



Young people, online gaming and addiction

Introduction

The number of children and young people who access and use online technology (so called 'screenagers') has increased greatly over the last two decades. Children and young people spend a significant proportion of their daily time in front of various screen interfaces, most notably video games, mobile phones (for example, texting friends) and the internet (for example, on social networking sites like Bebo and Facebook).¹ Technology is becoming increasingly convergent (for example, internet access via mobile phones) and there is an increasing amount of multi-media integration. Furthermore, technology is changing the way in which society views social and asocial activities. Although many young people's interactions with technology appear asocial (for example, a young person sitting alone engaging in some kind of screen-based activity), many of the activities carried out by 'screenagers' are social activities which involve playing and/or chatting to others during an online video game, chatting via Twitter or other social networking sites.² Research also suggests that young people now spend more of their time indoors engaged in sedentary activities at the expense of taking part in outdoor physical activities.³ In the UK, this has led to government-commissioned social policy reviews on child internet safety, including the playing of video games,⁴ and sedentary behaviour, screen time and obesity.⁵

One activity that has developed and changed considerably over the last five years is playing video games. Not only is there increased diversity in the types of games and hardware that are available, but gamers can also now play online, and with (or against) other people. Surveys suggest that most children and young people play video games, and that around a quarter to a third play video games every day.⁶ It has also been reported that boys are more likely to be regular players.⁶ However, there have been no nationally representative surveys in the UK. Despite the somewhat negative media attention given to video games (particularly in relation to video game violence and addiction), children and young people have become more digitally literate and there are many benefits that young people can gain from playing them. These benefits can be educational,⁷ social⁸ and/or therapeutic.⁹ However, there is a small body of empirical evidence that shows that when played in excess, video game playing can, in some cases, be addictive.¹⁰

For many, the concept of video game addiction seems far-fetched, particularly if their concepts and definitions of addiction involve the use of drugs. Despite the predominance of drug-based definitions of addiction, there

is now a growing movement that views a number of behaviours as potentially addictive, including many that do not involve the ingestion of a psychoactive drug (for example, gambling, computer game playing, exercise, sex and internet use).¹¹ Such diversity has led to new, all-encompassing definitions of what constitutes addictive behaviour. The notion that 'video game addiction' is a genuine addiction has started to gain some credence in the medical community. In June 2007, the American Medical Association recommended that the American Psychiatric Association reconsider its position with respect to video game addiction in the upcoming fifth revision of *Diagnostic and Statistical Manual (DSM-V)* in 2012.¹²

Although there have been dozens of studies in the last two decades which have examined the prevalence of video game addiction among young people, almost all of these have used self-selected and/or small localised samples. Furthermore, the screening instruments used to diagnose video game addiction have (in the main) not been psychometrically tested for reliability and validity. Therefore, it has been almost impossible to determine the prevalence of video game addiction among young people. To date, only one large representative national study of 'video game dependence' has been carried out. A German nationwide survey¹³ of 13- to 14-year-old children reported that 3 per cent of the boys and 0.3 per cent of the girls taking part were dependent on video games. The study also reported that video game dependence was accompanied by increased levels of psychological and social stress in the form of lower school achievement, increased truancy, reduced sleep time, limited leisure activities and increased thoughts of committing suicide.

In relation to video game violence, there is some empirical literature which suggests that playing violent video games makes children more aggressive.¹⁴ There are many criticisms of the methodologies used¹⁴ and almost all of the research has examined offline (rather than online) gaming. The remainder of this *Highlight* concentrates on excessive playing of massively multiplayer online role-playing games (MMORPGs) and therefore excludes gaming via social networking sites (for example, Farmville on Facebook) that feature different structures and dynamics.

