Green 2000), and argue for the usefulness of this model as the basis for curriculum design.

The 'information revolution', many argue, changes the nature of knowledge and of what it is that we value. (Castells 1996). Lanham speaks of a 'tsumami' of information (Lanham 2002) we must learn to negotiate, and the development of an 'attention economy' where attention, rather than information, is the commodity most in demand, with consequent serious effects for education (Lankshear and Knobel 2002, de Castell and Jenson 2003). This information revolution, it is argued, ' lead[s] to changing cultural practices by reshaping the way we work, study, play, form relationships and communicate' (Pashler 2001:15). As a consequence, 'new technologies make it possible for us as educators to do new things in new ways and require us to reexamine the epistemologies of what to teach.' (Pashler 2001:15-16*)*.

The challenges to curriculum are far reaching, not least in relation to the changed forms literacy takes, and with respect to the technocultural worlds many students in

our classes now inhabit. Both the medium and the context for education have changed, as have the types of textual worlds young people can be expected to inhabit. Thus, Durrant and Green argue, what we are seeing is ' a profound media shift in literacy, schooling and society - a broad-based shift from print to digital electronics as the organising context for literate - textual practice and for learning and teaching' (Durrant and Green 2000:89)

Bridging the gap between the technocultural world outside the classroom and the classroom world is about more than making connections between students present technopopular culture worlds and schools, although that is important and productive in itself. It also means 'bridging the gap' between the kinds of world schools and education have been built around (full employment, stability, fixed bodies of knowledge and so on) and the world young people will increasingly called upon to occupy - a world already changed in many respects by new technologies and information and continuing to change quite rapidly. Kress and others argue that, in contrast to earlier periods of relative certainty, what we are faced with now is uncertainty and rapid change, where what is required is an 'education for instability' (Kress 2000:133). In such a context,

> *"What remains constant is the fundamental aim of all serious education: to provide those skills, knowledges, aptitudes and dispositions which would allow the young who are experiencing that curriculum to lead productive lives in the societies of their adult periods."* (Kress 2000:134)

To teach effectively in such a context, we need to reevaluate and reconceptualise subject areas (knowledge), teaching mediums (literacy, technology) and some argue, students themselves as we try to imagine and understand the future worlds we are preparing our students for. This is not to make apocryphal claims that nothing that ever mattered matters anymore. Quite the contrary. What it does mean, however, is that we need to reconceive of how 'what we have always valued' might be achieved in this new context. In English and literacy curriculum, such values include finding ways for students to become highly engaged and reflective - critically literate - about the texts and 'content' that they study; helping students develop a high level of literacy competence, understanding and expertise in English and other subject areas; creating contexts where students can become excited about learning; providing powerful and self evident links between students' present and future in- and out-of school worlds; designing curriculum where students can be interested, informed, proactive, confident, creative, .able to solve problems, and to have a strong sense of justice, morality and community. These things don't change.

In the context of global information and technocultural change, however, we need to rethink how these things might be achieved. To envisage this process, and to plan how we might move forward, involves reimagining the curriculum and the future world young people might be expected to inhabit. Much can also be learned from looking at how young people learn and engage with ICTs in their out of school worlds (Facer, Furlong, Furlong and Sutherland 2003, Livingstone and Bovill 2001, Gee 2003 et al.) We need to think about what the curriculum should do and be, the links between schooling, society and curriculum, and the kind of curriculum that will best serve young people's present as well as future needs. In practice, this means finding ways for students to be active, critical and questioning, to be engaged in real tasks, to

be creative and imaginative and to undertake work that has meaning and purpose, in their work with ICTs as elsewhere. It means learning about and using ICTs in ways that support and extend thinking and understanding, about ICTs and through ICTs but with a focus on ideas, information and tasks that are important, relevant and engaging. It means integrating curriculum and assessment tasks by designing assessment systems that recognise and support these curriculum priorities.

