Using computer games for public health goals

I read a number of books after I had written my original chapter on computer games in 'Sex 'n' Drugs 'n' Rock 'n' Health' [1]. As a result I felt intrigued enough to want to add some notes on them to my website of the same name. Here I've summarised some of their main arguments and explore how public health could respond to them.

'Don't Bother Me Mom – I'm Learning!' by Marc Prensky [2]

Prensky's book is aimed at parents and is a very easy read.

Young people today act differently because of new technology

Prensky claims that digital technology encourages the younger generation to

- Communicate differently e.g. instant messaging rather than letter or even email
- Share differently e.g. sharing feelings in a blog rather than hiding them in a paper diary
- Exchange differently e.g. sharing music that reflects their personality online (illegally, but they tend to see things online as free of ownership)
- Create differently e.g. games players who produce additional software and share it on the web for free
- Meet differently e.g. as well as face to face, now via various technological channels
- Co-ordinate differently i.e. on the net, for example working together in large numbers in online worlds and as part as multi-player games
- Evaluate differently e.g. using online 'reputation systems' such as the scores buyers and sellers have on eBay
- Learn about things that interest them differently i.e. online rather than in books
- Report differently e.g. texting friends immediately even before a film is over to say it is no good
- Play games differently e.g. online multi-player games are now more popular than playing alone. These can involve over a million people [3]

Public health and other agencies need to monitor these trends to see if they are true and the implications for engaging with younger target groups

Games are complex simulations of life

Prensky's book however is mainly about the impact commercial computer games have on young people. He distinguishes between two sorts of games. One is the mini-games that have very simple rules and aims e.g. shoot the aliens. The other is complex games such as simulations around running a city or building a civilization from scratch [4]. Although he believes that mini-games can be used for educational purposes, it is the more complex games he thinks offer the greatest potential. These are interactive and as they are online can involve thousands or even millions of players. They may take over 100 hours to master.

Young people today learn differently because of games

Prensky thinks young people brought up on games, in his words the 'Digital Natives' learn differently from the previous generation, the 'Digital Immigrants'[5]. He argues that this is not simply to do with the content or intention of the game.

Rather the nature of gaming itself, as it has developed, encourages certain traits in young people. He sees this as mainly positive, and in any rate as something that society has to accept and deal with.

Prensky believes modern commercial games encourage the younger generation to have better problem solving skills. This is because games are interactive and rely on the player to work out how to progress. He argues that there are five levels of learning that modern games encourage [6]. These are:

- 'How' learning e.g. how a game works or, depending on the focus of a game, how to use objects within it, such as surgical tools etc. (This level of learning could tie in with the facts or skills based aspect of the three legged stool model of health education [7] The skills focused on maybe quite practical)
- 'What' learning e.g. what are the rules of the game and the consequences of particular actions? (Again it also focuses on the skills aspect of the three legged stool model of health education. However, at this level the skills may be intellectual. The focus is on learning to remember to consider the consequences of your actions and decide on the rules of life. The advantage of course is that in games however no one really gets hurt)
- 'Why' learning: This is about strategy, the best way to act within a game to meet your goals. Players need to consider things such as
    - Cause and effect
    - Long term versus short term gain
    - Order from chaos
    - Second-order consequences
    - Counter-intuitive results
    - The rewards of persistence

  (In health education terms this also ties in with learning more complex thinking skills. These need not only be around personal behaviour but could also simulate the impact of alternative government policy around drugs etc. In complex games it is not possible to do well without working with others. This level of learning therefore promotes the value and practicalities of co-operating)
- 'Where' learning: This is about context, i.e. in this game or this world if you do something the reaction may be different than doing it somewhere else. In other words, it is about culture and relativity. It also raises questions about what worlds, characters and rules you prefer. (This ties in with the attitudes and values based aspect of the three legged stool model of health education)
- 'Whether' learning: This is about ethics. Do I want to act in one way or another? What are the consequences for my self and others of doing so? (This could also tie in with the attitudes and values based aspect of the three legged stool model)

Of course if the content is relevant, gamers can obviously gain in terms of health education at any of these five levels. However even if they are not the skills learnt may be transferable to health situations.

Prensky believes that there is a side effect to the complexity of modern games. He believes that many young people will not respond well to traditional schooling. After games they find it unchallenging and thus boring [8]. Educators therefore

need to develop a curriculum that makes extensive use of educational games. These need to be of the same standard as commercial ones. As this generation of young people grow up, work places and training will also need to adapt.

Create a system for young people to produce educational games

Prensky warns against producing educational games that are as simple as mini-games or appear too educational [9]. Part of the trick is to produce games that are programmed to respond to players' own abilities. This way they always engage them by never being too hard or easy. He is aware however of the cost of producing good educational games. Elsewhere he suggests setting up an online network where the curriculum for particular topics is laid out. People can then share the games they have created to tie in with specific bits of this. These games could be created by students themselves. The curriculum site would allow people to see what gaps needed filling. Users could also give feedback to help to improve games or to encourage creation of new ones [10]. It may also be that these games should in future be playable on handheld devices or mobiles as well as PCs and laptops [11].

Prensky also talks about modding [12]. This is a way of modifying an already existing game to use it for a different purpose, which could include health education. This can be done totally legal and companies sometimes release the code to enable people to do this.

The role of teachers (and emotions) in a games based curriculum

Prensky believes that the role of the teacher in the future could be more emotional than technical. It would concentrate on helping young people develop and learn rather than the traditional focus on imparting knowledge [13]. I, personally, hope that teachers will build on the intellectual understanding that games can give by integrating the skills of therapy into their work. Understanding emotions is not just for 'kids with problems'.

