The relatively restricted nature of children’s use of information and communications technologies (ICTs) inside the school setting has long been noted by researchers. With this in mind, this article offers a grounded analysis of drawings collected from 355 primary pupils (years three to six) from five English primary schools depicting desired future forms of school ICT provision. The article contends that the nature and content of these future orientated pictures reflect many of the tensions underlying children’s current engagements with ICTs in school. Specifically the article discusses how the drawings offer valuable insights into the issues underlying pupils’ understandings of ICT and schools, not least: the restrictions of the school as organisation; the oppositional relationship between the ‘work’ of learning in school and the ‘play’ of using digital media at home; the unequal power relations that exist between pupils, schools and teachers. The article concludes that rather than accede to demands for free and unfettered use of game consoles and portable devices in the classroom, schools should instead concentrate on fostering informed dialogues with young people about the potential educational benefits of school ICT use.

Introduction

The disparity between the restricted use of information and communications technology (ICT) within school settings and children’s rather more expansive (and many would argue more exciting) engagement with digital media outside of the classroom has been well documented (Cuban, 2001; Livingstone et al., 2005; Buckingham, 2007). It has been argued that a revitalisation of schools’ technology use is essential if schools are not to experience ‘a legitimacy crisis with kids’ (Kenway & Bullen, 2001). These concerns have been bolstered by stark warnings of a ‘digital disconnect’ appearing among learners accustomed to high levels of ICT use in all aspects of their everyday lives other than in school (Levin & Arafeh, 2002). In this sense Green and
Bigum’s (1993) depiction of tech-savvy young people becoming ‘aliens’ in their classrooms has retained prescience—particularly in light of the increasing popularity of so-called ‘Web 2.0’ applications such as MySpace, YouTube and Wikipedia.

Of course, educational technologists have long sought to develop forms of classroom technology provision which fit better with the needs, values and experiences of young people. During the 1990s, for example, the integration of computer games in the classroom was subject to much attention (see Carr et al., 2006). Recently, considerable interest has been shown in the integration of wiki applications, blogging and social networking into teaching and learning provision (see Selwyn & Grant, 2009). Yet these developments belie a growing sense that educators need to be wary of directly ‘importing’ popular digital practices and artefacts into classrooms in the hope of transforming technology practices within formal education. A number of commentators have warned against attempts to motivate and engage pupils simply through the introduction of consciously ‘trendy’ forms of technology use into schools. As Lankshear and Knoebel (2004) contend, young people’s forms of ICT use should not be transported or co-opted wholesale into the classroom as young people may well ‘resent having their cultural forms (mis)appropriated into schools’. Indeed, some recent studies have suggested that learners do not necessarily expect or even want to use technology in educational settings in the same manner as they do at home (Lohnes & Kinzer, 2007). Many young people remain mindful of the risks, as well as the opportunities, involved in fully ‘opening-up’ ICT into classroom settings and often share adult concerns over issues such as online safety and the variable quality of learning that informal ICT uses can engender (Selwyn, 2006).

Against this background it is beginning to be recognised that there is room to improve educators’ understandings of the needs and wishes of young people regarding the development of school ICT. This follows on, in part, from growing commercial interest in integrating child voice into the research and development process of new technologies (Druin, 1999). There is also a sense that schools stand to gain from consulting with young people regarding their (non)use of ICTs in school. As Comber et al. (2003, p. 38) concluded, ‘schools and homes have more to learn from each other about the ways in which ICT is being used in each context … schools could usefully examine the ways in which ICT is being used in other contexts and whether these have any potential in the school environment’. Despite this recognition, to date most studies have tended to concentrate mainly on practitioner and institutional concerns over the likely pedagogic and organisational changes that potentially ‘disruptive’ ICT uses may entail. Whilst these perspectives are important, there has been a tendency to pay less attention to the views, opinions and ideas of pupils themselves. As the ultimate ‘end users’ of ICT in the classroom, it could be argued that education technologists need to pay more attention to the understandings and ‘life worlds’ of learners (Selwyn, 2000, 2006). Indeed, the need to develop a more learner-centred perspective is now an integral element of the UK government’s stated commitment to developing a more ‘personalised’ education system, with young people positioned as ‘partners in learning’ rather than passive recipients of education provision (Department for Education and Skills [DfES], 2004). In particular there is now increasing
policy emphasis on the notion of facilitating ‘learner voice’—i.e. allowing learners to enter into dialogue and bring about change with regard to their schools and learning. In this respect, schools’ ICT would appear to be an ideal area for such dialogue to be enabled and encouraged (see Shields, 2003; Rudd et al., 2006).

