

## Beyond the digital divide: young people and ICT

### Perspective paper

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This paper has been produced in conjunction with the technical paper *Providing ICT for socially disadvantaged students* by Kristin Liabo and Antonia Simon, edited by Joe Nutt, which is available from [www.cfbt.com](http://www.cfbt.com)



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## Executive summary

The concept of the 'digital divide' has long been used to justify provision of free or discounted ICT equipment to school students in the UK, both at an individual school level and via much wider initiatives such as the former government's 'Home Access' programme. For over 25 years it was thought that factors such as age, gender and socio-economic status contributed to a split in the level of internet access available to the country's children and young people.

However, as this report shows, recent studies indicate that 95% of households with children now have internet access and only 3% of the nation's young people can be described as 'non-users' (with no access to the internet anywhere), a group that is not representative of any one socio-economic class.

Any debate over the 'digital divide' that centres purely on whether or not school students can access the internet is redundant – internet access is all but universal – and any schemes that exist solely to provide students in this country with free equipment – not engaging in the training or usage of this equipment – are in danger of wasting the resources they have.

Instead of an access-focused divide, however, there may be another kind of divide present: a schism between the classes which runs deeper than 'access', which concerns how children and young people actually use the internet, and in particular, how they use the internet in relation to their education and school work. School students from households of the lowest socio-economic class (using a classification system based upon parental occupation) access the internet for just as long as those from other backgrounds, but they are significantly less likely to use the internet to carry out school work or homework. Schools and schemes can provide those disadvantaged students in this country with equipment, but until they address the issue of why these young people are so much less likely to use the internet for their education, this 'second-level' digital divide will remain.

An example of such a scheme, the 'Home Access' programme initiated under the Labour Government in 2008, ploughed almost £200 million into providing either devices and/or internet access to households; none of this money was allocated to training. Whilst potentially contributing to the current situation whereby access is all but universal, there was a far from comprehensive response from participants that their newly-provided access was used in order to do school work.

One of the key questions to be asked revolves around whether or not access to technology or the internet actually does bring any tangible benefits to school students; there is precious little evidence which categorically shows that educational attainment and access are directly linked. The assumption that the two must be intrinsic is unproven and as this report (and a complementary technical paper prepared by researchers from the EPPI-Centre at the IOE, available from [www.cfbt.com](http://www.cfbt.com)) shows, those studies which do focus on the links between ICT provision/access and attainment produce mixed results and are of varying methodological quality.

Instead of focusing on the the now irrelevant issue of access, schools, local authorities and the Government need to focus on how school students from low socio-economic backgrounds can be enabled to start using their computers and the internet to carry out school work – which means providing training and support. The second-level digital divide cannot be solved purely through the financing of equipment; instead it requires a sea-change in the approach being taken. Every young



person in this country needs to be enabled to use the internet and, if not doing so already, schools need to build upon the fact that two thirds of students who use the internet do so for school work and homework.

This report makes a number of key recommendations in the form of challenges to some of the debate's key stakeholders:

- **A challenge to schools** to empower their students to make use of the internet and ICT to which they have access; not only to encourage the use of this technology in school or in homework, but also to actively promote it and to promote effective ways of using it. This should not take the form of simply setting assignments that must be completed electronically, but should address the needs of school students in terms of making the most of technology and ensuring that they feel supported and confident when using this technology expressly for learning and working.
- **A challenge to parents and children** to – together – understand and make use of the power of technology. Parents need to inculcate an attitude towards technology, computers and the internet amongst their children which regards the former as useful tools in both the pursuit of knowledge and learning and the direct completion of school work, including homework. Parents should feel properly supported and equally able to support their children.
- **A challenge to policy-makers** to move away from initiatives which seek purely to provide internet access or equipment, and instead to begin addressing the needs of young people and their parents from lower socio-economic groups. This should centre on providing targeted support and training in order to engage children and young people from all backgrounds in the use of the internet and technology in school and homework, thus prioritising 'digital literacy' (communicating effectively using digital technologies) throughout the curriculum.
- **A challenge to researchers** to investigate the nature and impact of ICT support and training for parents, children and young people. In particular this should focus on identifying the benefits that such provision might bring in terms of attainment – explicitly differentiating this approach from one concerned with the provision of access alone.



## 1 Introduction

This perspective piece complements the 2013 technical paper and systematic review *Providing ICT for socially disadvantaged students*, commissioned by CfBT Education Trust and undertaken by researchers from the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI-Centre) at the Institute of Education (IOE), University of London.

The review is specifically concerned with a UK context and focuses on the divide in access to the internet and technology for school students aged 5 to 15 (although it draws upon a wide range of sources in order to inform this approach and inevitably these do include case studies and data from populations outside of these parameters).

Researchers from the EPPI-Centre identified a range of literature which related to the digital divide in the UK which is complemented by the most recent studies conducted by Ofcom and the ONS into internet and ICT usage.

