Patterns of Internet Use by Students in English Schools

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Abstract

This paper examines the use of the internet by a sample of 40,000 students from a group of demographically different schools in England. In analysing this usage a number of questions are asked about patterns of learning and lessons to be learned. Previous research and recent writings on this topic are examined and a theoretical framework is formed that eclectically draws on a number of sources, including postmodern authors. A methodology is used incorporating an analysis of system logs. It was found that learning using the internet often appears as being self-motivated with a strong sense of ownership both of content creation and social networking. It is often generated by a real purposeful need by the children themselves often with the assistance of their peers. Schools should be places where literacy in new media can be developed. The sample of schools in which usage was surveyed in the research represents a broad set of demographic profiles across England. Although the sample was restricted English children, responses from other countries may have shown a different set of responses.

Keywords:
ICT, Internet, Postmodern, Education

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Introduction

The children who participated in this research are ahead of the technology itself in some ways, demanding a higher level of performance and efficiency than it is often able to deliver. Issues such as speed, filtering (especially at school), viruses, spam, spy and other malware are seen as an irritation. Restrictions that are placed upon them at school, whether through web filtering, timetabling, access or other issues, are however tolerated and children are phlegmatic about their schools’ provision of internet services. By contrast they usually find their access at home more enjoyable, beneficial and helpful to their school-related, recreational, private and social lives.

According to their own report, it seems that children regard themselves as having a well-developed, sound and perceptive sense of the accuracy and veracity of the information that they commonly access from the internet. They are likely to use the design, web address and general ‘feel’ of a website to assess its potential and likely accuracy. They use their personal experiences when evaluating the accuracy of information obtained from a specific website, and will often self-filter websites that they have discovered in the past to be unreliable, inaccurate or misleading. This is especially true of wikis. Children often evaluate a website by quickly assessing the amount or type of advertising or pop-ups encountered. Websites that include excessive advertising or inappropriate (e.g. gambling) advertising are often avoided by children as they self-censor websites they encounter. This is true of both home and school usage, although the school will usually filter out inappropriate websites before they reach the students’ desktop. Children often indicated that they use effective methods of triangulation or verification when obtaining information of doubtful authenticity. Methods of verification include comparing data extracted from a number of websites, seeking information from an adult or peer or referring to books for confirmation of information.

Unsurprisingly, children used search engines more frequently at school than any other category of website. This was stated by them in their surveys and during interviews and was also validated by logs recording their usage. For recreation, in their out-of-school environments they liked playing games, browsing and downloading music and videos.
For social communication, across both genders they preferred using instant messaging and social networks as their mode of social communication. Most children reported using the internet extensively for helping with homework and revision, with a preference for using the internet in private areas out-of-school such as bedrooms or other private living and recreation areas.

Both online and offline literacy practices were seen to be strongly related to internet use, with children who reported spending significant amounts of time reading books and magazines also reporting moderately high internet use. The internet was certainly seen by children as forming an important part of their social and educational activities with words such as “accuracy” and “learning” occurring frequently during the interview group discussions. The internet is clearly valued as a dependable source of information and as a means of social communication.

As has been noted in the presentation of findings, some gender differences in internet usage were observed in the survey. Girls generally indicated that they were more likely to use social software such as instant messaging or social networking sites than boys, whereas boys were more likely to use internet games for recreation than girls. Girls’ usage of social networking generally focused around keeping in touch with existing friends rather than making new ones. Children of both genders reported not only downloading music and videos as favoured activities but also the creation and publishing of music and videos as popular pastimes. They also described how they enjoyed constructing artefacts on the internet such as web pages, virtual postcards and other internet-hosted construction activities. Whilst acknowledging the possible gender stereotyping that these conclusions may imply, girls’ higher use of social networking and boys’ higher usage of games may be seen as being consistent with both genders’ offline interests. This is also supported by the apparent greater likelihood of boys undertaking more risky online behaviour than girls, such as visiting chatrooms.

Unsurprisingly, children generally perceived themselves as having a greater degree of freedom in internet usage out-of-school than in-school. Those children who felt they had the greatest amount of freedom also reported the highest levels of confidence in internet usage. Relatively moderate usage (up to two hours per day) of the internet seemed to be mostly appropriate, being focused on a range of recreational, social and educational activities. Relatively low levels (less than one half-hour per
day) of internet use were often associated with low levels of reading generally, whereas relatively high levels (more than two hours per day) of internet use was often also associated with low levels of reading. Usage at the high end was often also associated with unfocused, random use of the internet such as browsing. Those children who reported structured home supervision and the application of some usage rules also reported a balance of recreational, social and educational usage at both home and school.