The 3D model originally developed as a way of thinking about subject specific literacies (Green 1988) and since then adapted to literacy and technology in a number of quarters (Lankshear et al. 1997) provides a useful model for conceptualising ICT-based curriculum. Green proposes that we think about literacy and technology in relation to three dimensions simultaneously - cultural, critical and operational. The model

"provides a framework for curriculum designed around the use of ICTs that recognises literacy as a contextually situated set of social practices, and builds in the opportunities for young people to be actively engaged in acquiring and critiquing ICT-mediated skills, knowledge and literacies. It provides a framework or template for working simultaneously in these three dimensions - learning how to use technology and language, ensuring textual practice and classroom activities are meaningful and recognised as socially situated, and building in opportunities for critical thinking - critical literacy - and critique. The model also emphasises the practical, with a strong emphasis on 'the priority of an experience (- and activity- oriented curriculum, over an instructional curriculum, or of teaching for learning over learning from teaching'" (Durrant and Green 2000:98)
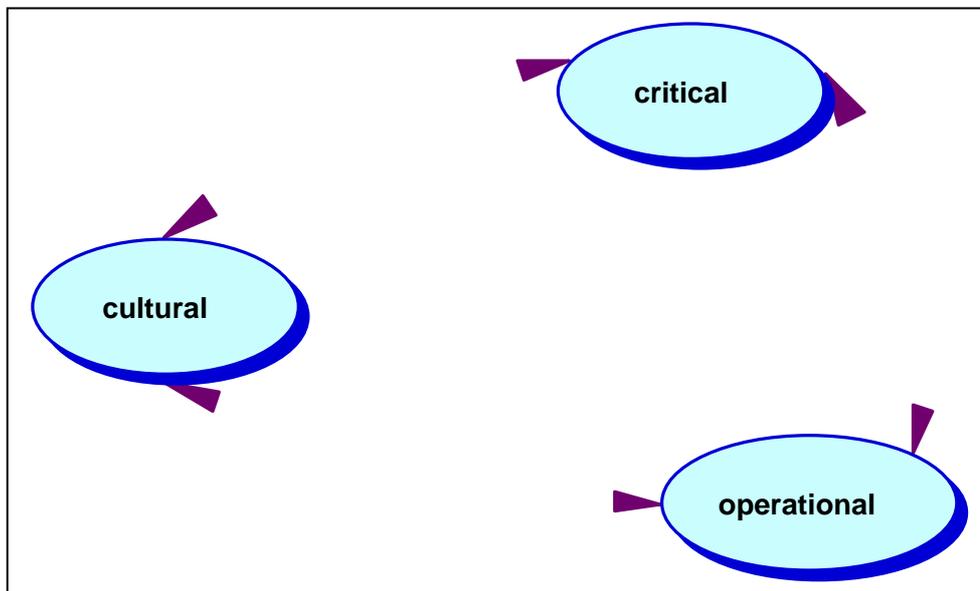
(Durrant and Green 2000, p: 97-98)

Bridging the gap: classroom pedagogy and computer games

Within English and literacy curriculum, bringing popular culture into the classroom has been one of the most successful and energising innovations of recent years. It builds bridges between students' in and out of school worlds, allows students to work with 'real' texts and texts that they are interested in, and provides opportunities for teaching, reflection and analysis in a context where many students often disenfranchised by more traditional texts can be challenged and engaged. What follows are three examples of classroom practice that utilise young people's knowledge of computer games to promote engaged and critical thinking of the kind the 3D model describes.

1.   Evaluating texts

In a unit of work examining fantasy genres and computer games (Beavis, 2000, 2001) Year 8 students were asked to prepare an online review of a computer game, provided as part of the unit, and to email it to their teacher. In this activity, students' in and out of school worlds were linked in ways that utilised both literacy and technological understandings and orientations, and drew on the three dimensions talked about here. Students were asked to play the games, locate reviews, and utilising the conventions of the game review, write their own review and submit their work on line. In doing so, they were required to present their reviews in accordance with the conventions of both technical and literary genres - all 'operational' knowledge of a kind. Students were required to incorporate headings, columns and graphics in their review aspects of the task asking for specific technological skills. At the same time, their reviews also required them to demonstrate their knowledge of the review genre and audience requirements, and their capacity to make use of generic conventions to shape their evaluations and discussion of their own game. In doing so, they also needed to demonstrate a level of fluency and control of print or verbal literacy. Cultural dimensions included the context for the task, together with students' understanding and knowledge of the game under review (and others like it), the place of computer games within young people's leisure and consumption world, and the kinds of writing and activities usually required in English.

The task also engaged students also in critical perspectives, in asking them not only to be able to use/play the games, and research and analyse the review and advertising texts surrounding them, but also to offer some critique. To undertake this review, students needed to call on both technical and literacy skills and principles, and to construct a one page electronic text they then emailed to the teacher (the researcher) for response.

