

How do boys and girls differ in their use of ICT?

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Introduction

This briefing explores the differences between boys' and girls' use of ICT, both within and outside school, and for both educational and leisure purposes. A particular focus of this briefing is on how girls use ICT, what impact it has on them, and whether they are disadvantaged by the increasing use of ICT in education. It is written in the context of a well-established literature on ICT and gender, particularly on the two major themes of ICT helping to narrow the attainment gap between boys and girls and persistent concerns about the numbers of females gaining qualifications in ICT and entering technology-related professions. As well as examining evidence from the research literature, this briefing will also consider the implications of recent technological developments and trends in the use of ICT.

Summary of key points

- The use of ICT in education improves the motivation and attainment of both girls and boys, though the increases are more marked for boys than girls.
- There are few significant differences in girls' access to and use of technology within schools, but at home the differences are more marked: girls have lower levels of access at home compared with boys, and generally use ICT less. Girls use ICT more for school work, whereas boys use it more for leisure purposes. A large proportion of this difference can be accounted for by boys' greater use of computer/console games.
- There is evidence to suggest that socio-economic background is more a factor for girls' access to and use of ICT than it is for boys.
- Girls are more dependent than boys on school for their access to ICT and for guidance on how to use it. Boys have greater experience of using ICT in the home, but the structured use of ICT girls encounter within school goes some way towards redressing the balance.
- Girls prefer social and creative uses of ICT. They like to work collaboratively and enjoy using technology to learn, in both formal and informal contexts. In the home, online social networking has become an extremely popular for girls.
- Although there is little evidence that girls are less skilled than boys in the use of ICT (indeed, in some areas they show greater skill), girls generally feel less confident in their ability to use technology.
- There is no evidence to suggest that ICT intrinsically suits boys better than girls; there is, however, compelling evidence that the competitive, skill-based, non-collaborative nature of many computer games (even educational ones) is de-motivating for girls.
- Whereas boys are interested in technology for its own sake, girls see ICT as a means of pursuing their interests and furthering their learning. This may help to explain the lower number of females studying ICT or following a career in

technology, but it can also mean that girls' use of ICT is more productive in terms of learning gains.

- Overall, the evidence suggests that girls' interest in ICT decreases as they progress through school.
- Gender stereotypes in relation to at least some aspects of technology can have a significant impact on girls' attitudes towards ICT. These stereotypes begin at an early age with parents and are reinforced by peers, the media and, in some instances, teachers as girls get older. The idea that ICT is the domain of boys is particularly strong in relation to games and programming.
- The context in which girls use ICT in school is crucial to realising the benefits of technology: girls do less well when working together with boys, possibly as a result of both their own and boys' stereotypical views of technology.
- Mobile phones are more popular and more heavily used by girls than boys.
- Girls are more likely to both suffer from and engage in cyber-bullying than boys.
- Recent trends in ICT may prove particularly beneficial to girls: increasing use of social and collaborative technologies, a growing emphasis on ICT integration within subjects, and a move towards narrative and character-based games could mean that technology, both at school and at home, is increasingly aligned with girls' interests and preferences.

1 Boys' and girls' uses of ICT within school

The literature suggests that there is little difference in the ICT activities undertaken by boys and girls at school. (Hayward et al. 2003; Selwyn and Bullon 2000). This is perhaps not surprising as most of the use of ICT at school, certainly within lesson time, will be directed by teachers. The differences that do exist between boys' and girls' use of ICT at school may be largely due to boys spending more time at school playing computer games outside lesson time rather than differences in use during lessons.

However, evidence from smaller scale studies suggests that where pupils are given a choice of applications to use in lessons, differences do emerge – an observational study of a primary classroom (Waite et al. 2006) found that boys tended to favour database software, file manipulation, CD-ROMs and the internet, while girls preferred communication, publishing and photo manipulation software. This echoes the findings of a number of studies which have shown that girls generally prefer more social uses of computers, both in and out of school.

1.1 Motivation

According to both teachers and pupils, ICT can motivate both boys and girls, albeit in different ways and to varying extents. A DfES study of the motivational effect of ICT

(Passey 2004) found that boys seemed to be gaining more in certain cases, but girls were not being disadvantaged. The authors suggest that ICT helps boys move from a 'burst' pattern of working to a more persistent one – in other words, ICT can help boys work more like girls.

