GAMES AND LEARNING

Policy Recommendations Report

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Contents

1. Aim of this report

This Games and Learning policy recommendations report is intended to provide guidance for policy makers on the use of computer games for learning. It is a concise summary of the main debates around games and learning. It is not intended to produce a programme of research or to provide definitive evidence on which policy should act. Instead, it identifies significant ambiguities or evidential absences that should be considered in any serious attempts to understand the role of computer games in children's learning, and recommends potential activities to address these absences. It should be noted that the report does not seek either to endorse the educational application of games or to dismiss them as harmful media forms. It suggests that a sensitive, balanced and evaluative approach should be taken to more fully explore, collect evidence, and provide guidance on a diversity of potential games applications in education.

2. Summary of key arguments

Debates about the role of computer games in children's social lives and especially in their education tend to be bipolar. For some commentators, computer games are so rich, complex and sophisticated that by playing them at home children are receiving a more challenging educational experience than they are provided by schools. For others, however, computer games are characteristic of a consumer society in which young people are being constantly targeted and manipulated by major commercial producers. The reality, no doubt, is not as clear-cut as these oppositions suggest. Prominent positions adopted in the existing research on computer games and children's learning include the following:

Computer games are 'good for the brain'
Computer games are unique amongst media because they force players to make constant decisions, choices and priorities, including the weighing of evidence and analysis of situations. This means games directly engage and potentially enhance the brain's decision-making apparatus[i].

Computer games prepare young people to be successful
Because of the ways in which children's cognitive capacities are being enhanced by playing computer games, they are growing up better equipped for success in a high-tech economy where the skills of multitasking, data analysis and decision-making will be increasingly important. Furthermore, the benefits of playing games will eventually lead to major shifts in commercial routines as the habits of games players become embedded in businesses and economic activity[ii].

Computer games support learning through problem-solving and the social construction of new ideas
Computer games are ideal platforms for trying out ideas, making decisions, and of deriving new understandings from authentic practices and activities completed in social contexts. According to this view, the most powerful kind of learning is social and constructive rather than individual and passive. For that reason, trying out ideas alongside others while playing computer games is better suited to learning than many activities completed in classrooms[iii].

Computer games are persuasive
Computer games are powerful media which have the capacity to influence and affect the ways in which people see and perceive the world around them. This means that marketing companies are able to use games to convince consumers to purchase products and the military to use games to support recruitment; it also means that games have the potential to make powerful social arguments and to educate people about contemporary issues and topics[iv].

Computer games can be designed for 'serious' purposes
The term 'serious games' denotes titles that are designed for purposes other than entertainment, for example, simulations of surgical procedures for healthcare professional trainees or military simulations for recruits in the armed forces. Examples of serious games support learning about medical emergencies, conflict in the Middle East, and learning about diseases[v].

Using computer games can enhance media literacy
The use of computer games in educational settings can involve interrogating how media companies offer particular interpretations of the world, how games are constructed, designed and structured, about the production of games and the organisations involved in doing so, and about how audiences are targeted and receive games. This implies educators using computer games in the classroom to support children to better understand the ways that media are produced and the ways they themselves experience and respond to media[vi].

Computer games privilege specific cultural assumptions
Computer games have tended to privilege themes and representations of fighting, combat, competition and conquest, as well as male aggressiveness and female sexuality; this has the potential to reproduce and reinforce existing cultural assumptions and stereotypes that are elsewhere disputed and which are at odds with the values and ethics associated with schooling[vii].

Computer games are a manipulative cultural form
As products of a multinational corporate industry, computer games are designed and marketed in such a way as to manipulate and exploit the interests and ambitions of children. In addition, the persuasiveness and attractiveness of games demonstrates to children that the corporate world is best suited to meeting their interests: it suggests that the consumerist values associated with games are the values that children too should hold[viii].

Computer games compete with school
The slickness of computer games produces a corporate curriculum of pleasures and challenges that are more sophisticated than the technologies of presentation that schools can provide. As a result, children are more and more likely to regard schools as in deficit to the high production values, immersiveness and sophistication of games[ix].

3. Recommendations

The following recommendations have been developed as suggestions for focused practical developments and evidence collection activities necessary to fully explore and support better intelligence about the use of games to support educational goals.

Policy, industry and educators' debate

There is a need for a detailed debate between the games industry, the educational research and practice communities, and policy. This debate should take the form of a half-day roundtable involving senior level representatives from the games industry and associations, ministerial presence and senior policy makers, experienced educators, and senior researchers in the field of games and learning. This debate should address some or all of the points raised below, and should also consider a practical routemap for developing strategy and policy around games and learning.