MtG: Magic the Gathering, Review

Is MtG for you?

Decide for yourself.

Well in the end it all ends up to what your taste is.

If you *USED* to collect the cards of MtG then you'd probably enjoy the game to some extent but then if you have no idea on what your doing and have never played the card game before, well then it's hard to say.

It's a great game if you are into that kind of card duelling sort but otherwise it's just another one of those games that mean nothing to anybody.

Should I buy it? Why? Why not?

Well it really depends on what you like (read above section). In my opinion this is not one of those games that you are foaming at the mouth to get your hands on. Really, I wouldn't recommend getting this game considering it gets boring after the first day or 2 of playing, or possibly the first couple of hours when you can't be bothered figuring out what to do. Don't waste your money on this game, but look for future releases that are actually worth getting are in your style. But of course you can always buy this game if you got time to play and cash that you might as well flush down to the toilet to spend.

OVERALL:

Graphics: The Graphics are pretty much horrible but the card artwork is pretty good.

Gameplay: Gets boring quickly if you don't know what you're doing but once you get the hang of it's its not to bad.

Sound: Many strange sounds but all-very boring and original. Just get annoying.

Control: All mouse controlled with some keyboard functions. Fairly basic.

Rating:

76%

Am I getting what I pay for?

Should I buy the Cards, Game or expansions?

Or am I just wasting my time all together?

Well really this is just another option up to you. The game it's self isn't really all that interesting considering it repeats itself over and over and over and over again and it's no fun playing the game with yourself which you can only seem to do. I would recommend buying the card version of the game, which is much more interesting considering you can duel other people like friends or family (if they play) and you actually rely on the cards you get not ones you pull out of thin air. So if you don't have the cards, GET THEM and if you do have the cards, Stick with them and don't bother with this game.

Is the computer version different?

Well I would like it to be but unfortunately it isn't. It's more or less just sitting there facing the computer in "Duel" match's which are totally like the cards, nothing different except they've thrown in some nifty sounds which just get annoying after a period of time. You can be unstoppable as long as you give yourself everything good and your opponent nothing.

Armageddon Card.

There is also another version of the game you can play which pretty much all you do is walk around a world where there's Witch's, Evil Knights etc. Once you face them you pretty much pull out your deck of cards and try and win. You also find dungeons with other Evil things in them that you end up over coming with these super cards, mind you the art work of the cards is probably the best part of the entire game.

As a single authored, intertextual and multimodal text, the reviews bear a strong family resemblance to the kinds of print-based tasks we more frequently set and assess. Students' familiarity with the genre of the game review, together with the specifications of the task, resulted in detailed and reflective analysis. In this example, a review of the computer game version of Magic Cards, the game compares badly with the original. While the writer's experience of the forms such reviews are meant to take results in a token attempt at even handedness ('If you USED to collect the cards of MtG [Magic the Gathering] then you'd probably enjoy the game to some extent … It's a great game if you are into that kind of card duelling sort'), he has clearly little patience with the game. Critical perspectives are much in evidence in the expanded version of his initial comment:

> *"If you USED to collect the collect the cards for MtG then you'd probably enjoy the game to some extent, but then if you have no idea what you're doing and have never played the card game before, well then it's hard to say.*
> *It's a great game if you are into that card duelling sort but otherwise it's just another one of those games that mean nothing to anybody."*

Operationally, the review conforms to the models provided in computer games journals, in tone, structure and layout, as well as conforming to the specifications the teacher provided. Cultural dimensions are apparent in the students' knowledge of both versions of the game, his apparent familiarity with computer games magazines and their tone, and with his awareness of the multidimensional nature of the task as a school activity - a simulation of the 'real' genre, and the positioning of the implied reader as a potential buyer of the game, a peer in the know, and the teacher who will be evaluating the review.

2.   Making multimedia

Multimedia products undertaken by students provide a second instance of curriculum that exemplifies the 3D approach to curriculum design. Multimedia authoring is the second of Jay Lemke's vision of the technological literacy skills required in the multimodal age (Lemke 1996). 'Making' and 'doing' are also central to Kress' image of Literacy as design (Kress 1997), and have had a long and honourable role in Drama, Media and English curriculum. Creating text provides the opportunity for young people to gain greater agency, insight and control.

