

PUTTING PACMAN IN THE CLASSROOM

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ABSTRACT

Computer games are now more widely available than ever. They are not just limited to computers and consoles but are invading our daily lives and our classrooms. Almost every day they are mentioned in the media, sometimes good, sometimes bad, and most Hollywood blockbusters now have an accompanying game. How much longer can we ignore them? There is a massive opportunity to grab our pupils' attention and engage with them in a new way.

WHAT ARE GAMES AND WHY ARE THEY IMPORTANT?

Computer games are a powerful form of media. Whereas film is a passive experience, games allow interactivity, requiring the viewer to control the on-screen characters' choices and destinies. Although some games are quite linear, like watching a movie, where the events are in a predetermined sequence, increasingly modern games allow much more choice. Sandbox games, such as 'Grand Theft Auto' or 'World of Warcraft', have almost limitless worlds which the player can explore and choose which tasks to carry out in the order they wish. In some games, such as 'The Sims', 'The Movies' or 'Black And White' they are given carte blanche to also invent the plot and create the story they would like to see.

They have become part of the contemporary psyche – a yellow circle with a portion missing is immediately identifiable as Pacman; the name Mario evokes the image of a short Italian plumber with a heavy black moustache and red dungarees; Lara Croft has become a symbol for the exaggerated female form.

Games are being used increasingly in new forms. Although they have always been a mode of entertainment, their scope is growing in this field: they are no longer restricted to violent shooters or 'cutesy' platformers, but a massive range of games are now available for players young and old. Increasingly games are being made for education and many can be found online, such as on the BBC Bitesize website. Advertising has also seen an opportunity to use games to draw in more interest in their products, such as www.rubberduckzilla.com to advertise Oasis, linking in with a wider advertising campaign. Even charities have seen their potential, such as Free Rice (www.freerice.com) where the player answers questions and this equates to rice donated to the UN food programme.

There are many reasons why games can be an advantageous experience to players, including:

- exercising the brain and keep it active
- encouraging problem solving and choice-making
- building confidence of carrying out challenging tasks through a difficulty curve
- improving dexterity (e.g. console controllers, keyboards) and whole body co-ordination (e.g. Wii remotes, Wii Fit board)
- improving multitasking
- helping children learn pattern recognition
- allowing practice for the real world and can encourage real world activities (e.g. 'Skate' – skateboarding, 'Guitar Hero' – playing the guitar, flight simulators for trainee pilots)
- having fun without real consequences whilst demonstrating that choices have consequences for characters (e.g. character may be hurt, chased by police, etc.)

HOW CAN GAMES BE USED IN EDUCATION?

Teaching young people to create games or using them as part of their learning can be a very rewarding experience, both for pupil and teacher. Having that extra tool in a teacher's toolbox allows more variety in the classroom and another method of communicating the message endeavouring to be conveyed. Using games in any format allows pupils to explore creativity and encourages learning to be fun where they will not realise they are learning. Taking advantage of something with which they are already familiar and excited about can only be a positive initiative.

OFF-THE-SHELF GAMES

Off-the-shelf games are pre-made games and could be used on consoles or computers and played as part of their learning within certain parts of the curriculum. There are many available on the internet, small Flash games such as www.prongo.com/games, www.nobelprize.org/educational_games or www.bbc.co.uk/schools. Also www.orisinal.com has casual games which have beautiful graphics, are well-made and interesting.

On the other hand, consoles such as Xbox or Wii could be used in subject areas such as:

- In History, the 'Call of Duty' series is excellent for showing pupils a realistic experience of war
- Media and English teachers may find it interesting to explore the translation of films and television shows into games such as 'Pirates of the Caribbean', 'Lost' and 'Indiana Jones'; and conversely a computer game into a movie such as 'Dead or Alive'
- Physical Education can be made richer by introducing 'Wii Sports', 'Mario and Sonic at the Olympics' or 'Wii Fit', allowing another dimension to sports and perhaps a way of encouraging those who are not keen on the subject
- Games such as 'Lips' and 'Guitar Hero' could be an excellent addition in Music
- Increasingly games are using more realistic locations and could be interesting for a study in Geography, such as 'Test Drive Unlimited' which is an accurate recreation of the whole of the Hawaiian island of Oahu.
- ICT could encourage the playing of 'Typer Shark' (on PC) in pupils' free time which improves typing skills in a really fun underwater environment

Primary teachers could also take advantage of the wide range of games made for younger children for more general skill building such as:

- 'Viva Piñata' or 'Animal Crossing' which can encourage them to take ownership of a garden or village and ensure they look after it so it continues to grow
- 'Professor Layton and the Curious Village' or 'The Secret of Monkey Island' where they must solve puzzles and problems to progress through the game
- 'Wii Family Trainer' which is a really fun way to exercise through short mini games

There is a wealth of games available and new ones are constantly being released, providing a wide range from which teachers can choose. An excellent book which may provide more ideas is 'Playing To Learn: Videogames in the Classroom' by David Hutchinson.

BREAKING THE BARRIERS TO USING OFF-THE-SHELF GAMES

Even if a teacher does not play games themselves, they can still use them in their classes. The only game that needs to have been played beforehand is the one that is to be used in the actual class, just to make sure it is appropriate and that the teacher is familiar with the menu system, controls, etc. (which is also detailed in the game manual). Once one game has been used, the pupils could be asked to suggest other suitable games and they will likely be a treasure trove of information and suggestions.

