'A child engaging in any activity to excess every day over a number of years will have its development affected for the worse in some way.'

Dr Mark Griffiths has made a special study of addictive behaviour in young people.

Mark Griffiths

Computer games: Harmless or addictive?

The emergence of video and computer games is a fairly recent social phenomenon, and playing them is a popular activity among schoolchildren. A recent study examining 387 adolescents aged 12 to 16, conducted by Nigel Hunt and myself (1), found that all but five of the young people had played computer games, that almost a third of them played every day, and that 7% of them were playing for at least 30 hours a week.

Computer-game playing appears to begin at an early age (7–8 being about the average), and for most children is a fairly harmless activity which takes up little time in their lives and is played purely for fun and enjoyment. However, there does appear to be a small minority of children who play computer games to excess and who could be called 'addicts'. The above statistic, suggesting that some young people may be playing for at least 30 hours a week, indicates that anyone interested in their healthy social and educational development should be concerned.

'Participants were so engaged that they did not want to go to the toilet.'

A growing concern

There are many reports in both the educational and psychological literature that highlight the positive applied aspects of computer games, and show that in the right context they can be of great educational and therapeutic value. However, there is growing worry amongst many experts in different disciplines that computer games may be potentially addictive.

Throughout the 1980s, anecdotal accounts of pathological video-game playing began to occur, in addition to journalistic accounts of 'keyboard junkies'. According to some researchers (myself included) computer-game addiction is like any other behavioural addiction and consists of compulsive behavioural involvement, a lack of interest in other activities, association mainly with other addicts, and physical and mental symptoms when attempting to stop the behaviour (for example, the 'shakes').

What is 'addiction'?

The way of determining whether computer games are addictive in a non-metaphorical sense is to compare the symptoms with clinical criteria for other *bona fide* addictions such as alcohol dependence syndrome, heroin addiction, pathological gambling, and so on. However, with no operational definitions or diagnostic criteria for computer-game addiction, there is no basis for comparison. I therefore carried out a study in which excessive computer-game playing was examined using criteria equivalent to those employed when researching other addictions: in this case an eight-item addiction checklist adapted from my previous work on fruit machine addiction (Table 1).

Using these criteria we classified almost one in five youngsters as being 'addicted', in other words fulfilling four or more of the eight criteria in the checklist. This alarming figure may be a reflection of the definition of 'addiction' that we employed, but this does not mean that there is no cause for concern, as there are many other instances in the literature of the adverse effects of playing computer games.

Criterion	*Addiction dimension*
Frequently play most days	Salience
Frequently play for longer periods of time	Tolerance
Play for excitement or a 'buzz'	Euphoria
Become restless if you cannot play	Withdrawal
Play to beat personal high score	'Chasing'
Make repeated efforts to cut down or stop playing	Relapse
Play instead of attending to school-related activities	Conflict
Give up other social activities to play	Conflict

Table 1. Criteria used in the Computer Addiction Scale.

Signs of dependency

These effects have been reported for over a decade, and have included wrist, neck, and elbow pain, tenosynovitis (also called 'nintendinitis'), peripheral neuropathy, enuresis, encoprisis, and epileptic seizures. Admittedly some of these adverse effects are quite rare, and were cured once the young people stopped playing the games in question. In the cases involving enuresis and encoprisis, the participants were so engaged that they did not want to go to the toilet, and did not realise that they could simply use the game's 'pause' button.

The adverse consequences outlined above do not necessarily imply addiction, but some of them may be indicative of excessive playing. However, reports have identified further signs of computer-game dependency, all of which we also identified in our study. These included:

- Stealing money to buy new games cartridges.
- Using lunch money to play.
- Playing truant from school.
- Not doing homework/getting bad marks.
- Sacrificing social activities.
- Increased self-reported levels of aggression.

It does not, of course, follow that all these are solely due to playing computer games — it may, for example, be one of many factors linked with poor academic performance — but we did discover that the younger they were when they started playing, the more likely they were to have problems. This finding — if replicated by other research — has major intervention implications.