## 2 The ‘digital divide’ myth

Ever since the home market for computers emerged in the 1980s there has been talk of a ‘digital divide’. Increasingly, academic and policy efforts have focused on this concept, which describes divisions within and across societies, between those who have access to digital technologies and those who do not (Eynon, 2009; Lichy, 2011; Livingstone & Helsper, 2007). For example, Chen and Wellman (2004) suggest the digital divide can be defined as ‘differences between those who have all the necessary resources to participate in current society and those who do not’ (Eynon, 2009: 277).

Defined as ‘unequal access to the internet and its use’ (Boonaert & Vettenburg, 2011), as a result of a range of factors such as age, gender and socio-economic status (SES), the digital divide in the UK has been a prevailing concept for over 25 years. However, recent research, in particular by Ofcom (2012) and the ONS (2012), has suggested that traditional conceptions of this divide might be out of date and misplaced.

However, much of the research on the digital divide has largely concentrated on adult populations and there is a paucity of evidence that addresses how children and young people access technologies (Devine & Lloyd, 2012; Livingstone & Helsper, 2007). Some researchers have argued that the lack of research on how children and young people access and use the internet is a result of their being ‘widely perceived to be ahead, dubbed the internet generation or online experts’ (Livingstone & Helsper, 2007: 672), which assumes all young people make use of available technology.

Mehra et al. (2004: 782) described the digital divide as ‘the troubling gap between those who use computers and the internet and those who do not’; however, as Boonaert and Vettenburg pointed out, ‘the debate is much more complex than just this binary distinction between the “haves” and the “have-nots”’ (2011: 55).

In terms of the use of ICT in education, it is argued that access to technologies through schools, colleges, universities and homes is important for facilitating all kinds of learning purposes (Eynon, 2009). It has also been suggested that greater internet literacy is associated with more ICT opportunities being taken up (Livingstone & Helsper, 2007).



*“... 95% of households with children now have internet access.”*

In addition to the question of access, the use of technology to boost educational performance has been urged on schools from various sources including policy-makers and business. For schools with limited budgets and multiple demands it has become vital to ask if ICT equipment, at home and at school, makes it easier for students to learn, and whether ICT ultimately has an effect on educational attainment. In 2012 Nesta commissioned a review of the use of technology in the classroom and found strong evidence of a positive impact on learning, citing a ‘growing body of invaluable evidence that demonstrates how technology can be used effectively to support learning’ (Luckin et al., 2012: 63). The review noted that ‘initiatives to equip every child with a mobile, laptop or tablet serve a purpose and they are likely to continue where funding and political will are aligned’ (p. 62) but made the critical point that the impact is often down to how the technology is used and that ‘potential will only be realised through innovative teaching practice... teachers may require additional training that enables them to use technologies in new ways’ (p. 63). The review noted that access was only one aspect in terms of enabling effective use of ICT, and that training and support were vital additional components.

For schools and teachers any digital divide has implications for their expectations of the technology knowledge that students bring to school and in terms of what teachers can set for homework assignments. If some school students do not have access to printers or the internet at home, this might impact on their ability to participate fully at school. Similarly, if some students have better access to technology outside of school, this might put them at an advantage over those who do not; it is this assumption that has led to what might be an over-emphasis on interventions to provide greater access to ICT e.g. the Department for Education’s ‘Home Access’ programme (DfE, 2011).

More recently, the digital divide debate has moved on from a dichotomy between the ‘haves’ and ‘have nots’ to a ‘multifaceted phenomenon, defined as a continuum of access and use where multiple interrelating reasons such as attitudes, skills, quality of access and social support are at work in explaining if, and how, people use new technologies’ (Eynon, 2009: 278). This is what can be referred to as the ‘second-level digital divide’ (Lichy, 2011; Zhao, 2009).

In support of this new thinking, research has been concerned with comparisons across socio-spatial perspectives, such as along urban and suburban divides (Lichy, 2011) and between ‘disadvantaged’ and ‘advantaged’ socio-economic groups (Eynon, 2009; Lee, 2008; Livingstone & Helsper, 2007). North et al.s’ (2008) work suggested that there was a strong link between technology use and class, which Lichy expanded upon by noting that ‘the link between cultural awareness and living standards is thought to produce a socially entrenched digital inequality rather than an economically entrenched digital divide’ (2011: 471).

A report on an English national intervention carried out by the Department for Education (DfE) aimed at providing home internet access for those worst off (the ‘Home Access’ programme), suggested prior to the intervention there was an ‘assumption that a plateau in internet penetration would persist, and that the digital divide (in terms of physical access) was not being narrowed.’ However in reality this ‘may not have been the case’ given the fact that the intervention began during the ‘biggest up-turn in household internet penetration for years’ (SQW, 2011: 90).

