

## Episode 4: Games and Learning

**Martha:** I'm Martha Wright, and today I'm with Ben Williamson discussing how computer games can be used for learning in the classroom. We'll be looking at some of the benefits and the challenges.

How are games being used in the classroom?

**Ben:** Computer games are being used in a variety of different ways in the classroom. So one computer game like Little Big Planet for example, might be used to support creative production of ideas. So there's emerging examples of young people using games like Little Big Planet to create their own narratives and to create visualisations. Other games such as Nintendogs however are being used in a way which simply supports an existing part of the curriculum. So there are schools in Scotland particularly using Nintendogs at primary school level for work around caring for pets, the economics of looking after pets and to support young people doing their own research on dogs.

Computer games are also being used to support quite traditional content such as exploring narrative in English, so there's particularly sort of mystery games played on Nintendo DS for example that explore and exploit the way storylines branch off in different directions. So there are examples again of quite young children exploring those questions and issues of narrative in a way which is entirely in line with English teaching and with literacy instruction.

At the most obvious level the education potential of video games is shown through little games like brain training which are available on mobile devices like the Nintendo DS, so these are being used to support young children developing their mathematical abilities.

**Martha:** Derek Robertson, of Learning Teaching Scotland speaks about the reasons behind their use of games for learning.

**Derek:** In Learning Teaching Scotland and with the partners we work with throughout Scotland, we believe that games play a significant part in young people's cultural frameworks and that it's wrong for us to ignore that. That we must embrace our children - they don't come to school from a vacuum, they come to school from a cultural framework and we've got to embrace a lot of what happens outside of school in order to make life and learning in school relevant.

When I was a classroom teacher I was a primary teacher. I saw children on the last day of term at Christmas playing a Super Nintendo game and these children were in my lower ability maths group. When I saw them playing this Tetris SD game that involved the manipulation of a range of 2D shapes with different numbers of sides, different colours etc into these patterns, sequences they were incredibly and it opened my eyes as to what they could do and it made me look at the context of the games.

**Martha:** What are the benefits of using computer games in the classroom?

**Ben:** There seem to be a number of educational benefits to using computer games. For

example, computer games are often seen as sort of low risk sites for trying things out. So for conducting kind of trial and error based explorations of ideas and scenarios for example. There are certain computer games which require players to try puzzles and these can be tried again and again and again and they can be tried in different configurations and always the game is providing a certain level of feedback as to how well the player is doing.

Quite a lot of the research on computer games has suggested that the games themselves support the development of a number of key skills, so for example the skill of planning and the skills of collaboration. So the idea is that games themselves require this sophistication and planning and collaboration. And particularly the more sophisticated online games which are increasingly available to players now.

One of the other areas where it's said computer games have benefits for players is around their construction of knowledge. So for example in a game like Sims City what players are doing is interacting with a complex system of characters, of events, of concepts and so on. And it's actually through the process of playing the game that they are beginning to construct a set of knowledge about the game world. So it doesn't really matter that the game is not based entirely on the real world – it's actually about understanding how a system of parts works together.

A number of educational commentators now say that the sorts of skills that we require from learners in the 21<sup>st</sup> century are much more to do with creativity, problem solving, systematic reasoning, kind of computational ideas and so on. These sorts of concepts, these sorts of skills underpin the way in which video games work. Arguably, by playing computer games, young people are learning the sort of 21<sup>st</sup> century skills that schools want to foster in them and that increasingly are required by employers and by higher education.

It's increasingly argued that the creation of video games media allows young people to interpret and understand how it is video games work. How they work from a pure kind of computational perspective, how they work in terms of narrative and generic systems, and how they work in terms of products that are marketed to and sold to specific sorts of audiences.

As an educational community one of the things we need to be doing through our use of video games is seek to enable young people to become more critical in their consumption of video games media. To be more evaluative about the way in which the video games they're playing work, the way they impart meaning or create certain sorts of message systems which are then interpreted and understood by their audiences and players.

I think as an educational community interested in how young people are interacting with digital media, including video games, I think what we really need to begin to take more note of are the different ways in which young people consume and interpret these media. So how do young people consume and video games for example. Video games, like a novel, like a great film are actually, there are medium that communicate particular sorts of ideas and lend themselves to particular sorts of interpretations. So what is it young people are taking away from their experience of video games for example.

**Martha:** We spoke to innovative primary school teacher Dawn Hallybone about the benefits of using games in the classroom.

**Dawn:** The benefits are huge as the children are motivated straight away because it's something different, it's not 'get your textbooks out' it's something that they're using, but also for teachers it's very easy to use but also enhances and extends. It puts them, instead of using a book where they have to use their imagination for some children they need those visual clues – they need things to hang their learning on and you put a game up on the interactive whiteboard or in an immersive world and all of a sudden the children are in that world and deciding who the characters are, where they should go and who they should meet which then stimulates their writing, their talking, their conversation.