Teachers in the study believed that boys were motivated more by higher levels of access to ICT, and where ICT activities were competitive in nature and short in duration. A few teachers reported that girls need more support than boys in their use of ICT. This may however be due to the different approaches girls and boys take to working with ICT, rather than a lack of skills – a study from the Netherlands found that girls preferred to have an explanation before starting ICT activities, whereas boys would rather try things out for themselves (Volman et al. 2005).

An earlier DfES study (Hayward et al. 2003) found that while the majority of boys and girls said they enjoyed using computers, boys were more likely than to say they found them more motivating than traditional methods. Very few girls said they found computers less motivating, but girls were more likely to say they made no difference. The study found this trend became less noticeable with age.

However, in Becta's *Harnessing Technology Schools Survey* (Kitchen et al. 2007) both primary and secondary teachers were more likely to 'agree strongly' that ICT had a positive impact on boys' motivation, but at secondary level the difference between boys and girls was slightly greater. Similarly, Becta's *Impact 2007* study found that at secondary level girls are less responsive to ICT use than boys (Underwood et al. 2007). Other research, particularly from overseas, has also suggested that girls show less interest in and enthusiasm for ICT as they get older (Sanders 2005; Volman et al. 2005; Christensen et al. 2005). Why the findings of the DfES study should be different is not clear, but Passey suggests an explanation for why some younger girls may have less interest in ICT. Teachers in this study felt enthusiasm for ICT at school was driven by home access rather than gender – at very early ages some pupils use ICT toys at home, and the use of these could relate to motivation towards uses of ICT in school. A lack of ICT toys for girls could be a limiting factor in the motivation that girls have at early ages for ICT. (Home use of ICT is dealt with in section 2, below.)

An explanation for the difference in the motivational effect of ICT between girls and boys may lie in the design of educational software and content. Even pre-school educational software has been found to contain a significantly greater number of male characters than female, promoting at a very young age the idea that ICT is associated with boys (Aubrey and Dahl 2008). Cooper (2006) argues that the focus on using ICT to raise boys' achievement has meant that the design of educational software has been geared towards the game-like qualities of points-scoring and competition that appeal particularly to boys. Cooper cites research which shows that girls suffer from lower motivation, higher anxiety and a decrease in performance when using software of this kind. On the other hand, when girls are given software which is more gender-neutral such deficits disappear, suggesting that there is nothing intrinsically de-motivating about ICT itself.

1.2 Confidence and self-efficacy

There is evidence to suggest that the difference in ICT confidence between boys and girls is narrowing (Faulkner 2002) but most studies have found that girls' confidence with ICT is somewhat lower than that of boys. Girls are less likely to believe they will succeed at computer-related tasks, and when they do, they are more likely to attribute their success to luck rather than skill (Cooper 2006). Equally, girls are more likely to see failure as being a result of their own lack of ability (regardless of the actual cause), unlike boys, who tend to blame the equipment. However, lower self-efficacy does not necessarily mean that girls' skill levels are lower than boys' (Sanders 2005). The overall message from the research is that girls consistently under-estimate their ability with ICT. The study by Volman et al. (2005) is typical in finding greater gender differences in (subjective) ICT attitude than (objective) ICT competence.

1.3 Attainment

There is a growing body of evidence (eg Younger et al. 2005) that ICT can raise the achievement of boys and help to close the attainment gap between boys and girls. Recent evidence from Welsh schools shows that boys respond well to teaching approaches making regular and consistent use of ICT (Estyn 2008). In particular, interactive learning opportunities involving learning by doing and immediate feedback have been found to be successful. A DfES study on gender and education also found the capacity for ICT to improve the presentation of boys' work and allow them to draft and re-draft work more easily had a positive impact on boys' achievement in literacy in primary schools (DfES 2007).

There is considerably less evidence on the impact on girls' attainment or the differences between the two. What evidence there is seems to suggest that ICT does have a positive effect on girls' attainment and while the difference in impact between the genders is not great, it seems to have a greater positive effect on boys than it does on girls.