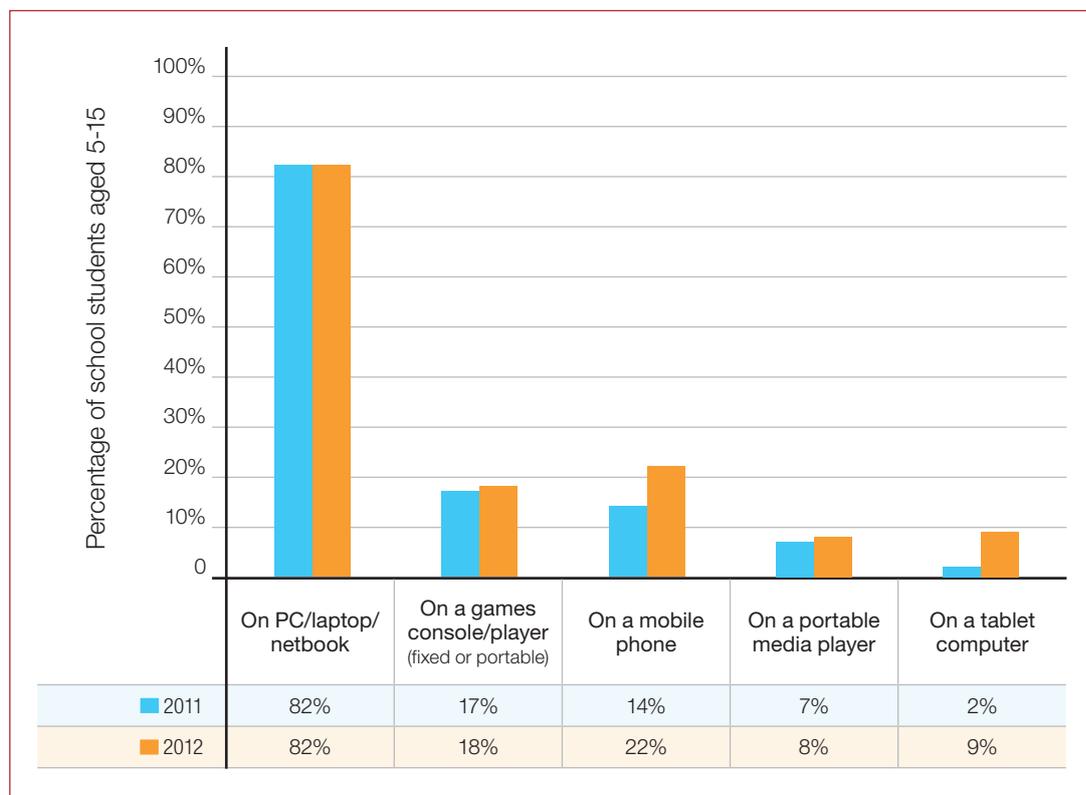
The studies included as part of the systematic review indicate that access to ICT is almost universal for children and young people and has increased rapidly over the last few years. This has largely been driven by an increase in access within households with children. For example, Livingstone and Helsper’s (2007) research based on a sample size of 1,375 young people aged 9–17 years showed



that '74% of children and young people in this study accessed the internet at home' (p. 676) and that only 3% could be classified as 'non-users'. Also, Ofcom's report (2012) which aimed to give an overview of media use, attitudes and understanding among children and young people aged 5–15, showed that nine in ten (91%) young people aged 5–15 live in a household with internet access via a PC, laptop or netbook. These findings are supported nationally by ONS statistics (2012) which show that 80% of all households now have access to the internet, but, crucially, 95% of all households with children have internet access.

The Ofcom (2012) study also reports on internet access through different types of media. This shows that a laptop is the device most often used to go online at home: 'slightly more than four in five children (82%) go online at home through a PC, laptop or netbook, one in five go online via a mobile phone (22%), one in five go online via a fixed or portable games console / games player (18%), one in ten through a tablet computer (9%) and one in twelve through a portable media player like an iPod Touch (8%).' In particular, usage of tablets and mobile phones to access the internet has increased dramatically when compared with results from the Ofcom 2011 study. Figure 1 shows the devices school students use to access the internet, drawing comparisons between 2011 and 2012.

**Figure 1: Devices ever used by school students aged 5–15 to go online at home (2011 and 2012) (adapted from Ofcom, 2012).**





### 3 Socio-economic status and age

*“... no particular socio-economic group is more likely not to use the internet at all.”*

One of the interesting findings of the research is that while access is almost universal, when socio-economic status is considered, there are differences in where and how school students from lower-income households are accessing and using the internet. The Ofcom studies (2011 and 2012) identified socio-economic differences in access and use. These studies compared socio-economic difference using the social grades AB, C1, C2 and DE. These groups are social grades of chief income earners derived from the British National Readership Survey (NRS).<sup>1</sup> The Ofcom study of 2012 suggests that internet access at home in AB and C1 households is now close to universal (98% and 97% respectively) but home internet access for children and young people in DE households continues to be lower than the levels across all other socio-economic groups (2012: 18). However ‘children in DE households are more likely than all children aged 5–15 to use the internet only elsewhere and not at home (6% vs. 3%) or to use the internet only at school (8% vs. 5%)’ and furthermore ‘no particular socio-economic group is more likely not to use the internet at all’ (2012: 45).

