

## SECTION 1: INTRODUCTION

'Come back in two years!' is a quote from a pre-school practitioner as she waved goodbye at the end of a research visit to her playgroup. The implied continuation of the sentence was '... and then we'll have something to show you'. Like most of our other interviewees, she was enthusiastic about information and communications technologies (ICTs) and had a strong belief in their value, but she was aware that the situation in her playgroup fell short of some undefined notion of 'best practice'. She felt confident that we would see a great transformation if we were to return in two years' time and we often heard comments from other practitioners such as 'it's just a matter of time'. Most staff do not have enough experience to feel confident about integrating ICT into teaching and learning activities, even though they may feel confident about the mechanics of using ICT.

Our review of the literature on the use of ICT in pre-school education (Stephen and Plowman, 2002) pointed to the paucity of good evidence-based writing on the subject. Indeed, despite claims about the powerful contribution that ICT could make to young children's learning and development we were drawn to the conclusion that there were more questions than answers on the nature of that contribution. In the particular context of children in pre-school educational settings in Scotland we know little about:

- the ICT resources available across the sectors
- practitioners' perspectives on the role of ICT in the pre-school curriculum and the place of ICT in their planning for children's learning
- the way in which children react to and interact with the technology available in the playroom.

In this study we have begun to address the lack of practice-based evidence by observing playroom resources and activities and gathering the perspectives of staff and children in seven carefully selected pre-school settings in Scotland. This practice-based evidence complements the focus on policy imperatives and the issues arising from the literature that are shaping the development of a National Strategy for ICT in pre-school settings.

The modest scale of this research project limits the questions that it can address and we do not claim that it represents an accurate portrayal of the entire pre-school sector in Scotland. Nevertheless, we can offer some evidence on the experience of adults and children as they use ICT together in the playroom. In this report we aim to:

- describe the ICT resources available in the settings we visited
- describe the ways in which the available resources were used
- discuss ways in which the children engaged with ICT
- consider the role of ICT in the educational provision offered across the settings.

### ICT in the pre-school curriculum

The pre-school curriculum in Scotland, *Curriculum Framework for Children 3 to 5* (Scottish CCC, 1999), does not make detailed reference to ICT. Within the curriculum area 'Knowledge and understanding of the world' it states:

*The children's environment is one in which technology is important in their everyday lives. As children use blocks, put on a warm jumper, look through a magnifying glass, clamber on to a climbing frame, use a computer or travel by train, they become aware of the everyday uses of technology in the home, in transport, in communication and in leisure. (p. 23)*

This is followed by guidance that pre-school children should learn to 'become aware of everyday uses of technology and use these appropriately'. The examples of the kinds of technology with which children should become familiar include scissors, waterproof clothing and a fridge rather than items that are typically thought of as ICT.

In terms of education in England, the foundation stage was introduced in September 2000 as the two-year period before children attend school. There are a number of references to ICT in the guidance documents and one explicit aim of the foundation stage curriculum is that children should 'find out about and identify the uses of everyday technology and use information and communications technology and programmable toys to support their learning' (QCA, 2000).

### Defining ICT

ICT is often narrowly construed as consisting mainly of desktop computers. However, the range of technologies available now and in the near future provides opportunities for a more radical transformation of teaching and learning relationships and activities than desktop computers alone would provide. The British Educational Communications and Technology Agency lists a number of products available to young children that incorporate some aspect of ICT. These include activity centres, musical keyboards, tape recorders, programmable and radio-controlled toys as well as everyday items such as remote controls, telephones, fax machines, televisions and computers (Becta, 2001).

If we define ICT strictly in terms of information and communications technologies then not all of these products exhibit the functionality to fulfil these requirements. Many of the toys used in playrooms or at home are electronic but the level of information or communication created by flashing lights or the production of sounds such as animal noises is fairly minimal by adults' standards. But interactivity is also a key characteristic of these technologies and such toys can serve to familiarise children with a concept of operational interactivity in which pushing a button or picture produces a response. Items such as tape recorders, karaoke machines, electronic keyboards and cash registers also contribute to the child's repertoire of interactions and this process of familiarisation.

This range of toys and devices is part of the move towards pervasive or ubiquitous computing in which the technology blends into the environment and is not necessarily visible. In order to accommodate such developments and the emphasis on ‘everyday’ uses of technology in the Scottish and English curriculum documents we have adopted a **broad definition of ICT** that encompasses the types of objects outlined above as well as including digital cameras, video recorders and video cameras. However, practitioners define ICT more narrowly as computers (desktop computers being the default, but with some acknowledgement of laptop computers) and printers. This view is so pervasive that much of this report uses the term ICT to mean computers and associated peripherals, even though we are aware of the limitations of this definition.

### **Structure of the report**

The aim of this report is to describe the ICT experiences of children and adults in the playrooms that we visited. The next section sets out the research design and the way in which the data were collected. The four sections that follow focus on playroom engagement with the computers available. We look at the kind of ICT provision that we observed in our seven case study settings (Section 3); describe the ways in which children and practitioners engaged with the ICT resources available (Section 4); discuss the ways in which practitioners thought about, planned for and recorded the use of ICT as a support for learning (Section 5) and examine individual differences in computer use (Section 6). Section 7 discusses some of the issues involved in the management of ICT and the final section presents some conclusions.

In the sections that follow we use quotations from recorded interviews with adults and our conversations with children to illustrate their perspectives.<sup>1</sup> In addition, extracts from our observation records and conversations with practitioners are included in shaded boxes to illustrate and exemplify our commentary.

The implications for future provision and practice in pre-school settings in Scotland, based on both the literature review and the study reported here, will be addressed more fully in a later report.

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<sup>1</sup> All references to individuals use pseudonyms.

## References

Becta, *Foundation Stage Education and ICT* (Information sheet), Becta (British Educational Communications and Technology Agency) website, 2001. Accessed on 16 May 2003.

<http://www.becta.org.uk/technology/infosheets/html/foundationstage.html>

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