There is no doubt that for a minority of children and adolescents, computer games can take up considerable time and that to all intents and purposes they are 'addicted' to them. Just think of the 7% of schoolchildren in our study who claimed to spend at least 30 hours a week playing computer games. Whether the games are inherently 'good' or 'bad' is not the most pertinent point here: the question we should be asking ourselves is what the long-term effect of any activity that takes up 30 hours of leisure time a week has on the educational and social development of children and adolescents. At present we do not know the answer to such a question, but I would hazard a guess that a child engaging in any activity to excess every day over a number of years will have its development affected for the worse in some way.

Table 2. Nine classes of computer game.

1. **Sports simulations.** Self-explanatory. The games simulate sports such as golf, ice hockey, athletics, etc. (e.g. *Hole in One, Super Tennis*).
2. **Racers.** Could be considered a kind of sport simulation in that they simulate motor sports like Formula 1 racing (e.g. *F1 Race, Top Gear*).
3. **Adventures.** Use fantasy settings in which the player can escape to other worlds and take on a new identity (e.g. *Addams Family, Zelda 3*).
4. **Puzzlers.** Self-explanatory. These games are 'brainteasers' which often require active thinking (e.g. *Tetris, Daedalian Opus*).
5. **Weird games.** Not 'weird' as such except that they do not fit into any other category. They would be better named 'miscellaneous' (e.g. *Sim City, Pilotwings*).
6. **Platformers.** Involve running and jumping along and on to platforms (e.g. *Super Mario Brothers, Super Mario Land*).
7. **Platform blasters.** These games are platformers, but also involve blasting everything that comes into sight (e.g. *Robocop, Batman*).
8. **Beat 'em ups.** Involve physical violence such as punching or kicking (e.g. *Street Fighter, Rival Turf*).
9. **Shoot 'em ups.** Involve shooting and killing, using various weapons (e.g. *Interstellar Assault, UN Squadron*).

Are there benefits?

Another factor to take into account is that among the nine types of computer game listed in Table 2, the great majority appear to give little or no direct benefit to the individual playing them. Only two of the categories (*puzzlers* and *weird games*) contain games with an educational component. It is possible that some of these games could be used in schools to foster learning and to overcome some of the negative stereotypes which many people have about computer games.

Treatment strategies

At present I know of only two reported cases of treating video games addicts, both of whom underwent professional therapy (2, 3). My own

advice for parents and interested parties is the common-sense approach to self-control that has been applied to the treatment of other habits.

- Instead of starting with 'cold turkey', try negotiating how much time the child can spend on computer games, and make sure that the bargain is kept.
- Foster friendships, and try to organise other enjoyable activities to carry out with the child.
- Rewards for not playing can also work.

Even when these strategies do not seem to have any effect, it may be reassuring to remember that most children move on quite naturally from what may look like an addiction set for life.

For those who wish to curtail children's playing rather than prevent it altogether, there is now an electronic device called *TV Space Allowance*, which can block out the television at certain times (like homework periods, or late at night). The television is activated by a code, and once the pre-set allotted time has run out, it is switched off. However, it may be relatively expensive for many familes at around £85, and it cannot be used for hand-held computer game consoles.

'Treatment strategies for computer-game addiction are in their infancy.'

Towards an understanding

As can be seen from this brief outline, treatment strategies for computer-game addiction are in their infancy. However, many people in addition to myself have noticed the similarity between the psychological and behavioural consequences of excessive video-game playing and those of pathological gambling, particularly addiction to fruit machines. If video-game playing is similar, then treatment of those that are dependent upon it may be helped if therapists adapt treatment approaches from the already-established literature on pathological gambling.

In conclusion, it must be recognised that computer games can be addictive for some schoolchildren; but considerably more input will be needed from both the clinical and educational perspectives if we are to reach a useful understanding of the issues involved.

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References

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