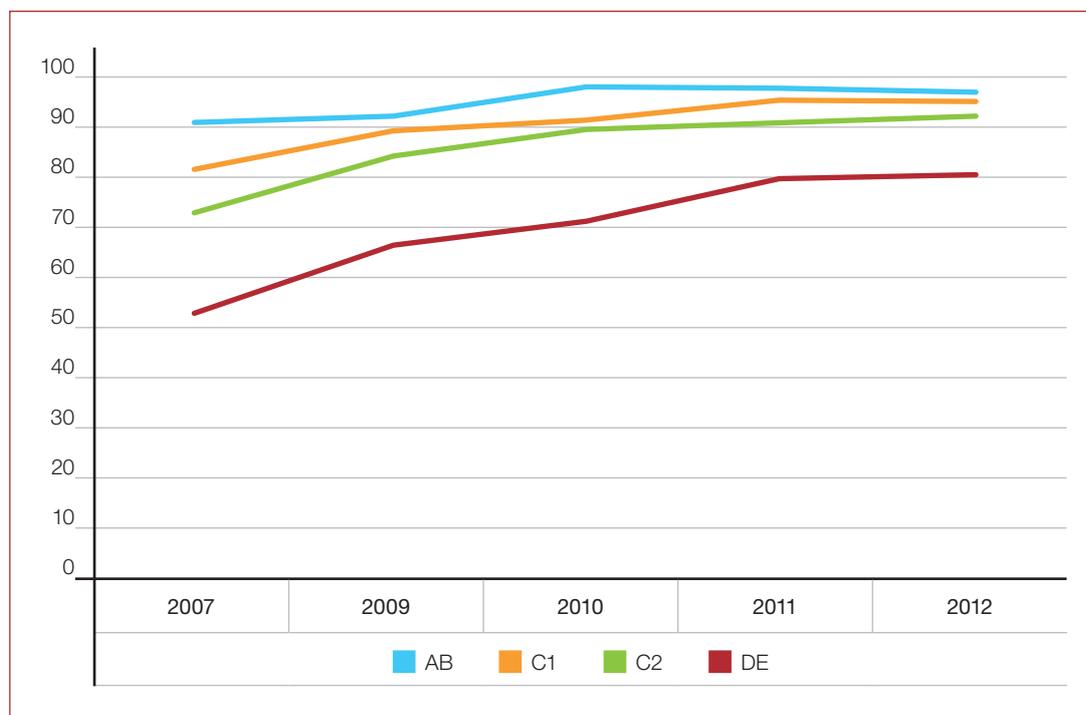
While in 2010 there was no difference across household socio-economic groups in the device mostly used by school students to access the internet, by 2011 students in DE households were identified to be less likely than all students to mostly use a desktop PC (27% vs. 33%) and more likely to mostly use a mobile phone to access the internet (6% vs. 3%). It is not surprising that school students in such households are less likely to use the internet for school work or homework, given this tendency to access the internet through devices other than desktop PCs – mobile phones are hardly conducive to completing formal homework assignments.

When comparing the trend in internet access over the past five years amongst school students aged 5–15, Figure 2 clearly shows a narrowing of the gap between social classes. In 2007 91% of AB households had home access to the internet, whilst only 53% of DE households did; in 2012 the associated figures were 98% for AB and 81% for DE.

<sup>1</sup>The Ofcom research uses a ‘social grade’ classification system, which has six groups: A, B, C1, C2, D and E. More information on these grades can be located at: [http://www.ipsos-mori.com/DownloadPublication/1285\\_MediaCT\\_thoughtpiece\\_Social\\_Grade\\_July09\\_V3\\_WEB.pdf](http://www.ipsos-mori.com/DownloadPublication/1285_MediaCT_thoughtpiece_Social_Grade_July09_V3_WEB.pdf) A/B = High managerial, administrative or professional and intermediate managerial, administrative or professional; C1 = Supervisory, clerical and junior managerial, administrative or professional; C2 = Skilled manual workers; D/E = Semi and unskilled manual workers and state pensioners, casual or lowest grade workers, unemployed and state benefits only.



**Figure 2: Availability of internet use at home, through a PC, laptop or netbook, amongst school students aged 5–15 (adapted from Ofcom, 2012).**