The study

The study that this article derives from sought to investigate how primary pupils in Key Stage 2 (i.e. years three to six) thought that technology in their schools could be improved in the future. Initial stages of the study investigated primary pupils’ current use of ICTs inside and outside the school context—one main finding being that pupils felt limited by school restrictions on technology access and use. The full results of these stages of the investigation can be found in Selwyn et al. (2009). The present article focuses on the future-orientated stages of the investigation, as expressed through the following specific research questions:

- What types of ICTs do pupils imagine will be developed in the near future, and what forms of learning could they lead to?
- What characteristics of current ICTs would learners like to see continued, and what new characteristics would they like to see developed?
- What changes to ICT provision and practices within schools do pupils see as desirable?

Whilst other elements of the study utilised survey data, focus-group interviews, pupil-led investigations and online content creation tasks to address the above research questions, the present article reports on the use of children’s drawings as a means of discerning their perceptions about future classroom use of ICTs.

Methods

Drawing as a means of researching children’s opinions and understandings

The need to elicit the views, opinions and understandings of learners in a variety of ways is now a growing methodological concern, with many researchers utilising qualitative data collection techniques of narrative inquiry (see Clandinin & Connelly, 1993). This turn towards narrative inquiry emerged from researchers working in psychology, clinical medicine, sociology, literature and cultural studies, all seeking to examine how and why stories are told, and therefore aiming to ‘see the world through the eyes of others’ (Riley & Howe, 2005, p. 227). In the case of researching children, the narrative research tradition is felt particularly to offer researchers a means of ‘showing respect for, and valuing of, the person’s individual voice and meanings’ (Bennett, 2008, p. 14). Of late, use of popular narrative approaches such as focus-group interviews, story writing and dramatic performance has been complemented by moves towards the use of visual data and modes of analysis in social science research, with a growing interest in incorporating photography, videos, objects and drawings
into methods of data collection. In particular, there has been renewed interest in the
use of drawings as an especially appropriate means of allowing children to express
themselves within the research process. As Cox (2005, p. 115) concludes, ‘rather
than being developmentally determined, the way children configure their drawings is
purposeful; children can recognise the power of drawing to represent, and that they
themselves can be in control of this’.

Whilst the study of children’s drawings is associated most readily with study of
personality and cognitive development (e.g. Cox, 1981; Cox & Parkin, 1986), the use
of drawings as an ‘indirect procedure’ of data collection is fast growing as a means of
sociological inquiry (Harrison et al., 2007). According to Barraza (1999, p. 49):

drawing techniques provide a relatively easy way to gather social information from and
about children. The use of drawings for evaluation purposes is a powerful tool, since most
children tend to enjoy drawing without showing any sign of tension. While many children
dislike answering questions, drawing tests can be completed quickly, easily and in an
enjoyable way. Drawings avoid linguistic barriers and enable comparisons between groups
of different languages and abilities … children’s drawings provide a ‘window’ into their
thoughts and feelings.

As Barraza argues, drawing can be seen as an inherently child-centred procedure,
with the non-verbal nature of drawings freeing the child to express emotions and
attitudes that would be otherwise difficult to assess (see also Fury et al., 1997;
MacPhail & Kinchin, 2004). Although the data collected through drawings are
constrained by the skill of the artist and can only reflect values that can be represented
graphically, researchers have nevertheless been enthused by ‘children’s extraordinary
skills in making meaning through the affordances of drawing’ (Mavers, 2003, p. 20).
Moreover the use of drawing as a method of data collection is seen to allow children
free choice of inclusion rather than be prompted by the researcher’s frame of refer-
ence, offering those children lacking in literacy skills the chance to express themselves
(MacPhail & Kinchin, 2004).

