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K.C. LUN

*Division of Biostatistics and Health Informatics
Department of Community, Occupational and Family Medicine
National University of Singapore, Singapore
and
World Health Organization Collaborating Centre for Health Informatics, Singapore*

PATRICE DEGOULET

*Medical Informatics Department
Broussais University Hospital
Paris, France*

THOMAS E. PIEMME

*Office of Continuing Medical Education and
Department of Computer Medicine
George Washington University
Washington, DC, U.S.A.*

OTTO RIENHOFF

*Philipps University Marburg
Division of Medical Informatics
Marburg, Germany*

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Demonstration of computer assisted instructional media with Brainwork II Professional

Vavrina J^a, Stettbacher A^b, Wegmüller A^c, Stucki P^d

^aDept of Otorhinolaryngology and ^cDept of Ophthalmology, Kantonsspital Luzern, Switzerland

^bDept of Surgery, Regionalspital Thun, Switzerland.

^dDept of Instructional Media, University Hospital, Bern, Switzerland.

Instructional media like video and slide show are widely used in medical education. Computer assisted learning (CAL) has become an important medium and provides new didactic elements like interaction between student and computer, animation, drill and simulation. Computers have been in use for over three decades in many specialties. We distinguish several software categories to create CAL, for example conventional programming languages like Basic or Pascal, Expert Systems and Multi-Media. An Authoring System should be a powerful but user-friendly tool, which makes authors independent of programming languages and special computer knowhow. But as most Authoring Systems are complex they discourage many people from using them. Often input data are encoded and are subsequently lost in later use. With BRAINWORK II we present a non-commercial, simple Authoring System that enables the user to integrate slides (BRAINWORK II professional) or high resolution bitmaps (BRAINWORK normal version). Examples from courses in surgery, ophthalmology and otorhinolaryngology will be demonstrated.

1. Features of the software

With the integrated editor experts create a course of instruction or test like working with a word processor. In doing so they have to act upon just a few rules. For this reason the time to familiarize with the software is short. With the built in interpreter created courses can be started and tested immediately. In view of learning psychology there are two different ways of dialog control. On the one side the user can choose a learning mode, which permits individual learning. The system reacts with explanations and help to the user input. On the other side a test mode can be chosen with multiple choice questions, scores and limited time for answer. BRAINWORK II professional enables to control a slide projector in a total random order. As is well known a slide shows much a higher resolution than pictures from TV or PC. Existing slide collections of many clinics could be exhausted efficiently. Each question allows to show up to three different slides.

2. Efficiency and functions

Windowed surface with pulldown menus and mouse support. Very simple operation for user and author with context sensitive help. Intermediate and end statistics. All steps can be recorded in a log-file for later evaluation. Realistic simulation of examinations in the test mode. Macro functions for conditioned jumps and navigation. Possibility to fade in high resolution PCX-pictures, for example scanned photos. Support of EMS for faster fade in of Super-VGA pictures. Different software-utilities for manipulation of PCX-files.

3. System requirements

The system was developed on an IBM-compatible PC with 2 MBytes Memory and VGA-Display. DOS versions 2.1 to 5.0 may be used. The minimal equipment is a PC with at least 256 KBytes Memory. Using PCX-pictures 640 KBytes RAM or more, Harddisk and VGA-Display are recommended. For slide projection : Kodak S-RA 2500 Carusel with serial Interface and serial cable.

4. Conclusions

The disadvantage of many Authoring Systems is a complex editing system for data input. In addition existing systems often encode the input data and so they are lost for other use. Costs and sacrifice of time to create a new application often are high. BRAINWORK II takes new steps by using a standard word processing system to create questions or tutorials. Data are saved as ASCII-files and therefore they keep open to other applications. CAL is realizable with the least possible additional hard- and software. Image as an important medium in education can be integrated as slide or PCX-file.