Clarity of definitions and evidence

Although many arguments are made about the benefits of gaming for children's learning, there remains significant ambiguity about the evidential base for these claims and a lack of clarity about the definitions of learning and gaming that are being used - for example, 'gaming' is sometimes confused with 'gambling'. There is also a need for greater clarity about the potential educational uses of games. For example, games may be educational when used at home if players are strategically managing complex simulations, such as in a football management game. Games may also be educational when used in the classroom as the focus for detailed and critical analysis, such as in an English or media studies lesson where games may be 'read' and 'studied' like other media texts. Evidence is also required of the educational uses of different games platforms. For example, there is emerging practice using the Nintendo DS, PlayStation Portable and Nintendo Wii in schools[x]. Persuasive arguments have also been made about how players learn from cooperation with one another in online worlds. However, these environments may be inappropriate in classroom settings, where mobile devices might have more logistical eligibility[xi]. Clarity about these differences and the evidenced potential of each will support teaching professionals to identify the practical, curricular and pedagogical opportunities for games use in specific educational contexts and using specific platforms.

Support for teachers

Technology access is obviously a barrier to teachers using games to support formal educational goals. In addition, teachers may be unfamiliar with the games potentially available to them, and lack training or support in their classroom use. The provision of teacher professional development support materials, supplemented with the evidence and definitions identified above, will enable teachers to explore practical game use. It should be recommended for pilot work to be carried out in initial teacher education as well as through continuing professional development provision with staff. Such a pilot programme would identify practical strategies for a scalable and sustainable training initiative for teachers.

E-safety

The question of children's risk-taking behaviour and safety while playing computer games should be addressed through dedicated research on children's and their parents' perceptions of games and risk. This should be balanced with evidence of what children and their parents perceive to be the beneficial aspects of playing computer games. Evidence-informed guidance for parents about children's television-viewing habits, for example, was provided by Tanya Byron in autumn 2008[xii]. Futurelab and Becta will be undertaking research into how families play computer games together in 2009[xiii] - including their perceptions of risk and safety - which will begin identifying areas in which further research on risk and safety may be required.

Commercial and market pressures

In keeping with the DCSF-commissioned assessment of market influences on children being conducted by Professor David Buckingham[xiv], it is important to identify the extent to which children are affected or influenced by the commercial interests of the games industry. It has been suggested, for example, that computer games 'colonise' children's "attention, time, desires, ambitions and fantasies"[xv]. In other words, the content and playing of games may be influencing the ways in which children perceive themselves, think, act and behave.

One consequence of this may be to align children's thinking and behaviours more closely with the values of the commercial world and consumer behaviour. Focused research on children's understandings of commercialism and consumerism in relation to computer games should be commissioned in order to produce guidance for educators and parents. This will provide a practical response to the DCSF assessment.

Media literacy

Media literacy is intended to support children's critical and creative participation in the interpretation and creation of media of all types. It is supported by Ofcom in the UK and is also prominent in European policy documentation. A summary discussion of media literacy in the UK and European context is supplied by Sonia Livingstone, who states that evidence is required to address such concerns and opportunities as protection against harm, take up for communication rights, enhancement of active citizenship, and creative and cultural expression[xvi]. As regards computer games, children should be supported to develop their media literacy when it comes to accessing, understanding and participating in the creation of games media. This includes understanding how and why games are produced, by whom, and how they are marketed, distributed to and received by audiences. There remains a need for detailed evidence of how media literacy is being developed in schools, as well as initiatives and publicity to ensure that greater media literacy awareness is developed across the education system. The collation and analysis of such evidence should inform the development of guidance and documentation for teaching professionals, enabling them to identify the importance of focusing on media literacy within existing school subjects.

Playing games, social context and motivation

The Byron Review identified a lack of evidence and understanding about the contexts in which children play computer games. Moreover, the evidence about children's motivations for playing games remains ambiguous.

Research by Nielsen for the Interactive Software Federation of Europe (ISFE) has reported that amongst active players of computer games, 72% do so mainly for fun, 42% think it keeps you fit mentally, while 33% do so to learn about new things[xvii]. Analytical research should be funded to interrogate and interpret the contexts in which children play computer games and their motivations for doing so. This research should contribute to enhanced public awareness of the diversity of computer games play.

Dedicated games and learning centre

Consider investigating the feasibility of establishing a national centre for games and learning, possibly modelled on the Consolarium in Scotland[xiii]. Such a centre, with an experienced, enthusiastic but critical staff, should be dedicated to exploring many aspects of the use of games in educational contexts. The centre would provide an intermediary between the games industry and educational settings, negotiating with the games industry to provide schools with access to the relevant technologies and with schools to develop appropriate and beneficial activities. It would provide a 'knowledge sharing' facility for teachers to access accounts and case studies of others' experiences, advice on platforms, evidence from research studies, and support and training for teachers.

Incentivise games industry participation in education

The games industry should be incentivised to appreciate its powerful and influential role in children's lives and its potential impact on the formal education system. One existing example is GamesAid, an established charity which seeks to generate funding from within the games industry for educational and children's welfare initiatives[xix]. The games industry, for obvious reasons, does not have education as its core interest; incentives should be sought which can demonstrate the value of supporting and investing in the exploration of using computer games in different aspects of learning.