Thus the use of drawings is now recognised as a valuable method for assessing
children’s attitudes, needs, values, preferences and conflicts (Fury et al., 1997). Over
the past 20 years drawing-based studies have been conducted spanning social issues
such as children’s understanding of family relationships, death and afterlife, environ-
mental issues, experiences of war and migration, understandings of science, and
perceptions of old age (Tamm & Granqvist, 1995; Fury et al., 1997; Rahm &
Charbonneau, 1997; Jolley & Vulic-Prtoric, 2001; Yang & Chen, 2002; Cavignoli,
2005; Driessnack, 2006; Buldu, 2006; Chaixawat & Jezewski, 2006; Panagiotaki et
al., 2006; Van Blerk & Ansell, 2006; Leon et al., 2007; Sagara-Rosemeyer & Davies,
2007). Drawing-based methods of data collection have also been used to investigate
educational issues such as teacher–child relationships, bullying experiences, views of
learning difficulties and behaviour problems, experiences of the journey to school,
views of the classroom environment, and perceptions of sport education (Matthews,
1984; Andersson, 1995; Sandow, 1997; Bosacki et al., 2006; Mowling et al., 2006;
Harrison et al., 2007). A small number of researchers have used drawings to investi-
gate children’s views of technology, such as studies eliciting children’s drawings of
computer users (Martin et al., 1992; Brosnan, 1999), sketches of desired ICT classroom layouts (Monahan, 2008) and the use of mind maps of ICT use at home and at school (Mavers, 2003).

Data collection and analysis

In order to address the research questions outlined above, a four-page questionnaire was developed to investigate pupils’ engagement with and understandings of ICT in school and the home. Items were included to cover demographic information, details of ICT access and use, and pupils’ opinions on improving ICT at school. A final section of the questionnaire invited pupils to respond to the theme of ‘what do you wish that you could use ICTs for in school in the future?’ A 10 cm by 20 cm blank rectangle was provided for answers, with pupils invited to ‘Write your ideas in the box (or draw a picture if you have the time or it is easier to explain that way)’.

The research was conducted in five primary schools in the South-East and West Midlands regions of England, selected to force variation in terms of pupils’ gender, ethnicity, geo-demographic and socio-economic factors. These schools included two inner-city schools, two suburban schools and one school in a medium/small town. Within these five settings, questionnaires were administered to and received from a sample of 612 pupils aged between seven and 11 years old (mean = 9.1, standard deviation [SD] = 1.1). Questionnaires were administered by teachers in class-time during the autumn term of the 2007/2008 academic year. Of the 612 respondents, 58% (n = 355) provided a drawn response to the final section of the questionnaire. As can be seen in Table 1, drawings were more likely to be offered by pupils who were younger and in schools A and B.

<table>
<thead>
<tr>
<th>School</th>
<th>Completed questionnaire (n)</th>
<th>Offering drawing (n)</th>
<th>Offering drawing (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: London inner city</td>
<td>123</td>
<td>93</td>
<td>76</td>
</tr>
<tr>
<td>B: London suburbs</td>
<td>105</td>
<td>71</td>
<td>68</td>
</tr>
<tr>
<td>C: West Midlands small town</td>
<td>113</td>
<td>48</td>
<td>43</td>
</tr>
<tr>
<td>D: London suburbs</td>
<td>169</td>
<td>89</td>
<td>53</td>
</tr>
<tr>
<td>E: London inner city</td>
<td>102</td>
<td>54</td>
<td>53</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gender</th>
<th>Completed questionnaire (n)</th>
<th>Offering drawing (n)</th>
<th>Offering drawing (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>327</td>
<td>198</td>
<td>61</td>
</tr>
<tr>
<td>Female</td>
<td>285</td>
<td>157</td>
<td>55</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year group</th>
<th>Completed questionnaire (n)</th>
<th>Offering drawing (n)</th>
<th>Offering drawing (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three</td>
<td>83</td>
<td>50</td>
<td>60</td>
</tr>
<tr>
<td>Four</td>
<td>109</td>
<td>69</td>
<td>63</td>
</tr>
<tr>
<td>Five</td>
<td>190</td>
<td>133</td>
<td>70</td>
</tr>
<tr>
<td>Six</td>
<td>230</td>
<td>103</td>
<td>45</td>
</tr>
</tbody>
</table>
In terms of data analysis, it was our contention that the pictorial data collected from the questionnaires were best analysed in a relatively straightforward manner. As MacPhail and Kinchin (2004, p. 89) note, ‘there is support for viewing drawings as “group data”, expressing a group’s cultural patterns rather than viewing drawings as conveying attitudes of an individual’. Consequently, the focus of attention in our analysis was on ‘documenting patterns across a sample of drawings rather than attempting to draw conclusions about individuals based on their drawing’ (MacPhail & Kinchin, 2004, p. 89). Following this lead, a ‘content/item analysis’ was employed, with a focus on examining the overall holistic impression of the drawing rather than the picture-making process itself (Di Leo, 1983). Under this approach a coding list was used to define and objectify content, with the content of all the drawings then analysed to inform a holistic view of each drawing.