Notwithstanding children’s observations as noted above on the accuracy of information obtained from the internet, there was also a fascination with its fallibility. Children were interested in encountering information that was apocryphal, misleading or just plain wrong and believed they were efficient and adept at uncovering such websites, although they were unlikely to revisit them for research purposes. Children also found the potential of the internet to distract interesting, depending on the context of what they found and were often intellectually engaged by stimulating diversions.

Many of the above observations are supported by postmodern theories. Butler (2002) and Sellinger (2004) have described the internet as being a postmodern phenomenon. Their separate pieces of research have picked out three key postmodern descriptors of the internet, namely its non- hierarchised nature, its virtuality and its mutability. These three descriptors can be related to much of the children’s use of the internet as described in this paper. Its non-hierarchised form relates to and appeals to children in the way in which they can create, share and seek information and communicate using internet-based technologies. The virtuality of the internet places sources of information, recreational spaces and their network of friends in an easily accessible and synchronous environment created by them wherever they have an internet-enabled device, but especially out-of-school.

These ideas are also consistent with theories expressed by other researchers. Hernwell has described the internet as being a function rather than an object and describes it in virtual terms (Hernwell, 2005). Gee (2004) expresses similar ideas, placing experience ahead of information and seeing the internet in terms of process rather than product. Again, children’s process-oriented usage of the internet is consistent with ideas such as these. At an early stage in the popular use of the internet, Nune
was also writing in similar terms (Nune, 1995), realising quickly that the internet had no frontiers and as such was not bounded in the same way as other systems of communication or methods of storing and retrieving information. These descriptions closely match, in spirit anyway, the ways in which children spoke, sometimes naively but often perceptively about the internet.

The children’s use of and perspectives on the internet are also supported by the ideas of Granic and Lamey (2000) who have spoken about postmodernism in terms of perspectivism, multiplicity and decentralisation and by relating these three concepts to both the internet itself and to learning on the internet. Children’s discussion of the internet and the various viewpoints and relativism that pervades both the content and the spirit of the internet is consistent with Granic and Lamey’s, and although children did not exactly describe the internet in those precise terms, the perspectivism can be related to the points of view that children expressed and encountered on the internet, the multiplicity related to the variety of people and information sources with which they interacted, and the decentralisation related to the hyperlinked, shared and democratic nature of their online communication and research. This is also coherent with Chapman’s description of the internet and postmodernism in terms of the multiplicity of competing and subjective narratives (Chapman, 2005). These competing narratives can also be seen in terms of how (in)formal learning itself is seen. Sefton-Green (2004) describes informal learning as being no longer seen in terms of being merely casual, disorganised and accidental but as being an integral part of the same learning process that occurs in more formal settings. This certainly appears to be validated by the comments by children on the way in which they used the internet informally for educational, social and recreational reasons.

Children discussed their use of the internet in very human and interactive terms, in turn revealing many of their values with respect to honesty, respect and other ethical issues. The revelation of these values and beliefs are consistent with the theories of Butler (2002) who has written about how technology reveals the outcome of our human values. However, and the children in the study have indicated this, the use of the internet is not a utopian state of being. There are challenges, idiosyncrasies, frustrations and blind alleys, all of which can on the one hand reduce the effectiveness of the internet for research and
communication but on the other hand can help raise the social and intellectual capital gained through working through these issues. Zembylas and Vrasidas (2004) have spoken of the pedagogy of discomfort with respect to online learning and this can be translated to the postmodern context of children’s use of internet where there are unprecedented freedoms, but also challenges, new rules and new responsibilities for parents, teachers and those who care for children in both in-school and out-of-school contexts.

Patterns of Usage

There appears to be some common patterns between students’ responses to the online survey, their discussions during the interviews and the logs on internet usage. The logs show that search engines are by far the most common category of website accessed by students at school. This is supported by the results of the survey where 72% of children use the internet for obtaining information. It is worth noting that the logs indicate that there is often little use of the schools’ websites and the use that is recorded often relates to those schools that set their website as the default homepage upon logging in, with students quickly navigating away. The survey indicates that only 24% of students use the schools’ websites, which raises the issue of the purpose and role of the school website. Is it purely for marketing? Could it be used more effectively for children’s learning? Should it more effectively incorporate learning platforms, blogs, e-portfolios or other more interactive elements? These are issues that schools may be prompted to consider.

The interviews yielded a large number of children’s comments on the accuracy of content on the internet, especially with respect to their learning. The interviews included much discussion about online games, and this is also supported by the survey which reported 81% of students using the internet for games. There appeared to be little variance between what children say they did and what the logs reported as actual usage.

