

Adults and children at the computer in the Nursery

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In the Sunday Times recently (Leake and Robbins 2001) a researcher in Early Years, Kathy Sylva was reported as expressing disquiet that computers could restrict the development of creativity with young children. A key finding in her research had to do with toys (including computers) being used as a distraction:

There is a complex relationship between children's progress, the type of toys they are given and the time parents spend on them. When they have a large number of toys there seems to be a distraction element, and when children are distracted they do not learn or play well.

The issue is the quality of attention brought to the 'play' activity. If children have strong relationships with responsive adults their attention and persistence in tasks is greater. In our study we looked at the *joint attention* of children and adults at the computer. This is a long-term study at a nursery centre in the West Green area of Tottenham in London, which is an area of great social mix. It is an area where many children receive free school meals and where there is a rapid turnover of families moving in and out. It is a multicultural, multilingual neighbourhood with many refugee and asylum seeking families.

When two laptop computers were introduced into the Woodlands Park Nursery Centre the purpose was to allow parents to take home the computers to use with their children as an aid to their learning. We aimed to redress some of the disadvantage in our inner city community, supported by evidence of literacy gains in the Docklands Project in East London:

community and parental involvement in the schooling of inner-city children is an important factor in raising standards of achievement.

In talk about educational computing there is sometimes the impression that a new generation can be inducted into the 'technological revolution' without reference to their parents. We thought that a more powerful model of learning is one in which there are intergenerational partners.

The two laptops were provided by Research Machines and the report on the Centre's experience reflected on the software used as well as on the parent-child interaction.

The computer is ideal for adult/child dialogue as the screen makes for shared ownership. There are two stages in the learning: the first when parents or centre staff use the computer with the children, and the second the way the children move on in their learning, scaffolded by those features of computer programs which provide feedback and reinforcement.

Teacher's observations

The introduction of the two new laptops into our early childhood setting involved as many of the interested adults as possible. One of the teachers in the nursery did a series of observations of young children's behaviours at the stand-alone computers which already existed in the classrooms. These observations revealed the children's attentiveness and cognitive advances, that playing at the computer had not been 'random' time-filling, but was consistent with the learning promoted by other Centre activities. This teacher writes:

Some staff feel very negative about it, that there are some children just sitting round watching and others stay on the computer for too long. But when I looked more closely, I found that lots of the children who were watching were learning too. P ... spent a long time watching two children pointing to the words in *Just Grandma and Me*, and then later I saw him matching the words on the screen to what he was reading with the computer. Another child who has Down's Syndrome was ordering objects by size on another program, even though some staff felt he was randomly pressing the keys. I saw lots of children making decisions, talking about their choices and learning actively.

The literacy class

In our setting there was already in place a literacy class for parents and this was to be the vehicle for the introduction of the new computers; the parents in the literacy class were learning at their own level about the English language and they were also learning how to support children in class.

The parents realised that they wanted computer skills both for themselves and so that they could use the computers with the children at home. They did not want to be seen as helpless with the technology. Margaret Lally writes:

(We) have increasingly recognised the need for children to see adults using their skills and knowledge.

Over the course of the year, one parent in our Centre became very confident in her own computer skills:

Actually we only took it [the laptop] home once or twice; since then I've [acquired] a computer myself. Having one myself gives me more opportunity for myself and also for the children to benefit from being able to use the computer.

..... we had a slight windfall on the lottery so we decided to, we had been thinking about it for a while, because his older brother uses computers at school and J.... uses computers here and life,..... as life goes on, a lot of it will be computerised. I feel that by having a computer at home you have more opportunity to be able to do things...