A constant comparison technique was employed during our analysis of the drawings (Glaser & Strauss, 1967). This initially involved ‘reading’ all the pictures to gain an overall sense of the data. All the data were then read again and ‘open coded’ to produce an initial code list until, in the opinion of the researchers, analysis had reached theoretical saturation. From this basis the data were then selectively coded in terms of categories identified with the initial code list directly related to the research questions outlined above. Three researchers (one sociologist, one graphic design specialist and one media and youth specialist) independently coded all the drawings, with a code attributed to a drawing only where all three coders concurred (the coding decisions of the three coders were correlated at a level of \( r = .95 \)).

**Results**

Four main themes emerged from our analysis of the pupils’ pictures, namely:

- **artefacts**: i.e. the hardware and software portrayed in the pictures;
- **actors**: i.e. the people portrayed in the pictures as being involved with ICT use;
- **activities**: i.e. the activities, actions and affordances which ICTs were being used for;
- **aspirations**: i.e. whether the pictures displayed a future-orientated or present-orientated portrayal of ICT use.

These themes are now presented in the following sections.

*(i) Artefacts*

Children were most likely to respond to the question of depicting what they wished that they could use ICTs for in school in the future by drawing hardware artefacts—most notably drawings of games consoles, screens and controllers or the standard desktop computer setup of keyboard, mouse and monitor (see Figure 1). Indeed, desktop computers featured in 40% \((n = 143)\) of the drawings, accompanied by games machines \((41\%, n = 144)\) and laptop computers \((11\%, n = 40)\). Older children were more likely to also depict portable leisure technologies—with drawings of mobile
telephones \((n = 98)\), digital cameras \((n = 48)\), mp3 players \((n = 32)\), and other personal digital devices being featured in these drawings (see Figure 2). Games machines were especially prevalent in drawings produced by boys \((n = 102)\) as opposed to girls \((n = 42)\). Conversely, girls were more likely to depict digital cameras \((n = 30)\) than boys \((n = 18)\). As can be seen in some of these pictures, commercial branding (such as logos for PS2, PSP, Sony Sure Shot and so on) was apparent in 24% \((n = 84)\) of pictures of hardware artefacts, especially in the drawings produced by older pupils—i.e. those in year five \((n = 26)\) and year six \((n = 29)\).

Figure 1. Desktop computer and mouse (female, year three, respondent #121)

Figure 2. Technology assemblages. Top: female, year six, #532; bottom: female, year six, #26
A final category of what were classed as ‘other’ technologies featured in 16% \((n = 56)\) of the drawings. These other technologies included a variety of existing ICTs such as whiteboards, PDAs (personal digital assistants/handheld computers) and so on, but in seven cases included more ‘futuristic’ technologies such as spaceships, tooth-chips, virtual reality helmets and so on (see Figure 3). Only in these instances were noticeably future-orientated forms of technology being imagined.

Children were far less likely to depict ICTs in the form of software artefacts (apparent in 16% of drawings, \(n = 58\)). This is perhaps unsurprising given the relative difficulty of representing software graphically. When drawn, software artefacts most often took the form of nebulous portrayals of ‘the Internet’ \((n = 23)\) or else specific web applications such as YouTube and Miniclip (see Figures 4 and 5). Computer-mediated communication applications (e.g. MSN, email, chat) were featured in 11 drawings, search engines (Google) in three, and social networking (Facebook, Bebo, Habbo) in four pictures. Noticeable commercial brand names of

![Figure 3. Futuristic artefacts. Top: ‘computer helmet’ (male, year six, #537); bottom: ‘alien spaceship and mosque’ (male, year four, #122)](image)
these applications was evident in 20 of these drawings (18 of which were drawn by children in years five and six).