In Becta's *Harnessing Technology Schools Survey* (Kitchen et al. 2007) most primary and secondary teachers felt that ICT had a positive impact on both girls and boys but were slightly more likely to believe thus was true for boys than for girls. Similarly, a study of computerised testing of reading and spelling found no significant differences between girls and boys in either preference for or performance in computerised tests; however, in pen-and-paper tests girls outperformed boys, suggesting that the use of the computer had a greater impact on boys than it did on girls (Horne 2007). The ImpaCT2 study (Harrison et al. 2002) also find some differences, but these ran in line with subject-related expectations – girls did better in English, boys in maths and science. This suggests that while the impact of ICT may not be equal between boys and girls, other factors have a greater influence on differences in attainment.

The impact on attainment associated with particular technologies is discussed below.

1.4 Use of specific forms of technology

The term 'ICT' does of course cover a wide variety of different technologies. Most of the studies cited above relate to "computers" or to ICT in general, but there is evidence – albeit patchy – on certain types of technology.

Interactive whiteboards: The large-scale investment in equipping schools with interactive whiteboards and their increasing integration into classroom practice means the interactive whiteboard is of key importance in assessing any differences in the impact of ICT between boys and girls. A DCSF evaluation of interactive whiteboards in primary schools (Somekh et al. 2007) found attainment gains for both boys and girls, though these did vary across subject, Key Stages and pupils' levels of prior attainment. The study did not find a consistent relationship between gender and attainment, suggesting that other factors are more important in determining the impact of interactive whiteboards.

An earlier DfES pilot study of interactive whiteboards in primary schools (Higgins et al. 2005) found that 56 per cent of teachers said they had not noticed any differences between boys and girls in relation to use of the whiteboard. Of the 44 per cent who said they had noticed differences, most commented on the positive impact on boys – using the boards made boys more motivated, focused and involved. A few teachers, on the other hand, commented that the boards helped low-attaining girls, again suggesting that factors other than gender play a more important role. The Passey study (2004) found that interactive whiteboards were a technology where motivation was equal for boys and girls.

The research has shown that introducing interactive whiteboards into schools has led to an increase in whole-class teaching (Somekh et al. 2007). This in itself may have gender implications as boys have a tendency to dominate classroom interaction and there is evidence that this tendency becomes even stronger in classrooms with interactive whiteboards (Smith et al. 2007). It is, however, relatively early days in the implementation of interactive whiteboards in schools and the gender implications of their use needs to be investigated further.

Handheld devices: Although there is little evidence on this technology, it would seem that, as with ICT in general, both boys and girls benefit from their use but boys do so to a slightly greater extent. The evaluation of the Learning2Go project (Perry 2005), which equipped school children in Wolverhampton with Personal Digital Assistants (PDAs) showed that boys made more progress, relative to their predicted grades, than girls over the course of the project. In one primary school, for example, boys progressed by 3.79 grades in math over Years 3 to 5, while girls progressed by 3.36 grades. However, it is important to note that even in this traditionally male-oriented subject, girls' attainment is still superior to boys' – in the same school 76 per cent of boys achieved Level 4 or above in maths, while 83 per cent of girls did so.

Digital video: The Becta Digital Video pilot study (Reid et al. 2002) is an example of how technology can help to break down gender stereotypes in a way that benefits girls in particular. At one level, the study showed that some stereotypes were reinforced – boys would 'rush at' or 'hog' the technology, while girls planned more patiently and thoroughly, were more consistent editors and were drawn to 'design decisions'. However, using the technology gave girls opportunities which may not

have been afforded them in other learning situations – for example, using digital video enabled girls to speak out more and to become more involved in class activities such as directing films and making editing decisions.

Research inevitably lags some way behind developments in technology so there is little we can say at the moment on the differences in boys' and girls' use of newer technologies, such as Web 2.0 social and collaborative applications. It is perhaps interesting to note that where research does exist on these technologies (see, for example, Futurelab's research outputs at [<http://www.futurelab.org.uk/research>]), the issue of gender is rarely addressed (other than ensuring that samples are as gender-balanced as possible). Given the consensus in the literature that girls prefer more social uses of technology, this could suggest that researchers do not see gender differences as one of the major factors affecting the use of such technologies.