I believe that the methodology chosen for obtaining and analysing the data in this paper has worked effectively. Both the survey and the interviews produced rich data that assisted my understanding of the area being researched. My positionality as a keen advocate of the internet and as a senior member of my organisation placed me in a privileged position.
to interpret the data made available through the methodology. At the top level of questioning, the main research question was: How do year children use the internet both in-school and out-of-school? This was broken down into four subsidiary questions.

In retrospect, the main question has been a little less about the children’s actual behaviour and more about their perceptions about how they use the internet, their beliefs and the way they report these perceptions and beliefs. With respect to the question How is out-of-school internet behaviour of year 7 students similar to in-school internet behaviour? a number of conclusions can be drawn from the data and analysis in the preceding sections. Children were critical of the accuracy of information on the internet, especially with respect to their learning. This was drawn out of experiences with a number of websites that were cited as examples. They did, however, demonstrate good ways of checking and validating information, and felt the internet was a valuable resource. This was consistent with both in-school and out-of-school access.

Children complained about the things that got in the way of their internet use. This included their experiences with viruses, spyware and pop-ups at home, yet they also complained about the restrictions placed on them by firewalls and filtering at school. This shows their impatience with the technology and their need for immediacy and reliability of access. Children disliked things that got in the way of them using the internet when and where they liked. I believe this needs a curriculum response, educating children about skilful practices on the internet and explaining the reasons and the technologies involved for firewalls and filtering. However, generally children demonstrated a good awareness of internet safety issues. Schools could further encourage and nurture safe practices whilst providing adequate safeguards such as filtering and caching facilities. A good safety policy and code of practice is important.

With respect to the question How does out-of-school internet behaviour of year 7 students differ from in-school behaviour? and its corollary If the behaviour of year 7 students differs, is this important?, there are a number of observations to be made and conclusions to be drawn. There often appears to be a different relationship between the children and their informal learning and that which occurs in a formal educational setting. Schools should look at ways of making the formal educational experience more related to and built upon that which the children bring from home. In order to do this a
deeper understanding must be developed of what children do and how they interact with others online. Bringing the home and school practice together is important. This is more relevant than trying to emulate home practice at school. New kinds of learning are taking place involving, amongst other things, online exploration, collaboration and networking and this should be embraced and contextualised by schools to allow young people the opportunity to practice, enhance and apply their skills in a transferable way both in-school and out-of-school.

Children mainly used the internet at home in private or other designated areas, whereas at school, usage was more public and exposed. However, children believed that teachers were less likely to know what they were doing on the internet at school than parents were to know what they were doing on the internet at home. Videos and games were favourite activities for children at home, whereas search engines were favourites at school. Children unsurprisingly preferred using the internet at home, mainly due to the privacy and freedom afforded to them. Those who spent the most time on the internet at school also tended to spend the most time on the internet at home.

The use of the internet by young people differs in informal, formal and non-formal settings. However, there are perpetual and changing overlaps between these settings, and the contexts will be largely determined by the learners themselves. In this sense, although we might aspire to a framework for learning with the internet, it is a framework that itself is in perpetual beta form. Children develop self-organised learning practices (or contexts) using the tools which are sometimes taught in schools and sometimes learnt informally. It is apparent that children bring informal learning to school. Schools should use this, but not necessarily appropriate it. This has also been commented upon recently by other researchers (Green and Hannon, 2007). Schools should also however, look at ways of developing context-based models for learning, and seek to understand ways in which informal and formal learning can be realigned. Children should also be encouraged in the school setting to be creators of content as well being articulate and discerning consumers. This is consistent with trends observed in the 2007 Ofcom report on the communications market where the most notable impact of the internet in recent years was seen to be the conversion of consumers into content producers (Ofcom, 2007, p. 97). It is also consistent with recent research.
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into the CBBC online game ‘Adventure Rock’. In 2008, Gauntlett and Jackson conducted a case study on ‘Adventure Rock’, a virtual world for children aged 8-11 (Gauntlett and Jackson, 2008). This free, downloadable program from CBBC provides creative studios where children can draw pictures, animate cartoons, choreograph dance, compose music and construct machines. CBBC has taken up the challenge of providing safe and appropriate social networking and interactive games for children in this age group. At the time of writing, Adventure Rock is the latest in a series of virtual worlds, created specifically for children in the past two years. Others include Club Penguin, Nicktropolis, Moshi Monsters and My Tiny Planets. Gaunlet and Jackson describe eight types of players in these virtual worlds: explore-investigator, self-stampers, social climbers, fighters, collector-consumers, power users, life-system builders and nurturers, all engaged in a series of online activities ranging from solitary to sociable. Gauntlett and Jackson found a number of benefits to be apparent in children’s usage of Adventure Rock including the creation of mental maps, rehearsal of responsibility and self-expression. Research such as this is important in informing the future appropriation of in-school and out-of-school online experiences for children.

