

This article reports on the development of a software package directly related to two cross-curricular issues in secondary education: Personal and Social Education (PSE), and Information Technology (IT).

It arises from the questionnaire survey of health related behaviour by Exeter University's Schools Health Education Unit. This year all the secondary schools in the East Devon Health Authority are participating, and they have expressed interest in using the data with their pupils.

### *Cross-curricular links*

The National Curriculum is emphasising such links between IT and other subjects, and its cross-curricular nature. Research is needed urgently to assess the issues involved in cross-curricular work of this nature. This application can link IT to health education, making it more motivating to pupils as the data is seen as personally relevant.

In addition, teachers in secondary schools are looking for new ways to work with their tutor groups for PSE, so they are open to curriculum development.

The software package developed contains data files for use back in schools on their software and hardware. The teaching materials are cross-referenced to other support material for alcohol education. Other areas of the National Curriculum may also be considered where they arise: in particular, pupils may be stimulated to develop their own questionnaire and look at the mathematical aspects of handling data. There is very little data on the cross-curricular uses of IT, so the next phase of this project is to evaluate this teaching programme.

### *Health related behaviour*

Exeter University's Schools Health Education Unit, run by John Balding, has been collecting and analysing data on children's behaviour relating to their health for a decade. Their work ranges from producing reports

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# Information Technology: a way into health education

of national significance to supporting individual schools in the classroom.

The relevance of the Unit's work and products to this project is obvious when the following facts are considered:

1. IT as an area of knowledge and skill which requires suitable topics on which to work. Information handling in particular can be difficult to link to the interests of pupils. Relevant information is difficult to obtain in sufficient quantity.

2. Health education may be made more motivating to pupils in school when the data is seen as personally relevant and the pupils can frame and answer their own questions.

### *The project begins*

Discussions with John, his team and staff involved in the East Devon Health Authority questionnaire survey this year resulted in the following project to:

- Develop sets of data for use back in schools.

(These data sets are a manageable size to suit the software and hardware in use in the schools. They also preserve the confidentiality and significance of the data.)

- Produce and trial teacher materials so that pupils can learn through handling the data.
- Conduct research to ensure that the software package is beneficial in terms of both health education and IT.

Other areas of the National Curriculum would also be considered where they arise in the project, for example mathematics and technology. Mathematics has an Attainment Target for Data Handling, and Technology specifically refers to the use of questionnaires.

### *What will it do?*

It is hoped that the project will lead to some or all of the following outcomes.

- The use of IT to support pupils' investigation of their own hypotheses on their own schools' data will improve their motivation to understand the issues.
- Pupils and teachers will benefit from a programme which makes clear links between different subject areas, since there is often difficulty in working across subject area boundaries.

- *The application of IT to data on health education will improve attitudes to IT and health.*
- *The application of IT to data on health education will improve knowledge in both IT and health education.*
- *Differences between the attitudes and knowledge of boys and girls and between, for example, second and fourth form pupils, will be brought out.*

Additional hypotheses would be developed where the opportunity arises.

### Stage 1

This first stage saw the development of data sets (March 1990–May 1990)

The data was gathered from 2nd and 4th-year pupils through questionnaires to all secondary schools in the East Devon district. The data was keyed in and processed by the SPSS statistical package to produce reports for the Authority and school management. This has been funded by East Devon Health Authority.

This data cannot be used with the same records because extreme cases could be identified by the children and the data would lose its confidentiality. The use of personal records could contravene the Data Protection Act, so the data was transformed into a simulated sample which is not significantly different from the original. Each school's data is processed and re-formatted for the particular software already used in the schools.

A subset of this enormous data set was selected. The actual subset was decided upon after consultation with the teachers and an advisory teacher for health education. The teachers requested the topic of alcohol abuse, and this was supported by the advisory teacher.

### Stage 2

The next step was the development of a teaching programme and materials (April 1990–July 1990).

Teaching materials were designed by myself in collaboration with the

teachers themselves, an advisory teacher for health education (Ian Tearle), and John Balding.

The materials include data files, worksheets, teacher instructions, and reference materials. These are cross-referenced to material already available, for example reference (1). This was done alongside the use of the data by two schools.

Both schools were keen to use the Grass or QUEST software on either BBC or Research Machines computer networks. The complete data file has 18 fields, some of which contain codes where pupils did not answer the question.

Two sub-files with less information were created for introductory use by the pupils. An example of part of the health file's reference sheet is shown on the opposite page. Younger pupils are directed in their objective with the health data. Older GCSE classes will be encouraged to take an independent negotiated approach to the way they process, analyse, and present their results.

### Stage 3

Evaluation of materials is taking place during the period September 1990–July 1991.

A school volunteering to use these teaching materials will be researched. The strategy is as follows:

- *On first contact, the head of the school to supply details of the school.*
- *Teachers to be interviewed before the course starts and again after the completion of the course.*
- *Pupils to be interviewed after the course.*

Additional items may also be added, such as a questionnaire on IT attitudes and some measure of knowledge of health education and IT data handling. A sample of pupils will be interviewed before and after their project work. It may be possible to use information that the teacher already has on these pupils, such as assessments.

### Stage 4

This will involve dissemination and further developments (July 1991–July 1992).

Publication of these results will take the form of reports and articles in journals and magazines and presentations at conferences. If the evaluation proves the teaching materials successful, then a number of activities may develop with external funding:

- *Workshops for teachers.*
- *Commercial production of the materials to support the programme.*
- *Development of additional data subsets and teaching materials to tackle other health issues.*

### Conclusion

Both IT and health education are cross-curricular themes of the National Curriculum. IT is a process skill which needs applications on which to work. Health education can be dry and irrelevant without something to help pupils reflect on it and bring its personal relevance home to them.

This project aims to bring the motivating process of IT into health education and so to bring it alive with pupils in school.

However, there is a risk. Pupils who are unaware of dangers may feel encouraged to risk them if they are shown that some of their peers behave in an unhealthy way. Therefore this use of IT needs to be carefully evaluated to ensure that both IT and health education benefit.

The software package incorporating the data from the Health Related Behaviour Questionnaire is being developed with the help of the teachers and pupils in two schools. Additional items to support alcohol education have been added.

Before these materials can be released to other schools, there must be an evaluation of their effect on both health education and IT. Do both cross-curricular components benefit? Indeed can the educational effect be measured for two themes?

The plans for the implementation of the National Curriculum assume so, but the reality has yet to be tested.

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### Reference

1. Balding, J. & Plant, S., *The Extra Guest*. Schools Health Education Unit, University of Exeter, 1989.

*The reference sheet for data about alcohol use and abuse. It explains the different fields available for analysis. With this information, pupils can investigate links between alcohol consumption and the other variables listed here. Use of additional files extends the range of behaviours that can be studied.*