4. Notes on method

This report is based on preliminary desk research conducted by Futurelab. A survey of the literature on games and learning was conducted in August and September 2008. This survey identified existing literature reviews and drew from these the key points of argument, sources of evidence, and analytical absences. It also identified key recent books and articles and summarised the key germane arguments. In October 2008 Futurelab ran a roundtable debate involving expert informants from the games industry, from academia, from government departments, and from educational practice. Roundtable participants discussed many of the points of argument emerging from the literature and discussed many of the arguments and recommendations made in this document.

Notes and references

i   Barham, N (2004) Disconnected: Why your kids are turning their backs on everything we thought we knew (London: Ebury Press); Johnson, S (2005) Everything Bad is Good for You (London: Penguin); Prensky, M (2006) "Don't Bother Me Mom - I'm Learning!" How computer and video games are preparing your kids for 21st century success - and how you can help! (St Paul, Minnesota: Paragon).

ii   Veen, W and Vrakking, B (2006) Homo Zappiens: Growing up in the digital age (London: Network Continuum Education); Beck, JC and Wade, M (2003) Got Game: How the gamer generation is reshaping business forever (Cambridge, MA: Harvard Business Press).

iii Papert, S and Idit, H (1991) Constructionism (Ablex Publishing); Gee, JP (2003) What Video Games have to Teach Us About Learning and Literacy (Houndmills: Palgrave MacMillan); Shaffer, DW (2006) How Computer Games Help Children Learn (Houndmills: Palgrave MacMillan).

iv   Bogost, I (2007) Persuasive Games: The expressive power of videogames (Cambridge, MA: MIT Press); Dovey, J and Kennedy, HW (2006) Game Cultures: Computer games as new media (Maidenhead: Open University Press).

v   Derryberry, A (2006) Serious Games (Adobe White Paper); Chen, S and Michael, D (2005) Serious Games: Games that educate, train and inform (Course Technology Inc).

vi   Buckingham, D (2003) Media Education: Literacy, learning and contemporary culture (Cambridge: Polity); Burn, A and Durran, J (2007) Media Literacy in Schools: Practice, production and progression (London: Paul Chapman).

vii Kline, S, Witheford-Dyer, N and de Peuter, G (2003) Digital Play: The interaction of technology, culture and marketing (London: McGill-Queen's University Press).

viii Barber, B (2007) Consumed: How markets corrupt children, infantilize adults, and swallow citizens whole (London: WW Norton).

ix   Kenway, J and Bullen, E (2001) Consuming Children: Education-entertainment-advertising (Maidenhead: Open University Press).

x   Details about the use of the Nintendo DS in schools can be found at: www.ltscotland.org.uk/ictineducation/gamesbasedlearning/sharingpractice/index.asp.

     For details on the use of PSPs in schools see: www.connectededucation.com/index.php?option=com_content&view=article&id=45&Itemid=42.

     For planned educational developments with the Nintendo Wii see: www.beyondtext.ac.uk/projects/playgroundgames.shtml.

xi   For a detailed discussion of online worlds, see Taylor, TL (2006) Play Between Worlds: Exploring online game culture (London: MIT Press). For a detailed discussion and case study examples of the educational use of mobile devices, see Klopfer, E (2008) Augmented Learning: Research and design of mobile educational games (London: MIT Press).

xii Byron, T (2008) Children and Television Today (FreeView), available online: www.freeview.co.uk/freeview/Features/The-Viewtrition-Report.

xiii Research by Nielsen for ISFE has identified 36% of active European games players as parents of children aged up to 16 years. Of these, 81% play computer games with their children. This indicates that playing games as a family is extremely popular, and runs counter to the stereotype of games players being young adolescent males. See Nielsen (2008) Video Gamers in Europe (ISFE), available online: www.isfe.eu/index.php?oidit=T001:662b16536388a7260921599321365911.

xiv For details see: www.dcsf.gov.uk/consultations/conResults.cfm?consultationId=1548.

xv Kline, S, Witheford-Dyer, N and de Peuter, G (2003) Digital Play: The interaction of technology, culture and marketing (London: McGill-Queen's University Press).

xvi Livingstone, S (2008) Media literacy: Why is it on the policy agenda now? Three:D, 11, September 2008: 5-6.

xvii Nielsen (2008): see note 13.

xviii For details see: ltsblogs.org.uk/consolarium/ and www.ltscotland.org.uk/ictineducation/gamesbasedlearning.

xix See: www.gamesaid.org/index.php.

About Futurelab

Futurelab is passionate about transforming the way people learn. Tapping into the huge potential offered by digital and other technologies, we are developing innovative learning resources and practices that support new approaches to education for the 21st century.

Working in partnership with industry, policy and practice, Futurelab:

— incubates new ideas, taking them from the lab to the classroom

— offers hard evidence and practical advice to support the design and use of innovative learning tools

— communicates the latest thinking and practice in educational ICT

— provides the space for experimentation and the exchange of ideas between the creative, technology and education sectors.

A not-for-profit organisation, Futurelab is committed to sharing the lessons learnt from our research and development in order to inform positive change to educational policy and practice.