MYDDLEHAM

MYSTERY, MOTIVATION AND MEANINGFUL LEARNING

The use of a Keys88 database to provide the focus for 9-11 year-olds exploring 'Stuart' England

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This paper describes how a group of primary schoolchildren investigated information recorded in Stuart times in the village of Myddleham in England. The children were given the freedom to explore the information, analyse and extract meaning from the data and form their own opinions about the people who lived at that time. The work took place in one of the schools based in the UK in which PEG (Prologic Education Group) operates. PEG is an informal group of six teachers based in primary schools in Gloucestershire, UK. The group is managed by Les Watson of the Cheltenham and Gloucester College of Higher Education.

THE BACKGROUND

As outlined at the World Conference on Computers in Education (Watson 1990), PEG has a firm educational base with its foundations in sound primary school practice based on exploration and problem solving and using the computer to enhance these activities. The philosophy of the group is summarised in the following:

In developing problem solving skills, teachers have the important task of helping pupils to tackle problems analytically and to adopt logical procedures in solving them. At the same time, pupils must be allowed to make mistakes and to follow false scents in what is essentially an exploratory process; and the teacher has to resist the temptation to give the 'right' answer or to over-direct the pupil otherwise the skill is not developed or practised. (Department of Education and Science 1985)

THE WORK OF PEG (CHELTENHAM)

Considerable success has been achieved in the integration of IT into the primary school curriculum using the two PEG tools Linx88 and Keys88. These successes have been reported at the annual PEG conferences (Watson 1989, 1990, 1991) and have continued throughout 1990-91. This work confirms that it is possible to integrate Information Technology (IT) into the primary school curriculum so that it makes a positive contribution to the learning process. A key element in this integration is the quality of the software used. The software must obviously perform a useful function but the interface presented to the user is also crucial. Many different user interfaces are presented to the teacher wishing to make use of IT. Much software in the UK has been produced on a 'cottage industry' basis and hence packages have no consistent 'look and feel'. Teachers show considerable frustration with the range and complexity of commands that they need to master to be able to use even a modest range of educational software packages. PEG has taken this problem into account in the design of its two authoring packages. Linx88 and Keys88 have a similar user interface so that users need only climb the learning curve once. Addition of the second software package to the teacher's repertoire demands only minimal relearning as the interface is largely consistent.

You can only get to somewhere new by starting off from where you are. (Wurman 1991)

THE SOFTWARE USED TO INVESTIGATE MYDDLEHAM

The Myddleham database was produced by Bill Tocknell using Keys88. The Keys88 program was written and developed by Derek Brough, Jonathan Briggs, Jon Nichol and Les Watson. It was originally conceived as a 'free form' wordprocessor. The user can decide to have one or more categories of information and type text into these categories. Each screen of information can contain words which are identified as 'keywords' and which can be used to form links between items. The user interface for Keys88 is very straightforward for both the author of a database and the user. The program is menu driven, and allows the selection of menu items with a single key press. Keys88 databases can be built with little formal planning other than to decide on the categories which will be covered and to identify some of the keywords in the topic. A user could build a database, for example, by taking notes on a topic and identifying the keywords as the information is entered. Each screen of text is an item of information. The way
in which the items of information are linked depends on the key words identified. Instead of the user creating links between the screens of information, as in most computer applications, this is done by the software based on the keywords identified by the user. A screen which has a number of keywords in its text will have links to many other items in the database. Consequently a very complicated web of links can be created easily — and sometimes unknowingly! This results in a conceptually difficult structure, which is more challenging to juggle mentally than the linear structure common in other types of software. Use is a function of the accessibility of the software (its user Keys88 require an understanding of the nature and scope of the program. This has been attained by teachers in PEG through regular support over a period of four years.