Online gaming addiction

Online gaming, where players participate online and play with and/or against other players in MMORPGs such as *World of Warcraft*, have become very popular over the last

few years. This has led to claims that online gaming may be more problematic and/or addictive than offline (stand-alone) video games.¹⁵ All addictions – whether chemical or behavioural – are essentially about constant rewards and reinforcement.¹¹ Griffiths has operationally defined addictive behaviour as any behaviour that features the core components of addiction (i.e. salience, mood modification, tolerance, withdrawal, conflict and relapse).¹¹ It has been argued that any behaviour that fulfils these six criteria can be operationally defined as an addiction. In the case of video game addiction this would be:

- *Salience* occurs when online gaming becomes the most important activity in the person's life and dominates their thinking (preoccupations and cognitive distortions), feelings (cravings) and behaviour (deterioration of socialised behaviour). For instance, even if the person is not actually gaming online, they will be thinking about the next time that they will be.
- *Mood modification* refers to the subjective experiences that people report as a consequence of engaging in online gaming and can be seen as a coping strategy (i.e. they experience an arousing 'buzz' or a 'high' or paradoxically tranquillising feelings of 'escape' or 'numbing').
- *Tolerance* is the process whereby an increasing amount of time spent on online gaming is required to achieve the former mood modifying effects. This means that someone engaged in online gaming gradually builds up the amount of the time they spend online engaged in the behaviour.
- *Withdrawal symptoms* are the unpleasant feeling states and/or physical effects that occur when online gaming is discontinued or suddenly reduced (for example, the shakes, increased moodiness and irritability).
- *Conflicts* that take place between the online gamer and those around them (interpersonal conflict), conflicts with other activities (job, schoolwork, social life, hobbies and interests) or from within the individual themselves (intra-psychic conflict and/or subjective feelings of loss of control) which are concerned with spending too much time engaged in online gaming.
- *Relapse* is the tendency for repeated reversions to earlier patterns of online gaming to recur and for even the most extreme patterns typical of the height of excessive online gaming to be quickly restored after periods of abstinence or control.

Online gaming addiction is partly explained by the partial reinforcement effect (PRE).¹⁰ This is a critical psychological ingredient of gaming addiction whereby the reinforcement is intermittent (i.e. people keep responding in the absence of reinforcement hoping that another reward is just around the corner). Knowledge about the PRE gives a game designer an edge in designing appealing games. Magnitude of reinforcement (for example, a high points score for doing something in-game) is also important. Large rewards lead to fast response and greater resistance to extinction – in short, to increased addiction.¹⁰ Instant reinforcement is also satisfying.

Online gaming involves multiple reinforcements in that different features might be differently rewarding to different people. This leads video game designers to incorporate a wide range of gaming rewards in the hope that at least some of them will appeal to players. In video games more generally, the rewards might be intrinsic (for example, gamers improving their highest score, beating their friend's high score, getting their name on the 'hall of fame', mastering the game) or extrinsic (for example, peer admiration).¹⁰ In online gaming, there is no end to the game and there is the potential for young people to play endlessly with and/or against other real people. This can be immensely rewarding and psychologically engrossing. For a small minority of people, this may lead to an addiction whereby online gaming becomes the single most important thing in that person's life, and where they may compromise and neglect everything else in their life. Currently there is little research indicating how the addiction establishes itself and what people are actually addicted to.¹⁰

Although online gaming is potentially addictive, the number of people who are truly addicted appears to be small.⁹ An increasing number of empirical studies have claimed that online gaming addiction in adolescence exists and that it is exacerbated by the fact that online games never end and have the potential to be a 24/7 activity.^{16,17,18} However, there is evidence that being engaged in excessive online gaming does not necessarily mean someone is addicted.¹⁹

As with all addictions, there is a potential for long-term damage. However, very few young people appear to have developed such problems, although there is research to suggest that in extreme cases, online gamers can experience all the core signs and symptoms of more traditional addictions such as withdrawal symptoms, conflict with other activities, mood modifying effects and relapse.²⁰ The main difference between healthy enthusiasms and addictions is that healthy enthusiasms add to life, while addictions take away from it.¹¹ The vast majority of excessive gamers (including young people) are likely to claim that their gaming behaviour has positive effects for them. Although there are many people who play excessively without this having any negative impact on their life, many players do experience some signs of addiction without necessarily being addicted.¹⁸