(ii) Actors

A second theme emerging from the drawings was the actors portrayed as being involved with children’s ICT use. Significantly, 67% \((n = 237)\) of the drawings featured no people at all—a feature prevalent especially in the drawings of older children, with only one-quarter of drawings from year six pupils featuring a person as opposed to over half of drawings from year five pupils. Conversely, 24% \((n = 83)\) of the pictures featured one child present, most often interacting with ICT, such as sitting down in front of a computer or playing on a games console. Only 7% \((n = 24)\) of children drew more than one child in their pictures. Significantly, adults were
N. Selwyn et al. included in only 11 drawings, where discernible usually in the role of the teacher. This is illustrated in Figure 6, where a headscarf-clad teacher sits on a chair and is seen to give permission for a child to use an interactive smart board. Non-human actors were featured in four drawings. These non-humans included robots, space aliens, and other futuristic entities (see Figure 7).

Figure 6. ‘You can use the interactive smart board’ (female, year four, #123)

Figure 7. ‘Do my work now or else’ (male, year five, #282)

(iii) Activities

Alongside actors and artefacts, 27% \( (n = 95) \) of the children’s drawings featured discernible activities taking place via the technology. These activities took three main forms. The most prevalent activity was one of play and other child-directed leisure
activities—illustrated in Figure 8 where games-playing children are accompanied by the exhortation to ‘do what you want’. Indeed, notions of play, free activity and other leisure pursuits featured in 49 drawings, most notably amongst boys. The portrayal of other activities was rarer—for instance, only 18 drawings portrayed communication uses, and no pictures featured noticeably creative or collaborative activities.

Acts of learning and other educational activities featured in 42 drawings—most likely to be depicted by boys and those children in older year groups. Some of these pictures featured ICTs as supplementing formal education provision, as can be seen in Figure 9, of computers ‘help[ing] us learn if we don’t really understand’. Less prevalent were more child-centred (and one could argue progressive) notions of technology-based learning. Whilst not completely clear, Figure 10 suggests a sense of unfettered technology use which, as the child posits, ‘maybe … could be educational?’ In this picture a games console is seemingly flying through the air accompanied by exclamations of ‘radical’, ‘education’, ‘cool’ and ‘bang’. To the right-hand side of the picture is a figure with their hands in the air saying, ‘I’m the teacher’. A final activity portrayed in two pictures was perhaps even more surprising—that of children choosing actively not to make use of ICT in school. As Figure 11 shows, these pupils took the opportunity to depict their resistance to
Figure 10. ‘Radical … education … cool … bang … I’m the teacher’ (male, year six, #41)

Figure 11. Technology rejection. Top: ‘You shouldn’t use computers at school’ (female, year five, #590); bottom: ‘I don’t think it’s a good idea’ (male, year four, #665)
using ICTs in school, seemingly based on the physical and/or cognitive strain of engaging with computers.

(ii) **Aspirations**

A final theme emerging from our data analysis was how the ‘future’ was portrayed in these drawings. As Figures 1–11 suggest, the majority of pictures presented what could be said to be realistic (i.e. presently-orientated) portrayals of either home ICT use in the school setting or, less imaginatively, presently-orientated portrayals of slightly realigned school ICT use. Indeed, certainly the most prevalent views of ‘the future’ were the portrayals of home ICT artefacts and activities being brought into the school setting. This is illustrated in Figure 12 where a row of six classroom computers is augmented by three popular games consoles (a PS2, Wii and Xbox 360).

It was notable that many of these suggestions for change adopted an almost pleading tone and were often qualified by an acknowledgement and (begrudging) acceptance of school restrictions and regulations. This was evident, for example, in the labels that children attached to their pictures outlining a range of conditions to their visions for future change, e.g. ‘games at playtime instead of going outside at playtime’ (male, year five, #269), ‘iPod then you give it to the teacher and she looks after it till spesail time [sic]’ (female, year six, #548), ‘play games if the whole class has had a stressful day’ (female, year six, #212) and ‘ten minutes of time on the computer to do whatever we want as long as its safe’ (female, year five, #269) (see also provisos for use ‘if good’, ‘if you are star of the week’, and only during ‘free time’ in Figure 13).