Lessons where games are played are not difficult to manage. A useful tip is to mark off the equipment area with masking tape on the floor, which immediately creates a 'no go' area and keeps pupils away from trailing cables. Usually pupils will be grateful for having games in class and they will obey the rules, as if they do not, the games may be taken away.

Game consoles are very easy to set up. Generally they have three cables – power, projector/TV and controller(s) and each one will be shaped to only fit in the socket for which it is intended. The equipment can be set up in just a couple of minutes. Also make use of your school's technical support as generally they will be very encouraging in your use of consoles in the classroom.

Finally, this is **not** an expensive venture. The latest, up-to-date equipment does not need to be used, in fact, older equipment can be more reliable, easier to set up and will have a larger catalogue of games than newer systems. An original Xbox can be purchased for about £20 (second-hand, as they are no longer manufactured) and bargains can be found to purchase the games, such as four for £20. This is not a large outlay for equipment which can be used in a range of classes and for several years. In addition, look for free games online which can be played on computers as there is a huge variety available with just a little searching.

BESPOKE GAMES

Alternatively bespoke games could be used, where the teacher makes them for their pupils or the pupils themselves make the games. They can be created so they are specific to any subject, and can make an approach to 'boring' or difficult topics easier and more accessible. The games can be tailored towards specific pupils, perhaps gifted and talented or those needing more encouragement, SEN or EAL. The names of the actual pupils could be used in the games as characters.

If pupils make their own games, it can further their understanding of a topic by review key learning and working it into a game. They could be given a wide brief, then play each others' games where they may re-examine issues on different parts of the topic. Making games can encourage a huge amount of creativity and it is probable that the pupils will surprise with unique, interesting ideas. In addition working in pairs or groups can encourage team work, communication and other skills which are important to be developed.

BREAKING THE BARRIERS TO USING BESPOKE GAMES

Creating games may seem like a daunting task, requiring a large expenditure and specialist training. However, there are now several programmes available which are designed to be easy-to-use and get results quickly. With a small investment of time, it is certainly possible for adults and children with no previous experience to get to grips with the software.

In addition, most of this software is free to be downloaded from the internet and installed. Examples of this software include:

- **Scratch** (www.scratch.mit.edu) – made by MIT, it is designed for ages 8 and upwards and available on both PC and Mac. It provides snippets of programming code ('scripts') in jigsaw shapes so they can be fitted together. A range of 'sprites' (characters and objects) and backgrounds are available in the software and also images can be created and imported as sprites or backgrounds. Also the Scratch website has a vast amount of games made by adults and children which can all be downloaded and opened in Scratch so the scripts and sprites can be seen.
- **Adrift** (www.adrift.org.uk) – will make interactive fiction games. These are computer versions of 'choose-your-own-adventure' books (e.g. 'You reach a fork in the road. To take the left path, turn to page 87. To take the right path, turn to page 105'). Although pupils at first may be thrown by these games not having any graphics, they will soon realise it is their imaginations where the action happens and it permits them to be as creative as they can be with the way the games appear to them. These are fantastic games for improving reading and writing skills. For those new to interactive fiction, excellent short examples of the genre include 'Lost Pig' and '9:05'.
- **Hot Potatoes** (www.hotpot.uvic.ca) – created by Half-Baked Software Inc at the University of Victoria. Although this is usually to be purchased, on 1st September 2009 Hot Potatoes 6 is to be released for free. This software provides an easy way to create quizzes, gap-fills, crosswords, jumbled sentences, matching exercises, etc.
- Other good resources for crosswords and word searches are:
www.puzzle-maker.com/CW and www.teach-nology.com/web_tools/word_search
- **PowerPoint** – is a programme that is available on most computers in schools. Using hyperlinks and a bit of creativity, it is possible to make simple games. Quizzes are straightforward, although pupils will be able to create much more exciting games using their boundless imagination.
- **Second Life** – started its existence as an online game and has become an almost infinite virtual world where a society has become established. Within it are many educational areas such as The Edulands, Foul Whisperings (about Macbeth), Genome Island (devoted to science), International SpaceFlight Museum.

Also consider using board games, which are identical to computer games except without the use of technology. They still have an objective, characters, rules, winning, losing, narrative, environment, challenge and other elements of any game. They can develop skills of communication, strategy and team work. A possible method in the classroom could be to set up four games on four different tables and the pupils are divided into four groups, with a 'buddy' in each group. Each group plays a game for an allotted time, then they move to the next game and take up the game from where their buddy's piece has been left. Interesting board games include 'Game of Life: Twists And Turns' (brilliant for simulating real life and citizenship lessons), 'Cluedo: Discover The Secrets' (an interesting twist on a classic), 'Cranium', 'Dingbats', 'Risk' and 'Chess'. An interesting class activity is asking the pupils, in small groups, to plan and create their own board games; then playing each others' and discussing the merits and downfalls of their games.

CONCLUSION

Games are an unavoidable part of society and pupils' lives and if teachers take the opportunity to bring something into the classroom in which they are already interested, it gives another means by which to engage and educate. Learning happens easily when the learner is having fun, and teaching is more enjoyable when the teacher is having fun.

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Risk, Hasbro
Chess, available from several manufacturers

Karen Anderson is Head of ICT at Queen Margaret's School, an independent girls' school in York. Previous to this she taught in state schools, most recently in a sixth form college in West Yorkshire where she successfully introduced a Games Design course into the curriculum. She is a passionate campaigner for games in education, both as a teaching resource and a career aspiration for pupils. She has co-written several educational textbooks and is involved in writing specifications for exam boards. Currently she is on the team writing the ICT GCSE for Edexcel for teaching in 2010.