It has been argued that online gaming increases the likelihood of a more sedentary lifestyle that in turn increases other associated health risks such as obesity.²¹ Somewhat paradoxically, gaming is becoming increasingly mobile because of wireless-based technologies. New interactive technologies (for example, Nintendo's Wii console with Wii Sports, Wii Fit, Just Dance, and games such as Rock Band or Guitar Hero) are more activity-based and have the potential to reverse the sedentary nature of interactive technology via 'exergaming'.²² However, a recent review of the empirical evidence advised caution on extolling the benefits of 'exergaming' and asserted that active gaming was no substitute for exercise.²²

Online gaming benefits

There is evidence that suggests that online gaming can have positive effects on players' lives. It can make people feel better about themselves and help to raise their self-esteem²³ (although most of this research has been done with older adolescent and adult players). The immersive and dissociative experience of gaming can also be very therapeutic and help players deal with everyday stresses and strains. Research has shown that many gamers love the fact that playing games leads to time loss.²³ Time loss has traditionally been pathologised by those who are anti-gaming but players view time loss as something that is positively reinforcing.²³ It might be argued that playing online games – even to excessive levels – is a more positive experience for young people than taking illicit drugs, drinking alcohol or engaging in other activities such as gambling. For example, simulated environments allow players to experiment with parts of their personality that would be difficult for them to do offline, for example, gender swapping.²⁴ Research has shown that around a third of online gamers make good friends in the game, something that is again viewed by gamers as a positive.⁸

Practical advice for practitioners and parents

Based on the research evidence outlined above, this section contains some practical advice for practitioners and parents in relation to video gaming among children and young people.²⁵

- Check the content of the gaming activity. Encourage children and young people to play games that are educational rather than violent. Parents usually have control over what their child watches on television – gaming should not be any different.
- Encourage children to play video games as part of a group rather than as a solitary activity. Many online games are based on social activity and working together. Research consistently shows that the main reason for playing online games is for its social element.^{8,26,27,28}
- Help children and young people to set time limits on their playing time. Research has shown that those children and young people who play video games for a couple of hours a day are more likely than those who do not play video games at all to have a wider circle of friends, engage in physical activities and do their homework.²⁹
- Follow the recommendations by the game's manufacturers and/or the service providers (for example, children should sit at least two feet from the screen, play games in a well-lit room, never have the screen at maximum brightness, and never engage in gaming when feeling tired).
- Finally, if all else fails, temporarily prohibit gaming and then reintroduce playing on a part-time basis when appropriate.

There are a number of online resources that offer practical help and advice.³⁰

Conclusion

In over two decades of research examining both the possible dangers and the potential benefits of video game playing, empirical evidence suggests that in the right context playing video games (online or offline) can have positive health and educational benefits for a large range of players, including those with special needs.⁹ Recent reviews show that online gaming can be used in an educationally beneficial context such as teaching topics like history and economics.³¹ Video games, both online and offline, have the potential to be used as training aids in classrooms and therapeutic settings, and to provide skills in psychomotor coordination, and in simulations of real life events (for example, dancing, playing a musical instrument or driving).

Countries such as China have introduced laws to limit the amount of time that young people and adults can spend playing online games. In other countries, such as Holland and South Korea, dedicated treatment clinics for gaming addiction have been opened (although the clientele comprises mainly older adolescents and young adults).¹⁵ Whether such activity needs to be legislated for is arguable. As mentioned above, one of the main reasons why online gaming may be more problematic than 'stand-alone' (offline) gaming is that online games are potentially never ending and can be played all day, every day (unlike 'stand-alone' games which can be paused and returned to some time later). In some cases, the internet may be providing a potentially ever-present and convenient medium for those with a predisposition for excessive and/or addictive game playing tendencies.

To date, the empirical evidence appears to indicate that for the vast majority of young people, online gaming is an enjoyable and harmless activity. It is possible that future empirical research may show increasing online gaming addiction and/or will show cultural differences (suggesting the need for different policies in different countries). Real life problems need applied solutions and alternatives, and until there is an established body of literature on the psychological, sociological and physiological effects of online gaming and online gaming addiction, directions for education, prevention, intervention, treatment and legislative policy will remain limited in scope. Evidently, more research is needed to help and inform educators and other stakeholders to give practical help to those who need it, and for policy-makers to make evidence-based policy decisions.

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September 2010

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