If it's an off-the-shelf game you know it's not been made for education, it sounds sort of a bit twee in a way. Educational games have their uses but the kids know they're for education and they know that's what they're learning whereas a COTS game, a consumer off-the-shelf game, it isn't meant for that so the children actually think they're playing whereas the teacher, through the planning knows they're learning.

**Martha:** What could the role of the teacher be in a lesson where computer games are involved?

**Ben:** The role of the teacher in managing the use of video games in the classroom is absolutely essential. I think sometimes there is a lazy assumption that somehow video games can just be switched on and allowed to kind of work their magic. That it seems to me is utterly nonsensical. The role of the teacher is to design a learning experience and to identify how a video game or a certain part of a video game can support that learning experience.

One of the things that teachers who are involved in using games talk about a great deal is actually respecting and recognising the kind of digital media experiences that children already have outside of school and then making use of those sorts of experiences at starting points for further exploration in the classroom and within the curriculum.

One teacher I've spoken to talks about games as a window onto children's cultures, and what he means is if as adults, as educators, as researchers, if we seek to understand how young people are interacting with and playing games outside of school, we begin to understand a lot more about their whole cultural experience in that digital media landscape.

**Martha:** What would you say the barriers or challenges are to introducing video games into the classroom?

**Ben:** One of the ongoing challenges of introducing computer games in an educational environment is the ongoing assumption about inappropriate content in video games. And I think we need to demystify people's assumptions about what video games contain because increasingly video games are aimed at a near universal audience. They're extremely well regulated and the most extreme of content is going to be 18 rated and simply won't be used in an educational environment anyway.

I think probably the main challenge we've got around the use of computer games is part of a broader set of challenges around what's known as digital or media literacy – that is the skills and the knowledge and the understanding which we have to, which we all have to develop to be able to cope in an increasingly kind of digital and mediated landscape.

Video games, like other media such as internet, such as digital TV, require a certain amount of literacy in order to be able to read them, to be able to understand and interpret them, and in turn to be able to kind of create and produce our own content and share that with other people. So one of the tasks required of the research community is to really begin to get to grips with what games and what parts of games are appropriate to specific sorts of educational contexts. Because unless we're providing as a research community the relevant support to teachers we're going to see very little movement in this debate.

I think probably one of the key challenges we do have in any work on young people and video games is to really get to grips with the way in which this is part of a consumer landscape. So video games are really heavily marketed to young people now. They take up a huge amount of young people's leisure time and I think we really as a research community and as an education community need to start to understand better what sorts of effects that's having on young people. Research on young people and digital media increasingly shows that actually young people are often quite sophisticated and discerning users and audiences of media. However there's been really very little hard analysis of the way in which young people interact with this highly kind of consumer oriented environment. It may well be that what the education community and schools in particular are going to have to respond to over the next few years is, are, are, learners entering the schools whose experience of using computer games and other similar sorts of media lends them particular sorts of expectations. It lends them the expectation that everything needs to be fast, that actually they need to receive immediate feedback on every kind of interaction they have on a screen.

I mean in terms of the practicalities of using video games in the classroom environment there's been a lot of talk about how games are too expensive, about how licensing means you can only have one single copy running on one single machine. But increasingly the kind of teachers who are doing interesting work in this area are simply downloading freely available demos they're not using entire 100 hours worth of game play because that's simply inappropriate to their aims, to the kind of learning experiences which as teachers you are expected to orchestrate. So practically just use freely available demos or use games that are available on the web, or identify specific points of specific titles that can be used within the constraints of the classroom itself.

**Martha:** Dawn and Derek also reflected on the challenges and barriers to using games in an educational setting, and how these barriers can be overcome.

**Dawn:** It's getting over negative, maybe parents, governors and the wider world that say games are awful, that games turn them into socially inapt obese gang killing violent children from using games which is what the media present. So it's definitely getting over that challenge and it's also making sure that it's the quality teaching, the game is just a tool, it's the teaching and the planning that goes into it that makes the use of games such a success.

**Derek:** I think the challenge is for the teachers and for schools to use them appropriately. Because when young people, let's say, we've used Dr Kawashima's Brain training we did research that was published recently showing impact on mental maths ability and that's fantastic that that happened, it's probably our most successful one to date.

We use games as contextual hubs which allow the teacher to create a collaborative story around the learning as a result of playing the game, so be it Nintendogs, Professor Leyton or Guitar Hero or Endless Ocean or Wild Earth African Safari or Little Big Planet, the teacher is behind the scenes. The teacher is integral to this. Children learn when they play games and we know that, but the challenge for learners is how can we help them, how can we develop mental cognition in young people so that they can see how they're learning, see how they're progressing, that's where the teacher comes in.

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