For a long time I have believed that the split between education and therapy is an artificial one. It is all about learning. Professor Maio from Cardiff University, for example, has found that feelings are one of the four psychological barriers that stop the fight against obesity. This is because '…people often possess feelings that they are unable to retrieve from their memories, or are unwilling to admit to others. For example, even though people may consciously endorse exercise, they may non-consciously associate it with pain, difficulty and exertion. Laboratory experiments have shown these automatic feelings are more accurate at predicting people's behaviour than their conscious attitudes…'[14].

It may further be useful to think of the *emotion* e.g. fear, as the glue that holds the *message* part of attitudes or beliefs in part. The message part could be something like exercise is difficult and people will laugh at me. Similarly socialisation around gender, race, class etc. is also held in place by feeling as much as rational thought.

Game simulations may be a good way of exploring intellectually the impact of beliefs and feelings. However, I think that face to face methods would be more successful in then exploring how these beliefs and feelings affect us personally.

One approach would be to make more use of psychodrama type techniques [15]. Another would be to develop co-counselling techniques in schools [16]. Both could be a natural development from the circle time approach used in primaries [17]. It would though require a huge culture shift amongst teachers, parents and society generally for this to happen. However a gradual evolution may be possible. Indeed co-counselling in many ways fits in well with the mindset of digital natives. It is a peer based approach, as people take it in terms to be the counsellor and the client. The individual is in control of their own process rather than being told what to do. It is about sharing. The organisation that underpins it is a network rather than a hierarchy. It engages people by letting them find out themselves about their emotions. The culture that surrounds it is fun.

Further reading
Marc Prensky has his own websites at www.marcprensky.com/ and www.twitchspeed.com

Persuasive Games by Ian Bogost

Bogost has written a very different book in 'Persuasive Games' [18]. This is an academic tome. Bogost raises many interesting practical and ethical questions about how to use games for non-entertainment purposes. He looks at games used in education, advertising and political campaigning. All of these offer examples relevant to public health. Below I have summarised some of his arguments and related them to public health themes

Computer games for manipulation, persuasion, demonstration and debate

- Bogost believes that advertisers haven't used games particularly well. Too often he argues they have simply placed brand names or slogans on games that have nothing or little to do with the actual product or service being offered [19]. Many health promotion games are like this, simply using arcade type games with diseases as the 'baddies' to zap. Bogost argues that games can do much more than this if thought is given to their purpose
- Computer games can be used to attempt to
    - Manipulate
    - Persuade
    - Encourage debate

  Reading Bogost's book made me clearer about the need to answer key questions before commissioning any health game e.g.
  What are the aims of the project? What does the research evidence suggested is needed to change health behaviour? Is knowledge, skills, debate, challenging of attitudes or reassurance the key issue? Which is likely to be effective? Which is ethical?

Health games in educational or training settings

- People may be obliged to play games in educational or training settings, unlike other games produced for NHS websites etc. Ideally however, they should still engage them and offer an appropriate educational simulation.
- Bogost also critiques two different philosophies of education, the behavioural and the constructionist. Mark Prensky belongs to the latter and Bogost discusses the limitations in both models [20]

- Educational games can be programmed to push one coherent set of values or to get players to consider alternatives [21]. In some sense a single set of values is fine if the game is about teaching skills or consciously showing how a particular view of the world operates.
- However, the values programmed into the games are often taken for granted, e.g. in *The Sims*, a commercial game sometimes used in education, players do well by being materialistic [22, 23]. Compare this with another commercial game, *Animal Crossing*, where two opposing philosophies are embedded within the same game, one more materialistic and the other more communal [24, 25]

Health games on service websites

- Advertising can be about simply demonstrating the positives of a product or action [26]. In public health terms, a computer game could demonstrate all the benefits of a young people's clinic e.g. condoms, emergency contraception, pregnancy testing etc. Alternatively advertising may be more about 'feeling' e.g. linking a particular alcoholic drink with a particular lifestyle. In public health terms games could be uses as a way to appear on the same wave length as young people
- Games could be used more on already existing health sites. If the social market research was done first it might be possible to create a game to match people's concern. For example, a young person could play the part of a worker in a sexual health clinic to show how a contraceptive clinic operates. This could put them at their ease about the practical issues involved e.g. whether anyone can see them once they are inside. It could also reassure them about how the worker treats young people. Bogost talks about a Japanese game about a popular chain of restaurants that models a similar procedure [27, 28]
- Social market research may show, of course, that it is knowledge or skills that people need on a particular issue rather than reassurance round values

Health games as part of public involvement in policy decisions

- In terms of public participation it may be that a game could be used to help people decide on what policy option to support. For example, on whether to support closing a hospital. The *Take Back Illinois* game begins to show how this might be done [29, 30]. For some people it may be more effective than simple verbal arguments and could be placed along side a page where people could vote or write comments. If the issue was locally controversial it might attract a lot of attention, particularly if different biases could be consciously built into it by players to see what results came out of it. As an example, if you spend £X million on this option, Y improves but Z suffers

Health games to reach the 'hard to reach'

- It may also be possible to produce games that are interesting enough in their own right that people will email them to each other to play. These will either have to be highly relevant to the people involved or great fun. Relevance will be defined by the gamer. For example, a game might appeal to the 'forbidden fruits' aspect of adolescence e.g. on taboo subjects such as sex, drugs or alcohol and seem to exclude other people

such as parents
- Britvic commissioned a game called *J20 Toilet Training* about a drunk at a urinal to get their message across [31, 32]. Would any public health body be prepared to put their name to something similar?

Further reading

Ian Bogost is involved in a number of sites including www.persuasivegames.com/

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