Only nine pictures depicted what could be said to be wishful (future-orientated) portrayals of ICT use—six of which were drawn by girls. These pictures are exemplified in Figure 14, which features a variety of future-oriented products and practices. Here a number of miniaturised personal technologies are envisaged—from ‘telly sunglasses to watch TV’, nail-based gems which are ‘electronic cameras to keep girls safe’ and a corresponding ‘camera earring for boys’. Perhaps most innovative is the tooth-mounted voice-controlled mobile telephone and the zero-gravity bubble-enclosed bouncy castle.

Figure 12. Home artefacts inserted into a school environment (female, year five, #571)
I think we should have 10 mins of time on the computer to do whatever we want as long as it's safe eg club penguin, neopets and habbo hotel.

Figure 13. Visions of change within the confines of the school environment. Top: (female, year five, #269); bottom: (female, year six, #216)

Figure 14. Futuristic artefacts in a personalised/non-school environment (female, year six, #551)
Discussion

These data certainly demonstrate the value of using drawings to enable student expression of their understandings, opinions and experiences of ICT—supporting Mavers’ (2003, p. 20) assertion that ‘the potentialities of drawing may enable new things to be communicated, or the “same” things to be expressed in a different way’. The children in our study were able to produce drawings about ICTs and schools which were emotionally expressive (Bonoti & Misailidi, 2006), as well as conveying quite complex notions about ICTs and the school setting. Of course, our data must be seen in light of the context in which the drawing occurred (Rose et al., 2006). In this sense the elicitation of drawings from a questionnaire administered in school will undoubtedly have shaped pupil responses. Yet within the confines of the data collection process, we would contend that the drawings presented in this article offer some valuable insights into ICTs, schools and the life world of the primary pupil.

In terms of our stated research questions it was notable that children’s perceptions of future forms of education were remarkably mundane, rooted in the present-day context of the classroom and confined by the structures of the school. This sits in stark contrast to some researchers’ predictions of ‘social robots’ ‘enrich[ing] the classroom environment by demonstrating social skills and good behaviour’ (Topping, 2007, n.p.). Indeed, pupils’ visions for change in school ICT provision mostly concerned the direct importing of ‘home’ ICT devices and practices into the classroom, with little sense of a strong desire for change regarding learning with ICTs. For instance, in terms of what types of ICTs pupils imagined would be developed in the near future and what forms of learning they could lead to, few new developments were offered aside from the occasional drawing of a zero-gravity bouncy castle or virtual reality helmet. Given the persistence of the PC in schools’ ICT provision, then envisaging the near future in terms of the standard desktop computer setup of keyboard, mouse and monitor is perhaps a sensible assumption.

In the drawings where children were depicting technology-based learning, then ICTs were portrayed as being used to help children when confused, relieve children from the stress of learning in the classroom or lead to incidental learning (although these latter suggestions were often offered as a tentative justification; as the author of the ‘radical education’ drawing in Figure 10 conjectured, ‘maybe it could be educational?’)

In terms of the desired characteristics of ICTs, children’s drawings were concerned primarily with issues of play, fun, portability and the personal ownership of hardware devices. These ambitions were seen to be best realised through the importing of children’s own home technologies into the school, most notably games consoles, and for older children mobile phones, digital cameras and mp3 players—reflecting the changing nature of ICT engagement across the seven to 11 age range. Finally, in terms of desired changes to ICT provision and practices within schools, the majority of drawings which advocated change depicted the removal (or at least relaxation) of restrictions of use imposed by the school—as a few pictures put it, ‘let us do what we
want’. Significantly, letting pupils ‘do what they want’ most often involved the playing of games or passive ‘going on’ websites such as YouTube or Miniclip. There were few, if any, portrayals of more communicative, creative or collaborative ICT practices associated with Web 2.0 applications.