Playing with the computers at home

This parent shows a great awareness of the learning of her children. She had had very little schooling herself and had gained her skills only when she joined the Literacy group at the Nursery. In gaining her literacy skills she had reflected on her own learning processes. As a result when she comments on how her children use the computer she is observant of detail which exemplifies her son's learning, details like identification of initial letters. She had been through these stages herself; now she could observe them in her children. The following quotation shows how the family members interact in this learning; in this case they were using a commercial program (*Barney*):

Behind the clouds, it shows you a word behind the clouds and then an umbrella on the beach, say, and underneath it there'll be something like a pig or something, underneath the thing, and to start off with at level one it will show you the letters and you have to match them. And he'll pick the letters out... it'll show you the letter then he's got three different letters to choose from.. so he matches them...

He matches the letters then once he's done that.. now he can actually do it without seeing the letters first so he knows some of his alphabet. He's only four but he knows some of his alphabet; that's a lot to do with his older brother because he'll encourage him.

Her son also plays some of the school computer programs with his mother. She is confident enough to use the program in a playful way; they are involved in the sequencing game of dressing a teddy bear (*My World*):

We played Dress Teddy and instead of putting them (the items of clothing) in the right places I put them in the wrong places and J. said, 'No, that's not right, silly Mummy' and he put it in the right place and I thought, 'That game has encouraged him' because J.'s poor co-ordination with his pen and paper skills . . . and for J. to use the computer and to dress Teddy for himself is quite difficult for him because his concentration is not very good as well, so for him to, sort of, spend 10 minutes on something like that is really good.

Another parent's report shows how once children become familiar with 'talking books', they start to make choices about which page they want to start with and whether they want to hear the story or interact with it. The family is bilingual in Punjabi and English and her son is four and a half.

Mother: *He listened and changed the page as well. [the 'talking book' was Grandma and Me]*

Interviewer: *...and could he read some of the words as well?*

Mother: *Yes, yes, repeated them, not properly but some words he repeated*

Interviewer: *Which words are the ones he repeated?*

Mother: *...like 'mum's going to a beach'*

Interviewer: *So words like 'beach'...*

Mother: *... 'beach' and 'tree' and 'sand'. He enjoys that story.*

This child is taking the opportunity to make choices and experiment. This child also used the computer at home with his brothers and cousins in a way that was conditioned by their more adult expectations of the technology. The family felt that it was a tool to use for introducing the four year old to learning tasks. They used it to give him an advantage:

Interviewer: *So how much did W.... use the computer? What did he do with it?*

Mother: *Read the story and typewriter as well.. write name and some words in English like 'book' and write a letter as well.*

Interviewer: *So he knows his letters and when he got the computer he knew what the letters were on the computer?*

Mother: *He knows alphabetic, A to Z so he knows how to spell little words like 'school' so like typewriter he print those words. I tell him like this when the typewriter is on, spell him 'look', spell him 'book', little bit name of sisters, name of M..., name of father, he knows to spell.*

Conclusion

The parents are now moving on to gain initial computing qualifications for themselves and they are more

confident in playing with their children at home rather than leaving the computers in the hands of others with expertise. The laptops have now become a feature of the exchange between parents and the Nursery.

Our interest in the possible impact of using computers was originally given great impetus by the findings of the New Zealand Council for Educational Research's Competent Children Project (1996, 1998). *Six Years Old and Competent* makes a clear statement on the value of computers to children at the age of five:

Regardless of family income, having a computer at 5 made a difference for scores on mathematics and invented spelling at age 6 – particularly for children in the lowest income families. Having a computer at age 5 also made a small difference for curiosity and individual responsibility, and an even smaller one for social skills. Once again, this shows the importance of having a resource in the pre-school years. Computer ownership at age 5 continues to make a difference after the child starts school.

It is this advantage that we hoped to give the children of Woodlands Park Nursery Centre.

References

- Leake J, Robbins T (2001) Children Play Less the More Toys they Get. *Sunday Times*, News section, 25 February. (Kathy Sylva is Professor of Educational Psychology at Oxford University.)
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- Lally M (1991) *The Nursery Teacher in Action*. Paul Chapman

The program *My World* can be obtained from TAG and also *Grandma and Me* which is part of the Living Books, Broederbund series. *Barney* was a commercially produced toy with a computer program that could be obtained through toy stores.