1.5 Socialisation and context

Socialisation is a theme which occurs frequently in the literature on gender and ICT. The influence of peers, parents, teachers and the media is noted as being a major factor – perhaps the major factor – affecting girls' confidence, self-efficacy and attitudes towards ICT. Numerous studies have found the existence of stereotyping in relation to gender and ICT, which can, according to Cooper (2006) become self-reinforcing – girls learn that computers are 'boys' toys', which increases their anxiety around ICT, leading to negative attitudes and poor performance. This poor performance is taken as evidence that the stereotype is correct. Much of the stereotyping may be unconscious but it can be harmful nonetheless – many teachers express a commitment to equality (Sanders 2005) but those who believe that girls dislike ICT have been found to direct more attention towards boys when using ICT in the classroom (Cooper 2006).

The context in which ICT is used in school is therefore very important. Cooper (2006) found evidence that working with ICT together with boys can have a negative impact on girls' anxiety and performance. In one study, girls and boys were asked to use a problem-solving game in pairs; some were grouped in same-sex pairs and others in mixed pairs. Boys' performance increased markedly in the mixed-sex pairs, while girls' performance decreased.

1.6 Socio-economic background

Although there is little recent research on how socio-economic background relates to the use of ICT by girls, there are older studies which suggest it can be a significant factor. Volman and van Eck (2001) cite two studies from the mid-1990s, one from the UK, one from the USA, which looked at the combined effect of socio-economic status and gender on young people's attitudes towards computers. Both studies found that while lower socio-economic status was related to lower levels of interest in computers for both genders, this was more true of girls than boys. A possible explanation offered for this is the prevalence of traditional gender roles found in lower-SES households and the extent to which parents encourage girls and boys to use the computer. Sanders (2005) similarly notes that higher parental educational achievement is correlated with greater encouragement of girls in the use of ICT.

1.7 Initiatives targeted at girls

Internationally, there have been a large number of initiatives and interventions intended to encourage girls to use ICT and improve their confidence, skills and attitudes. In this country, the major recent initiative Computer Clubs for Girls [<http://www.cc4g.net>] was intended specifically to foster girls' interest in IT as a career. According to CC4G's own evaluation, the clubs have enjoyed considerable success: 66 per cent of members report they are now more likely to consider a technology-related career. Ninety six per cent of club facilitators interviewed believe that girls' ICT skills improved as a result of their involvement in CC4G and 90 per cent believed participation would have a positive impact on girls' achievements across the Key Stage 3 curriculum. As Valentine et al. (2005) points out, girls-only computer clubs can be beneficial as they give girls a chance to use ICT without the fear that they will have to compete with boys or that being seen using computers will spoil their social identities.

However, it is worth noting that despite the success of such clubs, there are those who believe that creating clubs, activities and software aimed specifically at girls is actually perpetuating the stereotypical idea that 'mainstream' ICT is the domain of boys.

2 Boys' and girls' ICT use outside of school

This section covers the use of ICT outside school (primarily in the home) both for learning and for leisure. Internationally, evidence suggests boys have more experience of using ICT out of school, use it more freely, and consider themselves more capable at advanced ICT activities such as downloading and programming (Eurydice 2005). Girls, however, use technology more often than boys for social networking and creative purposes such as setting up their own website or creating an online photo album (Ofcom 2008). Behind such findings is a complex and sometime contradictory evidence base which shows a variety of differences between boys and girls across a range of technologies and uses.

2.1 Access to ICT outside school

If there are relatively few differences in girls' and boys' access to and use of ICT at school, in the home the differences are more marked. A DfES study of home use of ICT (Valentine et al. 2005) found that girls were significantly more likely to have either no access to a computer, or to have access to only one computer/laptop at home, whereas boys were more likely to have access to two or more computers/laptops. This pattern reflects the findings of other studies which suggest that boys tend to be more enthusiastic towards ICT than girls and to purchase their own ICT hardware and software for leisure use. However, there are few if any gender differences in home access to the internet – according to the 2004 UK Children Go Online study, 74 per cent of boys and 73 per cent of girls had home internet access (Livingstone and Bober 2005).

ICT in the home does of course cover as wide a range of technologies as ICT in school – games consoles, mobile phones, even electronic dance mats – and it is important to bear in mind that the pattern of differences between boys' and girls' access to various technologies is far from uniform. Whereas games consoles are largely the preserve of boys, mobile phones are more popular among girls. Patterns of use and access to specific technologies are dealt with in more detail below.