The Tudor Maze is one of a number of short curriculum projects made by young London students in the late 1990s using the principles of commercial curriculum games. Taking the form of an animated board game, The Tudor Maze concerns the life and times of Henry VIII, with illustrated hotspots linking to information on a range of topics complete with drawings, animation and sound. This game, made in the inner London suburb of Hackney by grade 5 and 6 students in 1998, is one of a number presented by Vivi Lachs in her book, Making Multimedia in the Classroom. (Lachs 2000). Lachs worked with students and their teachers in making multimedia production across the subject areas.

Making, as distinct from merely using multimedia in the construction of their computer game, provided students with the opportunity to think critically and practically as they learned. The software and equipment used are not particularly sophisticated or expensive, nor does the game have the glossy sheen of a commercial production. In many respects, it would be far out done by much contemporary work in schools. (The question of the relationship between high tech and expensive technology and good teaching and learning, and how we perceive the two, is in itself a separate but highly important issue.) What is exciting about *The Tudor Maze* is the cooperative learning that has produced it, its imaginative scope, its inclusiveness (the whole class has contributed) and the visuals, sound and concept of the game. It brings together culturally salient knowledge (Kress 1997) in the UK context, and students' contemporary worlds in ways that enable the young makers, and those invited to play the games, to explore and own the period they are researching. At the same time, they are also acquiring the tools and perspectives fundamental to historical inquiry, as well as technological and presentational skills.

In the process of creating a multimedia presentation for other students, the creators of *The Tudor Maze* have had to make decisions about what was most important to convey (ie key knowledge), how it would be presented (technical knowledge), what was likely to appeal to their audience, and so on. At the operational and cultural levels students are clearly learning about Tudor times, literacy, history and technology. The critical dimension includes the decisions made in the process of authoring - what 'facts' to select, on what basis and from where, what their audience need to know, what's the best way to present this and in the ways they imagine themselves into this world and position themselves in relation to social class. Lachs identifies some of the considerations students needed to face:

- what to communicate
- who the audience is
- how to plan the piece out
- what the audience have to do and how to create these interactive elements
- which medium to use for which piece of information
- how screens will link together
- what they need to research
- how to work together with others
- how to criticise their work,
- how to respond to criticism

(Lachs 2000:7)

In different ways, both the computer game review and *Tudor Maze* utilise students' knowledge and use of ICTs outside the classroom to create fine classroom practice. In both, the interaction of operational, cultural and critical dimensions allowed students to learn new 'skills' but do so in a creative and cooperative context where they are thinking critically and reflectively, working textually and within the four language modes that continue to be central in English curriculum. In doing so, these activities are also taking students further into the use and analysis of new technologies.

3. Commercial computer games as curriculum content

The energy, engagement and complexity of Multimedia products such as *Tudor Maze* draw of explicitly on students' experience of the out of school genre of computer games. Recent UK research, such as that undertaken by TEEM/Becta, explores the ways in which the features, qualities and content of commercial computer games might be used to support mainstream curriculum in schools. They have researched the use of commercially produced computer games within the framework provided by the British National Curriculum for TEAM (Teachers evaluating Educational Media) (Kerrimuir 2002). In the classrooms reported on cultural, critical and operational dimensions were configured differently than in the two examples just described, but emerge as important features of the ways the games were experienced and utilized. For teachers, operational dimensions included organising for the playing of the game, and creating a classroom context within which this could occur. Students drew on cultural dimensions both in relation to their knowledge and experience of the game and to the subject matter with which they dealt - history, economics, science etc. via such games as *Age of Empires II*, *City Trader*, *Championship Manager 00/01*. The teacher's role was crucial here in designing and managing the intersections between formal curriculum and the game, and ensuring students' focussed progress through the game. Curriculum design from the teachers' point of view thus involved all three dimensions - critical, cultural and operational, in designing and evaluating effective curriculum around games.