INFORMATION HANDLING IN PRIMARY SCHOOLS

The use of information handling packages in primary schools in the UK is not a new phenomenon. A range of flat file database software specifically written for this work has been available for eight years or so. This includes packages such as *Our Facts*, *Quest*, and more recently *Key* (not to be confused with Keys88). These packages have been used for a range of activities such as:

- Collecting, sorting, and interpreting information are common practices with children of all abilities throughout the primary age range. Technology can extend the scope of such activities. (Department of Science and Education 1989)

and

- Children might start with an empty database containing a small number of previously prepared headings under which they enter data and begin to make simple comparisons. (Department of Science and Education 1989)

However, the structure of records and fields is restrictive when working with volumes of text. Much of the historical information available is text based and can only be fitted to educational databases by truncating the meaning and reducing the text to bare facts which convey little about the 'feel' of the times. As a tool for asking questions about free form text traditional databases offer very little. It is not possible to easily follow a line of investigation and then follow a thread revealed by the search. Preparing children to investigate large bodies of textual information which lacks structure is an important aspect of education today.

A weekday edition of *The New York Times* contains more information than the average person was likely to come across in a lifetime in seventeenth-century England.

(Wurman 1991)

![Diagram showing links created by keywords](image)

**Figure 1** Links can be created as needed

interface) and its conceptual complexity. It has been the experience of PEG that first contact with the PEG tools results in teachers adopting Linx88 for use in the classroom. Keys88 is not used by most teachers until a later stage in their IT development and only after considerable use of Linx88. The willingness to use the software is not solely a function of the user interface, although this is important. Understanding of the concepts embodied in a software package is crucially important.

The 'idea' embodied in the Keys88 program of a relatively free-form hypertext database (see Figure 1) does not fit well with teacher perceptions of information handling software. The natural extension of this problem of grasping the concept is the difficulty teachers have in incorporating the Keys88 program into their range of software tools for the curriculum. Imaginative applications for open-ended software packages such as Linx88.

The vast majority of information which will impinge upon the children in later life, and which they need to make sense of, does not come pre-packaged under field names and neatly arranged in records. These structures are imposed by the inadequacy of the computer to handle information in a form that has meaning as well as fact. Hypertext tools such as Keys88 allow the user to usefully investigate information that is alive with meaning.

**USING COMPUTERS IN PRIMARY HISTORY**

The use of computers to support historical topics in the classroom is not unique. Simulation software for looking at a range of historical events is quite widely available. However, this type of software does not encourage or even allow pupils to 'investigate' historical events. Interpretation and extraction of meaning are not catered for in this type of historical computer simulation which
The 'village' contains 'facts' about characters such as the vicar, a puritan cobbler, a 'conservative' yeoman and the wife of the principal landowner, Sir Richard Hutchinson. The information is in the form of letters both by and about the main characters, diary entries, inventories, muster rolls, and parish registers plus other background information about landholding in the village, other minor characters, official proclamations and details of the church. It is contained in six separate files covering ten-year spans of village life on either side of the Civil War which were introduced to the children as their study of the period progressed. Thus, they were able to see the feelings and opinions of the characters change as time went on, as well as form their own opinions about individuals living in the village.

'The village caught my eye because it had history in it which made it more exciting to learn about. It told you history and made you enjoy it.'

(Jenny aged 9)

MYDDLEHAM — A REAL OR FICTIONAL VILLAGE?
The village thus created is fictional and, purposely so, for it contains, for example, reference to non-payment of ship-money, a witch trial, a wounded cavalier hidden in the tythe barn and complaints by the yeoman of trampled corn and the other deprivations of insolent solldiery from both sides — far more incidents than could conceivably have happened in any one village. Nevertheless, everything contained in the files was carefully researched in textbooks, the Gloucestershire County Records Office and by personal visits to Boscobel House, Malmesbury Abbey and Gloucester Folk Museum. The fiction is firmly based on fact. Much of the text contains original spellings and phrases and the children are convinced that it is Middleham in Yorkshire because one of them had found it on a map!

THE WORK IN THE CLASSROOM
The class of twenty 9 to 11 year-olds were divided into groups to research various aspects of the village. They had already used computers for a range of classroom activities within other projects and had some familiarity with using the Keys88 software. After an initial look at the scope of the information available the children quickly realised that there was too much material for any one group to cover in its entirety. The material lent itself to the study of the main characters and each group ended up studying one of them, producing folders including village maps, drawings of the characters' houses, family trees, pen portraits and estimates of relative wealth which they calculated from the inventories. This close link of each group of children to a particular character in the village enabled them to develop expert knowledge on their subject. This knowledge was gained by the children developing their own strategies for investigation. It became clear to them that much could be learned from the opinions of other people in the village.