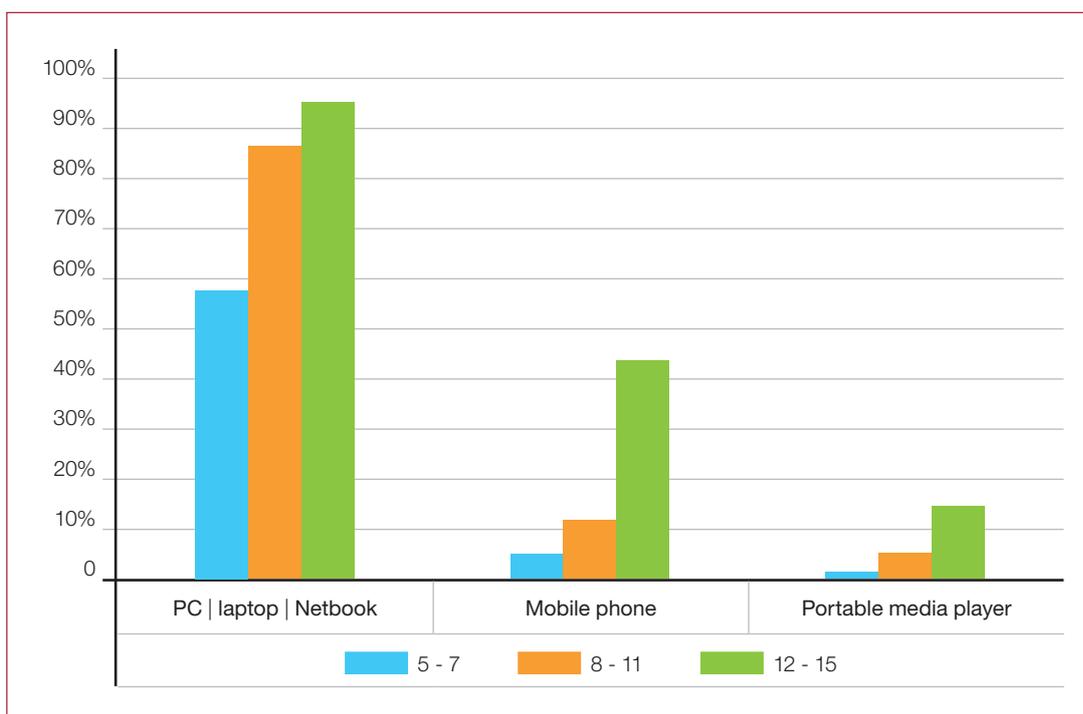
Further evidence for home access to the internet was provided by Lichy's (2011) research, which explored the digital divide by comparing internet usage in France and Britain. She argued that whilst the internet is 'levelling the playing field' in terms of content and school students' exposure to the breadth of uses, 'engaging in scholastic/educational activities online remains unequally distributed by social background in both France and Britain' (p. 473). However, she concludes that the survey data as a whole indicates that 'relatively few major differences in internet usage were identified between urban and suburban internet users' (p. 473).

Livingstone and Helsper (2007) find that lack of access is related to both socio-economic status (SES) and age, so that 'non-users are more likely to be found among the oldest age group [these are 18–19 year olds] and the youngest age group [these are 9–11 year olds], and they are most common among poorer households' (p. 676). Also, they find little, if any, gender difference for the younger-aged children in their study but a gender difference for young people in their early to mid-teens, 'by which time the number of opportunities taken up is expanding' (p. 686). However, they found that the observed SES difference (of less access by poorer households) disappeared when the young people with home access only were compared, which they argue shows that 'children from lower SES homes who have home internet access use it just as much as those from higher SES homes', and that 'providing home internet access helps to close the gap in use, potentially reducing disadvantage' (p. 678). This is supported by findings from Eynon's (2009) study which showed that 'in 2003, 53% of internet users had home access compared with 94% of internet users in 2007' and led her to conclude that 'home access does have a significant role in explaining who uses the internet for some of these learning activities' (p. 8).



Whilst Ofcom found that in terms of availability of internet use at home, there were generally no major differences between age groups (87% at ages 5–7, 90% at ages 8–11, 96% at ages 12–15) there were much more marked differences when comparing actual usage of devices (2012: 19 & 39). Figure 3 shows that the older age groups were much more likely to actually use the internet at home, across a range of devices, but particularly through mobile phones.

**Figure 3: Devices ever used by school students to go online at home, by age range (adapted from Ofcom, 2012).**



*“... 12–15 year olds on average spend over 17 hours a week online.”*

Similarly, the older groups of school students were more likely to spend longer on the internet at home: 5–7 year olds on average spent six hours per week using the internet under these circumstances, whilst 12–15 year olds on average spent over 17 hours per week. This marked contrast suggests that the digital divide in the UK, across age ranges at least, is still prevalent when it comes to internet use at home.



## 4 Usage

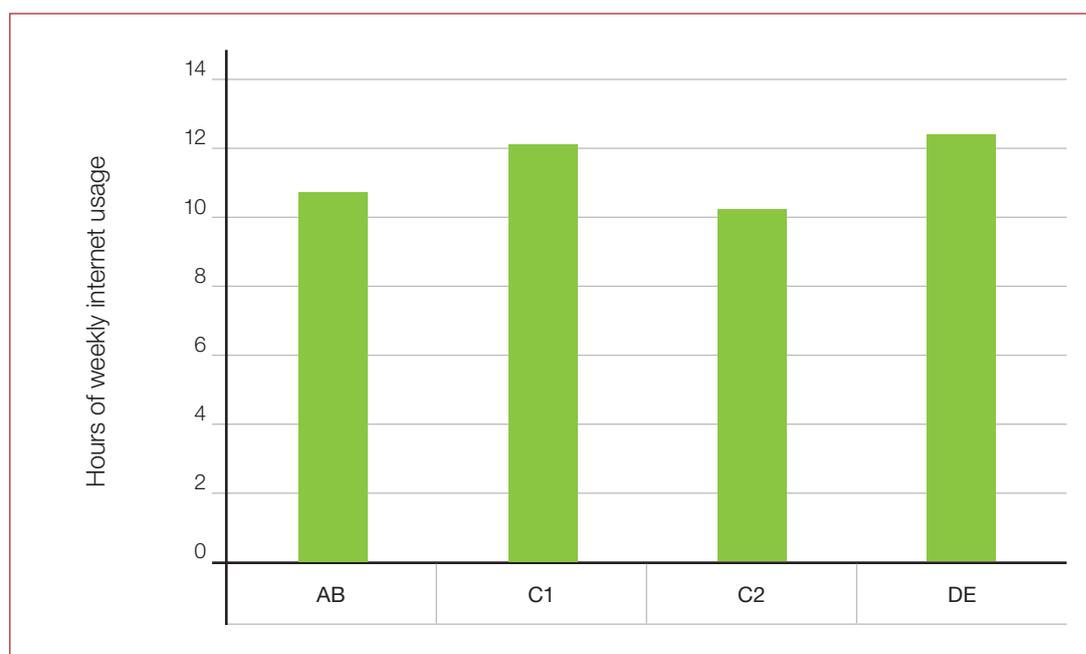
*“... the digital divide, as conceptualised purely by internet access, no longer exists in the UK.”*