2.2 Use of ICT for leisure purposes

It is in the use of ICT for leisure purposes that the differences between boys and girls are most striking. Valentine et al. (2005) found that boys were more intensive users of ICT at home for leisure, and this gendered pattern of ICT use was established as early as Year 2. Another study found that 46 per cent of boys compared with 35 per cent of girls reported using the computer for fun every day (Kent and Facer 2004). The same study found that more boys than girls report liking 'digital activities' outside school: 82 per cent of boys and 58 per cent of girls. These differences, however, should not mask the fact that girls do of course spend a significant amount of time using ICT for leisure purposes, particularly for online social networking (Ofcom 2008). Other uses girls tend to favour are: writing, developing artwork, cropping and editing photographs, creating music, and producing invitations, booklets, and diaries (Valentine et al. 2005).

2.2.1 Games

There is a consensus in the literature that playing computer games is the activity which accounts for much of the difference in girls' and boys' out of school use of ICT (Kent and Facer 2004). Valentine et al. (2005) found that 70 per cent of boys used consoles at least once a week compared with only 32 per cent of girls. Girls are less likely to be intense game players and more often play games when bored, rather than as a first choice activity (Kirriemuir and MacFarlane 2004). A BBC-commissioned report (BBC 2005) of UK game-playing found that while the gender split amongst gamers is not that great (45 per cent female, 55 per cent male), those who play games more frequently are more likely to be male (27 per cent compared to 21 per cent female). More recently, Ofcom (2008) found that boys reported higher use of games consoles than girls and were far more likely to cite games as the media activity they would miss most if it were taken away (21 per cent of 12-15 year old boys compared with 3 per cent of girls). A study of pre-school children in Scotland suggested that game-playing is seen as a gendered activity by parents: games consoles were bought primarily for boys, suggesting that girls' opportunities to play games are restricted from an early age (Plowman and Stephen 2003).

There are also major differences in the kinds of games boys and girls like to play. Boys tend to prefer sports, action adventure and violent action games, whereas girls prefer educational games, puzzles and fantasy adventure. Valentine et al. (2005) also found that girls tend to prefer simulation games and are more likely than boys to use games that are overtly educational. Dickey (2006) highlights the features which girls prefer in game design:

- exploration

- collaboration and communication
- rich narrative
- engaging characters
- opportunities to design or create.

However, despite showing a preference for educational games, girls have been found to be more sceptical than boys about the educational value of games. In contrast to boys, they do not believe that games provide unique learning opportunities and see game-based learning as just another way to learn.

Research suggests that it is this gender imbalance in gaming culture that not only accounts for the difference in how long girls and boys spend using ICT but also leads to other differences in terms of ICT attitudes, confidence and competence (Faulkner 2002). However, the features of game design preferred by girls are now becoming more commonplace, certainly within the context of games for learning. It could be argued therefore that the difference in game-playing between boys and girls will become less marked as more and more games are produced that appeal to girls and which (in contrast to the picture painted by Cooper (2006) above) play to girls' strengths rather than boys'.

2.2.2 Mobile phones

Mobile phones are one technology where girls are significantly ahead of boys in terms of both their use and ownership. According to Ofcom (2008), amongst children aged 12-15, girls show a significantly higher level of mobile phone use than boys. They also use their mobile phone for a broader range of purposes.

2.3 Use of the internet outside school

The internet offers a very wide range of activities – from information-finding and communication to downloading music, blogging and website creation. Given this complex picture, it is perhaps not surprising that the evidence on the extent of boys' and girls' use of the internet is conflicting: while UK Children Go Online found that boys use the internet slightly more frequently than girls, and do so for longer (around an hour a day compared with around half an hour for girls), the 2006 Ofcom Media Literacy Audit found that girls spend slightly more time using the internet than boys. Similarly, UK Children Go Online found that girls report lower levels of online skill and self-efficacy, while according to Ofcom 97 per cent of 12-15 year old girls say they are confident about using the internet, compared with 94 per cent of boys.

What is certain, however, is the rapid growth in the popularity of online social networking and the impact this is having on young peoples – and particularly girls' – use of the internet. The 2008 Ofcom Media Literacy Audit (Ofcom 2008) found that 12-15 year old girls are considerably more likely to have set up a social networking profile than boys (51 per cent compared to 38 per cent). The 2008 Audit also found that girls make broader use of the internet than boys, engaging in a wider range of creative and participatory activities online; in particular, there are notable differences in what may be termed 'Web 2.0' activities such as adding comments to a website and posting an online diary or blog. The authors suggest there may well be a link

between these two findings – they argue that it is girls' involvement in social networking that introduces them to these activities.

