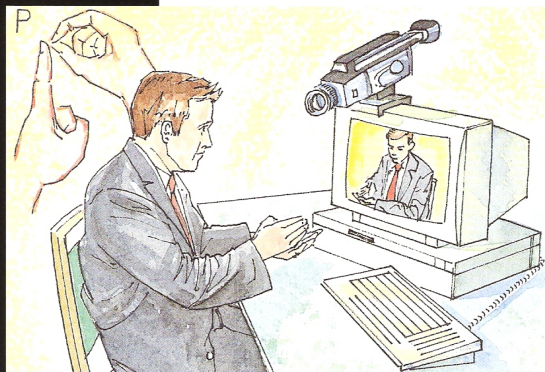


LEARNING TECHNOLOGIES

Computers and Disability

LOOK AND LEARN



Seven and a half million people in Britain suffer from some degree of hearing loss, including over half a million currently registered as profoundly deaf. For those with a significant hearing impairment, training can present particular challenges.

Open Learning is a flexible and innovative approach to acquiring essential new skills. Many of the techniques associated with Open Learning, such as interactive video, are ideally suited to the needs of the deaf and hearing impaired, as they enable the learner to work at his or her own pace in a primarily visual environment.

Three recent projects have led to the development of computer-based training solutions, tailored to meet the specific requirements of the deaf and hearing impaired.

The British Sign Language (BSL) Tutor is a unique training package, devised to support BSL tutors by enabling trainees to practise signing in their own time and at their own pace. CAPHIS (Computer Assisted Programme for Hearing Impaired School Leavers) and PATHWAYS are programmes specifically oriented towards the demands of employment, providing the trainee with the skills required to find a job and cope with the workplace.

All three projects, which were funded by the Employment Department, demonstrate the vital contribution that Open Learning can make to the training and education of people with special needs.



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LEARNING METHODS CASE STUDY

The British Sign Language Tutor

There are around 55,000 people in Britain who use sign as their first language. Many deaf children learn to sign at the same age as they would learn to speak and rapidly become fluent. For those whose hearing is impaired at a later stage or for close relatives of deaf children, learning BSL can be a major undertaking. The British Sign Language Tutor is the first multi-media training aid for sign language, developed by Attica Cybernetics of Oxford in a two-year project funded by the Employment Department.

The British Sign Language Tutor incorporates 60 lessons and is based around 21 themes. The system encourages the individual to practise signing by providing the sort of feedback that could normally only be supplied by a tutor in a one-to-one session. Unique to the system is a 'record and compare' mode which allows the signer to record his or her efforts and play them back on-screen alongside the original tutor sequence. The signer has full control and can vary the speed of the video and freeze-frame when necessary. The system also incorporates a comprehensive video dictionary.

The system depends on Digital Video Interactive (DV-I) by means of which video information is stored on a compact disc. It can be run on an IBM compatible PC fitted with a CD-ROM player and DV-I boards. A camcorder is also required for the recording component.

Initial trials carried out with deaf tutors and students at the Centre for Deaf Studies in Bristol and Oxford College of Further Education produced enthusiastic responses. All participants agreed that the BSL Tutor represents an innovative solution to the need for face-to-face contact in teaching BSL.

Training for Work

The difficulties experienced by many school-leavers in choosing a career are magnified when the student is also deaf or hearing impaired. Deaf people tend to score significantly lower than their hearing counterparts in tests of the understanding of words and sentence construction. A survey carried out among deaf tutors in 1989 confirmed that many of their students need extra help with understanding advertisements, application forms and pay structures.

The Employment Department has funded the development of two training programmes to help hearing impaired school-leavers cope with the complexities of job-hunting and starting work.

CAPHIS was developed at Sunderland Polytechnic's Computer Aided Learning Centre as a training tool to help deaf and hearing impaired school-leavers who are looking for a job for the first time. The programme comprises three parts:

- a test to assess the student's reading age
- a series of tutorials pitched at two different reading age levels

L E A R N I N G T E C H N O L O G I E S

- a management system which tracks the student's progress.

The vocabulary of job adverts and application forms is covered in the tutorial module which also explains how to write a job application letter and how to respond to a job offer. The emphasis of the programme is on communicating the practical skills required to enable the student to find work.

PATHWAYS, developed by Sheffield-based Sanderson CBT, offers a series of literacy tutorials specifically relevant to the workplace. The programme comprises two modules:

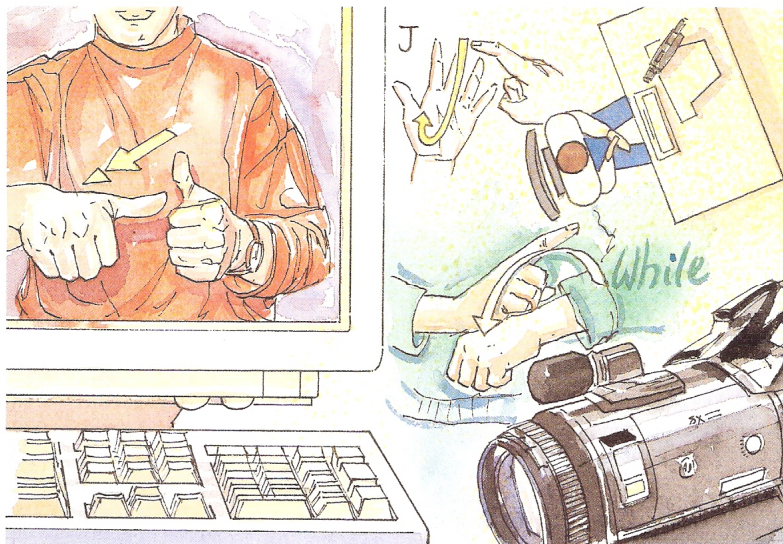
- Health and safety
- Looking for a job.

An accompanying workbook provides extra information and background examples. User-friendliness is ensured by pictorial material and by an easy-access dictionary which provides the BSL sign for any unknown words.

The 'health and safety' component familiarises the student with vital signs and procedures associated with fire, electricity and toxic substances. 'Looking for a job', on the other hand, explains how to fill in application forms, how to organise a bank account and other financial procedures associated with working.

Both CAPHIS and PATHWAYS run on IBM-compatible AT machines with EGA graphics.

Although CAPHIS currently requires 15 Mb of hard disc, it will in the future be produced in



L E A R N I N G T E C H N O L O G I E S

a modular, runtime version. PATHWAYS requires 2 Mb of hard disc. The two programmes can be accommodated on the same system if sufficient hard disc space is available.

A Model for the Future

CAPHIS, PATHWAYS and the British Sign Language Tutor are examples of the way in which established technology-based techniques can be used and adapted to train people with special needs. All three systems represent a practical and cost-effective solution to the problem of teaching skills which would otherwise require intensive face-to-face contact. The systems are also successful models for teaching any skill which requires substantial visual feedback.

This is one of three Case Studies exploring the use of Open Learning to train people with special needs. 'The Enabling Computer' and 'English Without Tears' describe Open Learning projects with people with physical disabilities and literacy problems respectively.

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