Whilst there are some differences in the access provision at home – across SES groups and age groups – the availability of internet access through other sources (e.g. school) would suggest that the digital divide, as conceptualised purely by internet access, no longer exists in the UK. Instead, any divide still present is more likely to relate to the actual usage of ICT and the internet by school students (regardless of whether they actually have access).

Livingstone and Helsper (2007) argue that long-term evaluations are needed in order to assess ‘the consequences of differential internet use’ (p. 683). They suggest that instead of comparing those who use technology with those who do not, a more helpful way of addressing the issue (especially for school students) is to conceptualise a ‘continuum of use’ (p. 682). They suggest two possible ways of mapping this continuum, one based on the amount of use (non-users, low-users, weekly, daily) and the second based on breadth of use, which refers to the range of opportunities taken up (p. 684). While home ICT provision has undoubtedly increased school students’ access to the internet, Livingstone and Helsper (2007) suggest it can alleviate but not overcome the relative disadvantage of coming from a low SES household in terms of the breadth of internet use (p. 692).

However, the most recent results from Ofcom’s survey of media usage (2012) paint a different picture in terms of socio-economic status, at least in so far as the amount that school students use the internet. Figure 4 shows that in terms of the average number of hours spent, per week, online, there is no significant difference between SES groups.

**Figure 4: Hours of weekly internet usage amongst school students aged 5–15 (adapted from Ofcom, 2012).**



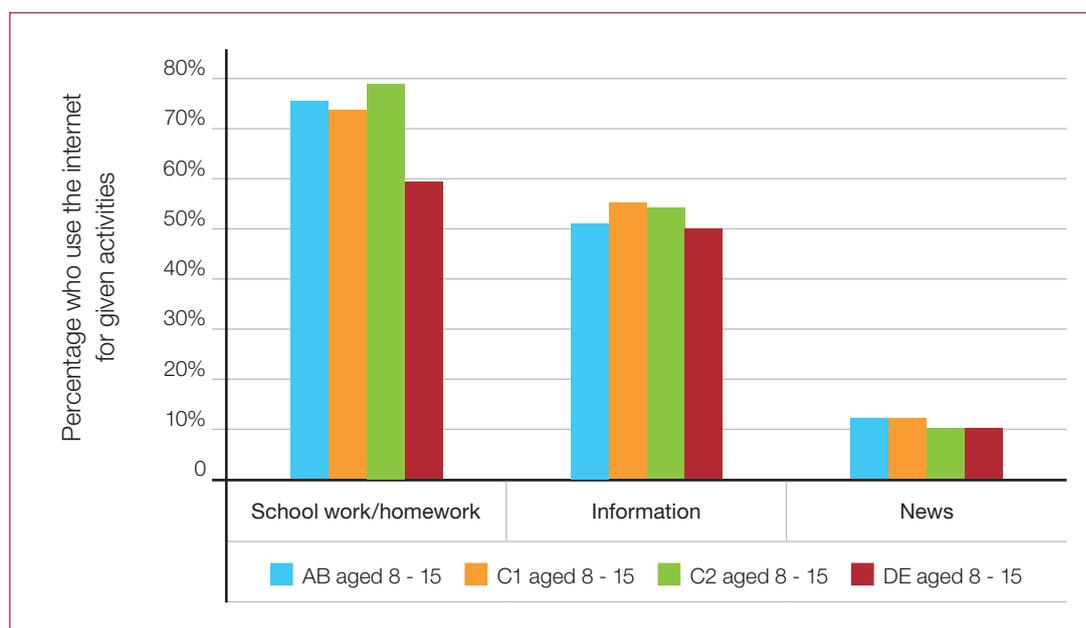


More broadly speaking, the same study found that in terms of activities undertaken whilst on the internet, school work/homework was the most often cited activity (68% of school students aged 5–15 who used the internet at home used it for this purpose), an increase on the number who reported undertaking this activity in 2011.

