



Chapter XXIX

Development of KABISA: A Computer-Based Training Program for Clinical Diagnosis in Developing Countries

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EXECUTIVE SUMMARY

KABISA is a computer-based program for training in diagnostic problems in (sub-) tropical regions. It challenges the individual student with a randomly generated case, for which he should try to find the diagnosis, asking questions, performing a physical examination, and ordering tests. The built-in tutor follows the student's input with complex logical algorithms and mathematical computations, gives comments and support, and accepts the final diagnosis if sufficient evidence has been built up. Several problems arose with the development. In the first place, the evolution in the teaching

of clinical logic is always ahead of the program, so regular updating of the computer logic is necessary. Secondly, the choice of MS Access as computer language has provoked problems of stability, especially the installation of an MS Access runtime. Thirdly, and most importantly, scholars want proof of the added value of computer programs over classical teaching. Moreover, the concept of a pedagogical “game” is often regarded as childish. Finally, the planning and financing of an “open-ended” pedagogical project is questioned by deciders, as is the case with all operational research.

ORGANIZATIONAL BACKGROUND

The Institute of Tropical Medicine is a private institute of public utility, located in Antwerp, Belgium. It has formal links with all Belgian universities. Its mission statement encompasses research, training, and services in the field of tropical medicine and medicine in resource-poor countries. It employs more than 300 people and has an annual budget of more than 25 million Euros. The ministry of education and the ministry of international cooperation provide the core budget.

Training varies from several short courses, including a four-month course for nurses, a six-month diploma course for medical doctors, and different master’s courses and PhD programs. During recent years, the training philosophy has shifted to problem-based and distance learning. Several computer-assisted tools and CD-ROMs have been produced. A telemedicine program is running for veterinary diseases and for anti-retroviral treatment of HIV in developing countries.

The institute has more than 100 projects, mostly in developing countries, and participates in many others. Training forms a substantial part of several of these projects.

SETTING THE STAGE

At the end of the eighties, the need for a different type of teaching and training became apparent worldwide. Merely loading students with more and more knowledge was questioned. The need for a shift from knowledge to competence was clear. New approaches to training were introduced: role-play (the trainer or an actor plays the patient’s role, the student asks questions and suggests investigations in order to reach a final diagnosis); simulation of trials, where students take the role of prosecutor, lawyer, and judge; discussion of diagnostic errors or patient management in small groups; and “problem-based learning” in general.

Computers were introduced into the training, first for retrieval of information, and later for training programs (Clayden & Wilson, 1988; Siegel & Parrino, 1988; Verbeek, 1987). An interactive computer classroom with 50 computers, and a smaller one with 12 computers were installed in the institute. The library was also fully equipped with all available IT means. In student residences, wireless networks provided and maintained by the institute staff permit students to study at night and during the weekends. IT staff consists of five full-time computer experts, and several scholars are actively involved in writing and creating programs.

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