Schools need to listen to children and their use of the internet, and develop strategies to bring together the richness that both informal and formal learning can provide. Schools also need to provide the opportunity for children to practice the skills that they bring from informal learning and enable them to use those skills in a range of contexts and settings. In doing this, schools should not attempt to mimic out-of-school use, but concentrate on enabling responsible and effective use of IP-based technologies by students. The development of a set of ethical, safe and critical approaches to the internet is crucial. However, it also apparent that children already have some good critical skills in finding and analysing information, and that they are good at verifying and validating information found on the internet. On the social aspect of the internet, there is a need to further develop safe practices with respect to social networking, blogging, e-portfolios and other online activities.

Given children’s frequent interest and participation in internet games, there is further scope to explore the educational possibilities available through these activities. The fun elements of the internet greatly appeal to children of this age, and the appropriation of creative and constructivist activities continue to be a desired outcome for children.
Teaching children to be disciplined users is important too. My research showed that those who spent a lot of time just browsing were often those who had unrestricted use of the internet at home. The encouragement of supportive, responsible parental supervision is important and schools should have a role in promoting this. Where the response from home is apathetic or negative, schools should look towards the education of parents and the provision of the internet during out of hours time in the form of after school, or homework clubs where good out-of-school internet behaviours and habits can be demonstrated and developed.

Informal learning using the internet often appears as self-motivated with a strong sense of ownership both of content creation and social networking. It is often generated by a real purposeful need by the children themselves, often with the assistance of their peers.

Schools should be places where literacy in new media can be developed. The sample of schools in which children were consulted in the research represents a broad set of demographic profiles across England. As the sample was restricted to children at year seven, responses from other year levels would most probably have shown a different set of responses. This is especially likely with respect to the ownership of social networking sites. Older children may be more inclined to use the internet for communications, to explore and test boundaries and to behave in a more independent manner.

All the students included in the sample were from schools with good internet provision and it also appeared that children were also generally immersed in the internet in their out-of-school contexts. In this sense, perhaps the internet is a non-issue, being such a natural part of their lives that it holds no awe or surprise for them. This contrasts with my own response, where I am still easily impressed by new internet-based applications. The danger is that school and home practices will diverge to the point where school provision of the internet becomes increasingly irrelevant to children’s lives, especially if a significant gap between teacher and student competencies emerges and grows.

Perhaps a more longitudinal study is required, following the patterns of usage over a number of years and possibly examining other types of ICT usage such as mp3 players, mobile camera phones and emergent technologies.
Both internet use and reading are popular activities and seem to be related i.e. children who like using the internet also like reading. This clearly links internet use as being a literacy activity. Games, homework, browsing and instant messaging are favourite activities and the literacy activities associated with these are worthy of exploration. As internet use and reading are closely related, literacy is a key skill for internet use and also a key way of improving and practicing that skill. The motivational level for activities such as these is high, as children enjoy the levels of engagement that are afforded by use of the internet.

There appears to be a mixed set of rules for home usage, and education of parents is important, especially if their skills and understandings of children’s social practices on the internet are low. Because of children’s high levels of confidence with the internet (66% think they are good users), rules for both school and home usage should perhaps be constantly reviewed.

There is a bigger gap between those with access and those without access for boys and girls, and this inequity of access should be explored further. Certainly, the research shows that more emphasis is needed on reading for boys. Girls’ interest in social networking applications also demands a curriculum that teaches responsible use. My research shows that social networking owners are more independent, less likely to look at recommended websites and although children are quite aware of safety issues and can recognize dangers, we must continue to equip them with the necessary skills. The use of resources from Childnet International and the Child Exploitation and Online Protection Centre is to be encouraged. Resources outlined by the Cyberspace Research Unit’s 2004 report (O’Connell, Price and Barrow, 2004) into emerging trends amongst primary school children’s use of the internet has been taken up by many schools and local authorities. This trend is also to be encouraged and cascaded into the family homes of children. As noted previously, boys tend to use the internet more for chatrooms, games and music, possibly partially because they have less strict rules at home than girls but possibly just because this is what boys enjoy doing anyway. A curriculum response that teaches responsible use is also required here.

