He had always advocated the use of one computer in a classroom, he said, but with the advent of 32 bit technology new horizons had been opened up for children in the classroom. Desk top publishing software had created opportunities for children to "achieve something worthwhile", and this required time. "A room full of computers" he said, would give children the time needed to produce material of quality.

The new 32 bit technology also meant a change in direction for his software company. They decided to develop material which could have a much wider application, could be used by a broad age range both within and outside education. Craft Shop for the Archimedes computer was their first piece of "creative application" software. In writing this package, Mike wanted to

"give children the opportunity to do something with a computer which could be done using real materials, but takes a long, long time ... so there are four units in the Craft Shop suite, one of them is embroidery ... it gives you a buzz to see a group of boys who, if you gave them a needle and thread to do some embroidery, would turn their noses up. But do it with a computer, it's completely different ... maybe (it will) inspire them to go away and do some real embroidery."

And what inspires Mike? Does he have dreams about children, computers and the future?

"I try not to think too much about the future ... because no-one ever gets it right ... so dreams - not really ... all I'm concerned about is getting ideas for my next project."

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**Jacqui Dean**

- Some Thoughts on Computers in Education

by Martyn Wild

WACAE

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Jacqui Dean was one of the founders of the Prolog Education Group (PEG) based originally at the University of Exeter School of Education (UK). Jacqui, a Historian by training, has had the good fortune to work alongside both Jon Nichol and Jonathan Briggs: Jon Nichol, a senior lecturer in History Education is renowned for his unconventional thinking and incisive mind; Jonathan Briggs for his insight and Prolog programming prowess. Together, like an educational super-team fighting the misplaced conventions of the day, these three battled to put children firmly in control of the microcomputer.

This was all happening in the early 1980's, a time when in the Social Science co’omputers were largely used for simulation and recall work, when children used software that, at best, involved limited interaction with some predetermined model of a past event. At this time software developers concentrated on bringing simplistic wiz-bang graphics and sound to the classroom without much thought given to the nature of the interaction between children, learning and computer. In contrast to this, Jacqui and her Exeter team developed a range of software tools that enabled teachers and children to represent and challenge historical ideas, facts and figures.

Jacqui's outlook is at once both refreshing and familiar; she continues to hold onto those ideals that were formed during her early days at Exeter.

She believes that we need to take stock of where we are, of what we have achieved in terms of educational computing to date. Certainly the technology has made great advances: back in the early 1980's many of us could perhaps not have predicted the levels of sophistication that technological tools have now reached. But the educational aims of using IT have not changed - essentially we are still trying to justify the use of IT to enhance children's learning experiences. But how much of what we are
Jacqui is convinced that History context evaluate basis technology liberal, promoting learning. More Sydney bemoaned classrooms. As with all that goes on in the name of education Jacqui believes that the quality of the learning experience can be traced back to the teacher. Before we can talk about the benefits of IT for children we need to remember that it is teachers that are responsible for providing the use of IT in our classrooms. It is an obvious but often over-looked point that teachers must feel happy with the use of the technology themselves; they have to be aware of what IT can achieve for their children. And it's not just a matter of looking at the use of the technology - we need to involve teachers in researching their children's learning. Basically we need to consider what is good educational practice; and we need to do this before we develop IT in our classrooms.

More than one academic at the World Conference in Sydney bemoaned the lack of hard research data on which to base our evaluations of the effectiveness of IT. Many pragmatists would doubtless agree with the contentious conclusion reached by the UK Department of Education and Science representative Phillip Lewis, that research to date has not told us anything meaningful about the effects of IT use on children's learning. But Jacqui has more faith in the role of research and expresses concern about the lack of formal evaluation in this area.

She believes that there should be more research in IT and learning. There are still too many examples of what was excusable a few years back; that is, of developers promoting the use of that technology or of this software on the basis that it will achieve a certain outcome. But in reality, these outcomes are simply the result of very liberal, if well meaning, thinking on the part of the developers themselves. Often, there is no respectable basis for their claims. We need to de-emphasise the technology and conduct basic research into the learning, to evaluate the level and types of learning that technology of all types can promote.

Jacqui is convinced that the use of technology will only be successful in the correct context; and that the correct context is provided for by taking the computers to the learning environment and not by taking the learners to the computers.

She recalls that when first starting to use computers, in the History classrooms of Exeter secondary schools, we carried in very large, ugly black boxes that passed for computers; we laid our spaghetti all over the classroom floor and attempted to get children to use them as a part of their usual lessons: we didn't try to change what the children were learning simply to suit the software that we had. We wanted to make the computers organic to the children's experiences, to their usual learning patterns in a History lesson. We wanted children and teachers to see meaning in what they were doing on the computers. And this was achieved by using the computers in a real context: both the teachers and the children could see a reason for using them - the computers could extend and enhance what the children would be doing in the course of their everyday studies. The context provides the meaning.

Jacqui found that History was a good vehicle for these ideas. We didn't believe in what was happening in the commercial field of software development - that is, developers producing software that centred upon a particular and specific historical event which aimed to get the children to remember rather than understand. We wanted to use software that teachers and children could use to suit their own particular purposes; software that could be used by children to represent and explore their own ideas. Much of what we did was based upon current understanding of cognitive psychology and knowledge about how children learned.

And what of the future?

Jacqui is cautious but would like to think that computer use in schools will find its own equilibrium in educational terms. Much of the hype and the enthusiastic claims we had in the early days can now be seen for what they are; also, the government initiatives in the UK and elsewhere to bring computers to all schools has created additional problems, where funding has been inadequate and consequently inservice support ill-considered. We must accept that in the immediate term not all teachers will wish to use computers; but our aim must be to promote the use of new technologies in the context of what we know about effective educational practice.

She expects that eventually, the curriculum will change, partly in response to what we know about the place of computers in teaching and learning. The new National Curriculum in the UK has already enshrined the use of new technologies in and across almost all curriculum areas at all levels. But more importantly, if anything useful is to be achieved in terms of enhancing children's learning it must involve a critical re-thinking of what and how we teach and how children best learn. Only when we have addressed the wider issues to do with establishing good educational practice can we hope to exploit the full potential of the computer.