There is evidence that involving technology in homework assignments can be beneficial: including ICT components in homework has been found to increase and develop parental engagement (Lewin & Luckin, 2010) and to improve attainment. Furthermore there is also evidence that when ICT is used for homework tasks there is an increased completion rate and more study time is likely to be spent on the assignments (Jewitt & Parashar, 2011).

However, when comparing the SES groupings' use of the internet for school work/ homework, there is a clear distinction: 'children aged 8–15 in DE households are less likely than all children aged 8–15 to use the internet at least weekly for homework/ school work' (see Figure 5) (Ofcom, 2011). Again suggesting that whilst there may be no discernible difference between socio-economic groups when it comes to having internet access somewhere, when those members of a DE household do have home access they are less likely to use the internet for school work (although that does not mean that they do not use the internet for learning: there were no significant differences amongst SES groups when it came to using the internet for 'information' or for 'news').

**Figure 5: Percentage of school students carrying out school work/homework on the internet (from those who use the internet at home) (adapted from Ofcom, 2011).**



This clear division between AB, C1 and C2 socio-economic groups on the one hand, and young people from DE households on the other, shows that simply providing access is not enough. As previously stated, there is no difference in these groupings when it comes to having some form of internet access, yet 15% fewer students from the lowest socio-economic group use the access that they have in order to carry out school/homework when compared with all other groups.



## 5 Effect

*“... free provision of computers did not impact positively or negatively on educational achievement.”*

The existence/conceptualisation of a digital divide is extremely important given the focus on providing home access to ICT for school students from socially disadvantaged backgrounds (e.g. the DfE ‘Home Access’ programme), but the effect of access on educational attainment is much debated and was a further area of focus during the systematic literature review.

In particular, given the evidence that an access divide has largely narrowed to the point of non-existence, it becomes important to consider how the internet and technology are actually used. Chapman et al. asked: ‘What does it profit students to have technology access if both they themselves as well as those instructing them do not have the training or capacity to utilise this technology efficiently?’ (2010: 248). A number of studies included in the systematic review look at the evidence of impact on educational attainment and the actual provision in question (i.e. whether or not training and support were provided in addition to pure access to technology/the internet).

There are mixed results when it comes to assessing the effect of home internet use and academic achievement. For instance, in the US study by Jackson et al. (2006) school students were targeted because they were perceived as socially disadvantaged, and were provided with free computers, internet and home technical support. The study found that internet use predicted Grade Point Averages (GPA) for mathematics and reading after one year of home internet access and at the end of the 16-month trial. Similarly in parallel tests, more time online was associated with higher reading comprehension and total reading scores. This finding mirrors that of the survey analyses that considered the relationship between ‘naturally occurring’ ownership and academic attainment (Fuchs & Woessman, 2004; Judge et al., 2006; Notten & Kraaykamp, 2009; Thomson & De Bortoli, 2007; Vigdor & Ladd, 2010).

A number of studies found significant association between access and/or use of a home computer and improved educational outcomes, as measured by better results in mathematics and/or reading, or ‘science-related domains’. Fuchs and Woessmann (2004) found that ‘holding all other influences constant, the performance of students with internet access at home is statistically significantly better in math and reading than the performance of students without internet access at home’ (p. 15). They also report significant differences in terms of the level of usage, with students performing much better if they use ICT (specifically webpages and email) ‘between a few times a year and several times a month’ or ‘several times a week’. Similarly, Vigdor and Ladd (2010) found ‘students with access to home computers tend to score about 2% of a standard deviation higher on reading and math test scores,’ (p. 17) and Judge et al. (2006) found an overall positive correlation between home computer use and achievement in (third-grade) mathematics and reading.

However, the study by Fairlie and Robinson (2011), a large randomised controlled trial which looked at impact on school administrative data, found that the free provision of computers did not impact positively or negatively on educational achievement. Two aspects are worth noting when considering these findings: a) school students recruited to the study were assessed for home ownership of computers rather than social disadvantage; and b) the intervention provided free computers only, without internet connection or additional technical support.

The American study by Judge et al. (2006) specifically compared socio-economic groups. This study set out to explore technology access differences between students at high-poverty and low-poverty schools. Schools were classified by Judge et al. (2006) according to their concentration of low-



income students, which they based on the percentage of total enrolment eligible for free or reduced-price lunches. The data of interest to the team was used to identify if there were any differences between subgroups of students according to academic achievement in reading and mathematics within the low- and high-poverty concentrations. Three groups of students were compared: 'high', 'average' and 'low' achievers; within the high-poverty schools, Judge et al. (2006) found statistically significant differences between the three groups of students in terms of technology access and reading during third grade. A similar pattern was found in low-poverty schools. In both high- and low-poverty schools, a greater proportion of 'low achievers' used technology for reading than did 'high achievers'. However, they found no such differences between the three groups of students in relation to their use of computers for mathematics (in the third grade).