The research found there were many valuable aspects to be gained from designing curriculum around these games, but that there were considerable logistical difficulties and complexities too. In relation to the features of games seen to contribute value to the classroom, they noted that

- [While] games varied greatly in the degree to which use could be managed in the classroom… many of the desirable features identified by teachers could be implemented in many games with relative ease' (McFarlane, A., Sparrowhawk, A. and Heald, Y. 2002: 10);
- Games which develop the tasks within them so that there is clear progression overall are valued more highly, as are games where the level of challenge can be adapted for pupils of different ability levels' (McFarlane, A., Sparrowhawk, A. and Heald, Y. 200210);
- 'complex games are generally more challenging and therefore offer more potential in the classroom. They do, however, throw up more management issues as well' (McFarlane, A., Sparrowhawk, A. and Heald, Y. 2002: 11);
- 'The overall sense that quest and simulation games contributed to children's learning was universal across key stages (McFarlane, A., Sparrowhawk, A. and Heald, Y. 2002: 11)

There was considerable variation over the degree to which the content of the games seemed to fit directly into the formal discipline area in the curriculum. However, a generally shared view was that:

> *"across the age range that games support the development of a wide range of skills which are essential to the autonomous learner. Some of these related directly to the context of the game, which developed skills such as problem*

solving, sequencing, deductive reasoning and memorisation. Others were a result of the learning context when children work in groups on a task. These included peer tutoring, co-operation and collaboration, and co-learning. In particular the nature of discussion around the task was valued throughout. This led to the development of negotiating skills and group decision-making as well as respect for peers" (McFarlane, A., Sparrowhawk, A. and Heald, Y. 2002: 13)

The greatest obstacle to utilising commercial games in the classroom, the report concluded, was

"the mismatch between the skills and knowledge developed in games, and those recognised explicitly in the school system. Throughout the teacher evaluation reports there are comments following an often long list of highly desirable skill sets developed through playing the game, to the effect that there is no time for these games in school as they do not match curriculum requirements. It seems that the final obstacle to games use in schools is a mismatch between games content and curriculum content, and the lack of opportunity to gain recognition for skill development. This problem is present in primary schools, but is significantly more acute in secondary" (McFarlane, A., Sparrowhawk, A. and Heald, Y. 2002 16).

In its present form, then, despite the recognition of the skills and content taught by games, it is still difficult to accommodate them within school curriculum however much they are valued by teachers, students and parents. In the current context of centrally assessed curriculum, culminating in end of school examinations, it is difficult for schools to justify the time involved in what is seen as outside the mainstream. As Kerrimuir and McFarlane note
'neither teachers nor parents were happy with the notion of playing games in lesson time since such skill development did not match the criteria assessed in high stakes national testing (Kerrimuir and McFarlane 2004).

Conclusion

So, three takes on using young people's knowledge of and involvement in multimedia to build bridges between their in and out of school worlds. All three exemplify the utilisation of students' out of school experiences of commercial computer games in the development of classroom practice. All three suggest ways in which curriculum designed around games might work to develop critical perspectives and understandings together with enjoyment, imaginative collaboration and engagement and creativity. Each works with familiar territory, but reconceptualises it and relocates it in relation to computer games. In each instance, cultural, critical and operational dimensions in both literacy and technology provide a framework for pedagogy and curriculum design.

In thinking how we might work in the globalised and multimedia networked world, we need to ask broad questions about the kind of curriculum that will best serve young people, in their present and future worlds. We need to take care that, in the rush to provide students with economically desirable labour market skills and competencies, we do not shrink our sights to narrowly instructional or instrumentalist

curriculum. We need to ensure we build in the centrality of critical and imaginative dimensions, and the ability to think innovatively, flexibly, creatively and communally in the face of the unknown. We need to plan for pedagogy and curriculum that nurtures the skills and dispositions students will need to operate in a world of rapid change.

So, how might literacy and English might be redefined in a present and future saturated in ICTs within broad priorities for curriculum? In a recent forum on future directions for curriculum, Cherry Collins suggested we are heading for a curriculum which no longer seeks to provide 'a coherent map of shared understandings of reality', but rather, emphasises the project of the self, and the development of skills, self sufficiency, tolerance and functionality in a context where schools operate as 'instruments in the wider international market economy' (Collins 2002). She concludes:

> *"Those of us interested in curriculum need to evaluate what aspects of these trends need endorsing, encouraging and deepening, and what aspects need resisting and deflecting off course. We also need to imagine into being the directions in which we want any deflecting to occur: directions which teach young people more self-sustaining, more community-sustaining and more world-sustaining ways to understand reality and to live in it."* (Collins 2002: 49)

As teachers, we need constantly to bring together understandings about literacy, pedagogy and curriculum, about our subject area and what we want for our students in the world. The 3D model provides one framework for bringing together students in and out of school worlds through linking technopopular culture and curriculum in critical, relevant and engaging ways.

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