Tom aged 10:

"You have to use your head. It's like a puzzle, a book has an index and contents page but the computer hasn't. Also there are bits under different headings ... like there's a bit of Gough under Reeves."

Teacher: "Will Reeves' view of Gough tell you more about him than he tells you about himself?"

Tom: "More! If he said all about himself it would be all brilliant but other people have different opinions don't they? He might have fallen in a cot but he wouldn't tell us would he?"

For a purely text-based program the Keys88 material was surprisingly motivating, liberating the children to follow their own lines of research, both at the computer and away from it, within the parameters of material designed for them (and modified as need arose) by their own teacher. It was an unfolding story of historical characters which they were motivated to investigate.

'You start from scratch, you can find out more information not about things that you already know ... finding out from the computer is more fun than from a book because a book sort of stops at a certain level but with the computer you can sort of carry on ... and you can go more and use your imagination and think about it ... in books you're reading it and you believe it but with the computer you don't know'.

(John aged 11)

INTERPRETING INFORMATION — FORMING OPINIONS

'I liked George Reeves because he has determination like when he spoke up in church and he was chucked out and went on speaking through the window.'

(Chris aged 10)

'I think Richard Gough is a very posh person but there are two sides to him — nice if you are nice to him. I would not like to live with him. Well, I mean, on the computer we found out what some people thought of him and then we found out about other people and there are two different sides completely some people hated him and thought he was a very sly person and other people really liked him.'

(Tom aged 10)

The comments on this page were elicited from some of the children six weeks after the project finished. Not only were they strongly attached to the character they had studied — they felt a kind of 'ownership' — but they were able to hypothesise about their motivation. Talking to them about the nature of history also revealed that the exercise of constructing meaning from the data bank which had been produced for them had helped develop an insight into the process of history.

The Keys88 program was not the only resource provided for the children who made visits to Gloucester, Malmesbury, Fairford and Boscobel House (where Charles II hid after the Battle of Worcester). They also listened to background information provided by the teacher, referred to a wide selection of books and had a visit in full regalia from a member of the Sealed

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Knot Society. The work with Keys88 was, however, central to the learning experience, designed as it was by the teacher who tailored the other elements of the learning environment to dovetail in with the unfolding weekly discoveries made on the computer. Thus the wounded cavalier, hiding in the tythe barn in fictional Myddleham, was introduced in the week of the class trip to the Royal Oak and Boscobel House while complaints of damage to the church in Myddleham was reinforcement for the real evidence of musket damage to the walls of Malmesbury Abbey as viewed on a previous visit.

It is the control which authoring software, such as Keys88, gives to the class teacher to construct relevant material for their individual pupils allied to the inbuilt motivational properties of the programme that makes the historical information the teacher has collected and arranged a meaningful and motivating learning resource.

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More than a decade has passed since the introduction of computers into schools and yet they have failed to be taken seriously as an educational tool in many classrooms. Education is failing to keep pace with the changes taking place in society as a whole. Our schools seem out of step with what society requires now or will require in an uncertain future. Many teachers are becoming disillusioned with their occupations. Our communities have much less regard for teachers and education than in other countries, e.g. Japan and China.

As if all this weren’t enough, Australians are particularly worried about their future. On a wider scale, in the words of Dr Peter Ellyard (1989), former Director of the Commission for the Future: ‘Our country is struggling to repair its economy in a world dominated by rapid economic and technological change, with many of earth’s life systems under ecological threat. The major changes which are currently being made in terms of Australia’s economic reconstruction are not only necessary, but probably the bare minimum which will be needed, if we are to achieve true economic viability before the arrival of the 21st century.’

Our use of technology in schools seems to be a barometer of our ability to change and accept the new. The barometer reading is not good.

Change is occurring at an unprecedented pace in the ‘real’ world. Schools seem lost in an authoritarian and conservative world and bright teachers seem eager to leave the system and join a more diverse one. Students face daily a growing wedge between their daily lives and their out-of-touch classrooms.

AN EDUCATION SYSTEM LEADING CHANGE

Dr Ellyard explains that it is the economic system which now wants creative, enterprising, innovative, assertive, lifelong learners with a broad range of skills. The economic system no longer wants docile, unquestioning, narrowly trained, takers of orders. He maintains that we need the creation