The largely mixed results of the included studies indicate that there is a need for more research to be carried out in terms of the links between ICT provision and educational attainment. In particular, the largest and most methodologically rigorous study (by Fairlie & Robinson, 2011) found no link between the two, although the provision quite specifically did not include further support/training. Given the suggestion that the UK digital divide is no longer concerned with access but instead centres on quality of use, it is this provision of support that is perhaps most important when it comes to tackling the divide: ensuring that everyone is able to make full use of the access that is now so widespread.



## 6 Conclusions

*“...interventions that seek to improve access may not be the best investment; rather the focus might be better placed on efforts to ensure that students are using technology effectively.”*

In terms of re-conceptualising the UK digital divide, it is valuable to return to the point Lichy made about the possible existence of a ‘second-level divide’ (2011) which does not focus on a division across access but instead across usage.

It is clear from the evidence reviewed that the digital divide debate goes beyond whether school students have or do not have access to technology. For example, while the evidence shows almost universal access for school students, there is also evidence of inequalities between groups of young people and their households, including differences by gender, age and socio-economic grouping, specifically when considering home access to the internet. There do not seem to be any differences between urban and suburban areas (Lichy, 2011). However, Lichy calls for more research in this area ‘to produce a framework that furthers the understanding of socio-spatial inequalities and internet use beyond national borders’ (p. 474). There is therefore some evidence of a digital divide but it is more complex than just distinguishing between the ‘haves’ and ‘have nots’, and is less about physical access to ICT and more about different kinds of usage. For example, there is a need to determine why, even when school students from lower SE groups have home access, they are not necessarily using it in ways that support their learning or for educational purposes. The paucity of good-quality research in this area, particularly into how school students access and use technology, strongly suggests the need for more national studies to be conducted.

As well as the existence of a digital divide, effect of provision was also considered: the one large randomised controlled trial of high quality included in the review (Fairlie and Robinson, 2011) found no positive or negative effects from free provision but, as indicated by other studies, it may not necessarily be access that makes the difference when measuring educational attainment, but rather how the technology is used. Interventions that seek to improve access may not necessarily be the best investment; rather the focus might be better placed on efforts to ensure that students are using technology effectively. It should be noted that there are a myriad of other costs to consider when dealing with the ways in which school students might use the internet/technology for school homework (such as the cost of printers, paper, ink, maintenance, software etc.) which seem to be largely ignored by providers of free access/hardware consisting solely of computers.

The findings of the randomised control trial included are important, because some research has suggested that free provision can have a negative impact on educational achievement; the systematic review did not find any evidence of such an effect. Furthermore, providing students with home computers or internet access might have benefits beyond academic achievement, which have not been considered here. It is also worth noting that those studies that did find an impact on academic achievement tended to provide more equipment than the large randomised trial, and many of them also provided technical assistance or support. Considering the digital divide found in terms of technology usage, with lower socio-economic groups less likely to use it for educational purposes, it might be that additional support can make a difference in terms of the impact of free provision. Schools, local authorities and the Government need to focus on how school students from low socio-economic backgrounds can be enabled to start using their computers and the internet to carry out school work – which means providing training and support. The second-level digital divide cannot be solved purely through the financing of equipment; instead it requires a sea-change in the approach being taken. Every young person in this country needs to be enabled to use the internet and, if not doing so already, schools need to build upon the fact that two thirds of students who use the internet do so for school work and homework.



Furthermore, policy-makers need to ensure that digital literacy – ‘the ability to access, use, and express oneself using digital technology, including a critical understanding of technology’s impact on the individual and society’ (BCS & The Royal Academy of Engineering, 2012) – is prioritised throughout the curriculum.

Critically it is apparent that a digital divide based purely upon access to the internet no longer exists in the UK, but instead may have been replaced by a second-level divide in terms of the actual usage of ICT resources, particularly between age and socio-economic groups.



## 7 Recommendations

The recommendations of this report take the form of challenges to some of the key stakeholders of the debate, moving away from the idea of a divide in access terms and instead focusing on how the second-level digital divide might be overcome:

- **A challenge to schools** to empower their students to make use of the internet and ICT to which they have access; not only to encourage the use of this technology in school or in homework, but to actively promote it and to promote effective ways of using it. This should not take the form of simply setting assignments that must be completed electronically, but should address the needs of school students in terms of making the most of technology and ensuring that they feel supported and confident when using this technology expressly for learning and working.
- **A challenge to parents and children** to, together, understand and make use of the power of technology. Parents need to inculcate an attitude towards technology, computers and the internet amongst their children which regards them as useful tools in both the pursuit of knowledge and learning and the direct completion of school work, including homework. Parents should feel properly supported and should feel equally able to support their children.
- **A challenge to policy-makers** to move away from initiatives which seek purely to provide internet access or equipment, and instead to begin addressing the needs of young people and their parents from lower socio-economic groups. This should centre on providing targeted support and training in order to engage children and young people from all backgrounds in the use of the internet and technology in school and homework, thus prioritising digital literacy throughout the curriculum.
- **A challenge to researchers** to investigate the nature and impact of ICT support and training for parents, children and young people. In particular this should focus on identifying the benefits that such provision might bring in terms of attainment – explicitly differentiating this approach from one concerned with the provision of access alone.



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