The idea that girls are becoming more expert and extensive users of the internet than boys is also supported by Ofcom's findings regarding online information literacy. Girls are slightly less trusting than boys of online content and are slightly more likely to make checks on what they find on the internet (Ofcom 2008).

2.4 Cyber-bullying and internet safety

There are of course risks associated with the use of the internet and other communication technologies and these are not evenly distributed between boys and girls. UK Children Go Online (Livingstone and Bober 2005) found that while boys take more risks in their internet use and are more likely to be exposed to inappropriate material, girls are more likely to experience contact risks, such as online bullying, talking to strangers online and meetings with people from the internet.

This is in line with several recent surveys which have found that girls are more likely to have been bullied using ICT than boys. According to the MSN Cyber-bullying report (2006), girls are:

- twice as likely to know someone or several people that have been cyberbullied – over a third (34 per cent) compared to one in six (17 per cent)
- more likely than boys to have been victims of cyberbullying themselves (18 per cent)
- more likely than boys to think cyberbullying is worse than physical bullying (14 per cent)

The Anti-bullying Alliance (Smith et al. 2006) also found that girls were more likely to be cyberbullied than boys. In all cases girls reported a greater degree of victimization than boys but gender differences were statistically significant for phonecall bullying, both inside and outside of school, and for text message bullying outside of school. Girls are also more likely to be cyber-bullies themselves.

2.5 Use of ICT outside school for educational purposes

Whereas boys have greater access to hardware and spend more time using computers outside school for leisure purposes, girls are significantly more likely to use computers for school work than boys – 50 per cent of girls compared with 15 per cent of boys, according to Valentine et al. (2005). This was particularly true of subjects girls enjoy, such as English, history and science. The only subject in which boys were more likely than girls to use a home computer for school work was ICT, a subject boys tend to enjoy more. This suggests that ICT use is more influenced by attitudes towards the subject than attitudes towards technology itself. As with ICT more generally, girls are significantly more likely than boys to say they use the internet for school work (Ofcom 2008). That girls use ICT for educational purposes to a greater extent than boys may be widening the gender attainment gap, as

research has also showed that high levels of leisure use of ICT may be positively associated with a negative impact on educational attainment (Valentine et al. 2005).

Valentine et al. (2005) also found that for both boys and girls, home use of ICT for education is modelled on use within school. As research has shown that girls learn more about ICT at school than boys do (Hayward et al. 2003), the importance of the school's role in enabling girls to make best use of ICT should not be underestimated.

3 Conclusion

It is important to remember that there is as much variation within genders as there is between them. The inconsistent and sometimes contradictory findings of many of the studies cited above points to the fact that gender should be seen not in isolation but in combination with number of factors – socio-economic status, ethnicity, identity, pedagogy and classroom management – which can influence how boys and girls use technology and the impact that use has on them. Nor is it helpful to perpetuate positive or negative stereotypes relating to either gender: it is not true to say technology is engaging and appealing to all boys any more than it is to say technology is unappealing to girls (Littleton et al. 2006).

Overall though it seems that, unlike boys, girls are generally not motivated by the use of technology for its own sake. The stereotypical notion of computers being the domain of males still exists, as does a tendency for the content and design of software to favour boys' interests and preferences. This leads to girls' lack of confidence and perceived lack of ability; hence the lower numbers of girls interested in IT as a career or engaging in more prolific or advanced use of ICT, particularly gaming and programming. However, that is not to say that girls do not enjoy using ICT in their learning and in building and maintaining social networks – indeed they are more proficient in this kind of use, and related creative and participatory activities, than boys. Recent developments in social and collaborative technologies and the shift of emphasis towards the embedding of ICT across school subjects would in fact seem to favour girls more than boys. Even in the traditionally male domain of games, trends in game design have the potential to make games more appealing to and appropriate for girls. This carries with it the risk that ICT will widen the attainment gap between boys and girls rather than narrow it.

A lack of evidence means it is difficult to draw any firm conclusions about the implications of these developments but what we can say with some confidence is that girls rely on schools to teach them about technology more than boys do – it is therefore clear that schools have an important role to play in giving girls access to technology, providing guidance and support, and employing the appropriate pedagogical strategies to enable both boys and girls to use ICT to its full potential.

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