The role of the internet in schools certainly needs constant examination. Students generally don’t see its usage at school as being as relevant as might be hoped. Indeed, Lankshear and Knobel describe how “…much classroom appropriation of new technologies is ineffective,
wasteful, and wrongheaded. For a start, they [educators] are likely to see that effective use of the internet calls for sustained continuous periods online with minimal constraints” (Lankshear and Knobel, 2006b, p. 258).

A response is required to address this relevance, possibly through further research into teachers’ perceptions and usage, and there is arguably a need to revisit professional development models for the use of internet applications in the classroom for learning and teaching. Much of what the young people appear to do on the internet is play, not just with respect to online games but playing with video, music and social networking. The institutional rationale for the expense of providing the internet in schools is primarily for the transmitting of information to learned. This is how the cost can be justified. The dichotomous nature of the internet for play/learning is managed by young people, although ‘play’ is still the key word. This is consistent with Sandvig’s view of the internet as a place for ritual and play as well as for information retrieval and work (Sandvig, 2006). Again, Lankshear and Knobel “…do not advocate turning schools into ‘playgrounds’ for new literacies at the level of popular cultural engagement, Educational practice is distinct from and different to popular culture. The day we give that distinction away is the day we give formal education away” (Lankshear and Knobel, 2006b, p. 259).

Some authors speak of the necessity of engaging children with the use of the internet (Pritchard and Cartwright, 2004). Most children who responded to my research were soundly engaged, with the engagement being a natural and embedded part of a child’s habitus. I believe that the issue here relates more to giving children the critical and ethical capabilities to use the internet more skilfully.

Lack of access to the internet at home by children can mean exclusion from a range of social, creative and constructivist skills. Children not using the internet for communicating with friends, music, games and homework are missing out on a great deal. Perhaps this is a future role of schools’ internet provision, not just as an enabler of access, but also a promoter of innovative practice. Teachers employing strategies such as personalised learning, formative assessment and other contemporary approaches to education may find in the usage of the internet mechanisms by which children can become more independent, directing their own curriculum and managing their assessment for learning. Internet tools such as learning platforms require teacher
engagement at the same time as letting go of the locus of control. The negative side of increased online engagement is that excessively heavy use of the internet is often related to music downloading and chat room use and the dangers of internet addiction should be an area of future concern both for parents and schools. Children who use the internet for more than two hours per day could be prone to internet addiction, and excessive internet use should be monitored by parents and teachers, as has already been noted by researchers (Yoo et al, 2004). The issue of internet addiction is also explored by Cao and Su who found that, certainly in China, young people with internet addiction possess different, and often disturbing psychological features when compared with those who use the internet less frequently (Cao and Su, 2007). The reality at the time of writing of this paper (2006-2008) is that a significant proportion of children use the internet to watch videos and claim that they are more likely to use the internet than television to learn about things (Ofcom, 2007, pp 94-95). As they get older (and approach the age of my sample group) they are also more likely to use the internet to keep in touch with other people (Ofcom, 2007, p. 96).

Both parents and teachers need to listen to and observe children’s online behaviour whilst at the same time respecting their privacy. Byron talks of how “in terms of adult input with the young person and technology, this is a time to move towards collaborative management” (Byron, 2008, p. 38). Zembylas and Vrasidas discuss the principles of Levinas’ view on ethics and how they relate to internet use. Internet use has an ethical significance which all parties must discover on a journey together. The ethics will evolve through a sensitive and sympathetic partnership (Zembylas and Vrasidas, 2005). With respect to the education of both parents and students, parental and child use of the internet together as a shared experience could improve the effectiveness of parental monitoring. This is supported by the findings of Wang et al (Wang, Bianchi and Raley, 2005). This also is supported by other writers who stress the importance of understanding parents’ and children’s interaction with the internet at home (Valentine and Holloway, 2001).

Looking back on my own research process in examining these areas, I can see issues relating to the time sensitivity of the data. The internet has changed significantly during the time of writing of this paper (2011) and in a short period of time the internet will further mutate and children may become engaged in a range of online activities that are yet to
be invented. Activities described in this paper may be discarded by children in favour of new technologies affording fresh opportunities for leisure, for learning, communicating and collaborating. In this sense, this paper is an artefact representing a snapshot of the state of children’s internet usage during 2011.

Further work will certainly need to be undertaken to ensure that we are constantly revising our own practices as educators, parents, builders of schools and collaborators with children’s online and offline worlds. New theories will in time emerge to support these and we must constantly reflect not just upon what is happening, but on what new ideas could emerge from future research.

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Biography

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