Despite the slightly prosaic nature of some of the responses, it would be unwise to dismiss these drawings as uninformed and unimaginative. Indeed, we would contend that these drawings of a desired future reflect many of the tensions underlying children’s current engagements with ICTs in school. Specifically, we would contend that the drawings provide a telling insight into the issues underlying pupils’ understandings of ICT and schools. In particular many of the drawings reflect clearly the restrictions of the schools and the (relative) freedoms of the home, as well as the oppositional relationship between the ‘work’ of learning in school and the ‘play’ of using digital media at home. A further theme running throughout many of the drawings is the unequal power relations that exist between pupils, the schools, teachers, and their homes. In all these instances, the drawings provide stark depictions of how ICTs are shaped by the social and pedagogic functions of primary schools as institutions, not least the organisational imperatives that they must follow such as delivering National Curriculum content, timetabling, filtering content and so on (Buckingham, 2007). In this sense, we can see how children’s aspirations for school ICT provision are influenced by the organisational contexts of schools (in terms of space, power and interaction) in which they are located (Selwyn, 2003).

Against this background it could be argued that digital artefacts (and associated activities) such as games consoles, mobile telephones and mp3 players act as modest totems of personalised resistance for children—albeit ones which children are well aware cannot transgress easily into the school environment. Thus it is understandable that the main educational affordance of digital media for these primary pupils is not seen to be associated with learning per se, but rather the ability to imagine a means of transcending, escaping or even just surviving the undesirable elements of the school context. As Hutchby (2001, p. 444) observes, ‘affordances are functional and relational aspects which frame, while not determining, the possibilities for agentic action in relation to an object. In this way, technologies can be understood as artefacts which may be both shaped by and shaping of the practices humans use in interaction with, around and through them’. In this sense, our drawings conveyed strongly the notion of digital media as a site through which children could imagine some form of increased agency within the confines of formal education. Whilst perhaps unsurprising, this conclusion does have some serious implications for those currently seeking to consult with young people with regard to future forms of ICT provision which are of educational and pedagogic value.

Indeed, whereas a small number of drawings did offer futuristic and learning-orientated scenarios for change, it was notable that the majority of children were either reluctant or unable to imagine any alternative forms of educational ICT provision other than the unrestricted and unsanctioned importing of home ICT artefacts and activities into the school. It could be that children’s reluctance or inability to imagine future forms of educational ICT provision simply confirms Dennis’s (1966)
‘familiarity hypothesis’ that children will reflect their known and/or experienced environment in their drawings. It could be that most children in this age group are unable to conceptualise change in ways beyond their immediate experience. Conversely, the lack of future-orientated ‘imagineering’ in our data could indicate a general indifference to schooling, or children’s lack of perception of themselves as learners. Yet these possibilities notwithstanding, we return to the contention that these data also reflect the fact that ‘ICT-savvy’ children are also profoundly ‘school-savvy’ children. We have seen from the drawings in this article how many children understand that ICTs are regulated within school, as are most aspects of their lives. As such, unsatisfactory ICT use is merely one element of the many restrictive demands that school makes on most aspects of children’s day-to-day lives—from food and clothing, through to when and where they can do things (Woods, 1990). Thus, we would contend that the aversion to future-scoping reflected in our drawings is perhaps rooted in the regulated nature of the school environment and the pervasive effect that school structures have on the pupil’s life world.

Of course, this somewhat bleak conclusion offers little encouragement for those seeking to involve learners’ inputs in the participatory design and development of future forms of ICT. Clearly, the drawings in our study offer few suggestions for the development of meaningful and educationally acceptable future forms of educational ICT. Indeed the drawings illustrate comprehensively the impasse between school and home that children and ICTs are currently caught within. Thus we would suggest that rather than either rejecting or acceding to pupil demands to ‘let us do what we want’, schools and educationalists instead concentrate on fostering informed dialogues with—and between—young people about the perceived potential educational benefits of ICT. The rationale for this suggestion derives from the overriding sense throughout our study that there is little enthusiasm or excitement at present amongst children about ICT uses related to formal education. This suggests to us that there is a clear need to first enthuse children about learning, and about learning with ICTs before any agenda for change is decided upon. Indeed, if the education technology community is convinced of the benefits of ICTs in school settings, then there is a pressing need to demonstrate to children that ICT-based learning can be engaging, and to explore ways of creating pupil demand. Without some effort to ‘sell’ ICT-based learning in this way it is unlikely that young people will force any ‘bottom-up’ change in schools’ uses of ICTs. Children clearly have an important role to play in the participatory design and development of future forms of empowering school ICT use, but it would seem that the lead should be taken by schools and others in the education community if such meaningful change is to be initiated.

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