A SURVEY OF CBT

Harold F. Rahmlow

Applications of computers in business education and now at home are growing rapidly. An important question for persons in business and industry is how this burgeoning technology can and should be applied to the training enterprise. As a result of research conducted over the past eight months, the author has concluded that computer-based training can be effective and that for many situations, computer-managed instruction (CMI) is the best starting point.

The objective of the research was to study current and potential applications of computer technology to career-long learning for professionals, especially those in insurance and related financial sciences. A mail survey was conducted of approximately 400 insurance companies to ascertain the extent of computer-based training activity within these companies and to establish a reference for follow-up.

In addition to the mail survey, recommendations were obtained from vendors and other experts in the field concerning the identification of important sites of computer-based training activity. Emphasis was placed on sites in business and industry and on the work of designers

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of the major commercially available computer-based education systems. Approximately 50 site visits were made throughout the United States and in Great Britain. A number of ADCIS members were interviewed.

It was concluded that while the amount of computer-based training activity within the insurance business is not significant, cost effective applications do exist and their number is growing. In businesses other than insurance, a number of excellent examples of cost effective computer-based training were found.

One prevalent and significant application is the training of support personnel to carry out production tasks requiring the use of a computing system. These tasks include order entry, account status inquiry and updating, and bank teller transactions. Organizations engaged in computer-based training for these activities are, respectively, Kraft, Inc., Liberty Life Assurance Company, and Western Bancorporation.

A second significant area of application is the training of large numbers of persons in diverse geographical locations. TWA and the organizations previously listed provide examples of this application. Economy and efficiency in training highly skilled and often highly paid personnel is a third significant application of computer-based training. American Airlines uses sophisticated graphic simulations in its training

Peter M. Dean

IBM's Data Processing Division has responsibility for education of the company's customers as well as its own sales persons and system engineers. The "Field Training System" provides in-branch education for Marketing Representatives and Systems Engineers. It is used both for initial training of newly-hired personnel as well as for the in-service education of experienced personnel.

The Field Training System is an integral, planned part of the entire education system. Learners move smoothly between computer-managed self-study in the branch office and conventional classes conducted at education centers. The conventional classes depend on effective learning at the branch. They are designed to be high level and intense; there is no time for remediation and precious little help for the student who has not learned the prerequisites.

While some conventional Computer-Assisted Instruction is used, most of the self-study is done off-line using printed study guides, audio tapes, and, to a lesser extent, video tapes. While the time ratio varies from course to course, there is an average of one hour on-line avtivity for every nine hours spent elsewhere. The on-line activities consist of two kinds of tests and the use of the computer to compute, i.e., to code and run programs for educational purposes.

The tests are best described as either quizzes or as examinations. The quizzes are primarily designed to assist the individual in his learning and only secondarily used to manage instruction. The examinations are gates which must be passed before

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attendance is permitted at follow-on classes.

The examinations are randomly generated for each user and differ every time an individual takes one. They are also locked and passworded. The quizzes, on the other hand, exist in fixed form and can be taken as often as the learner may desire.

Students are encouraged to attempt the quizzes prior to studying the material to determine their readiness or need for the material and where the emphasis should be placed on the material as it is studied. Students must complete all prerequisite quizzes satisfactorily before attempting an examination.

This entire application is coded in Coursewriter operating under the Interactive Instructional System. Its cost is about $15 per student day including the computer time and line costs. A CAI system would cost about $60 per day, while a conventional stand-up system costs over $100 per day. (All costs are net per student with development factored out.) Compared to a conventional instruction system, the Field Training System helps IBM realize a conservative $10 million annual cost avoidance.

CBT LITERATURE

Computer-Based Instruction: One Trainer for 8,000 Trainees. <u>Training</u> 15(7):44-46, July 1978.

> Description of CBT at Western Bancorporation, where a new, computerized "Teller Item Processing System" is also used in a CAI mode to train tellers in its operation. Training system developed by Boeing Computer Services Company of Morristown, New Jersey.

Sugarman, Robert. A second chance for computer-aided instruction. <u>IEEE Spectrum</u> 29-37, August 1978.

> Excellent overview of existing

THE CHAIR'S VIEWPOINT

Jesse M. Heines

As chairperson of the SIG CBT, I have recently had the honor of reviewing abstracts submitted for the upcoming ADCIS Conference (February 26 to March 2, 1979 in San Diego). I reviewed 76 abstracts and found that 12 of these pertained in some way to CBT.

Topics covered in the abstracts included vocational training, CMI in industry, CBT in the insurance businesses, military simulations, chemical process simulations, CAT for FAA pilot certification, and CAI in correctional institutions. This means that the SIG CBT will sponsor one and possibly two technical sessions at the 1979 conference.

The SIG CBT will also hold a business meeting at the conference. Agend items for this meeting include the election of officers, deciding on the activities that this SIG will undertake in 1979, setting activity priorities and timetables, and establishing committees to assure that the activities are realized.

There will be many excellent papers presented at the conference, and many conference participants active in computer-based training. For further information, please refer The ADCIS News or write George Lahey, Navy Research and Development Center, 271 Catalina Boulevard, San Diego, CA 92152.

CBI systems with clear and unbiased discussions of PLATO, TICCIT, and distributed processing systems. Describes different approaches to courseware development and their pros and cons. Presents several possible courses that could lead to CAI proliferation.

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of flight crews for the DC-10 and, as Chuck Buchanan described in a previous issue of the Newsletter, United Airlines is using CMI to improve the cost effectiveness of its training program for newly hired pilots.

In the course of the research it was further noted that a number of persons engaged in computer-based training were unaware of the potential, or even the existence of, alternate systems and techniques which might have enhanced their work. The author feels that the quality and impact of CBT can be raised through an exchange of information using a vehicle such as the ADCIS Special Interest Group in Computer-Based Training.

As a result of this research and as part of an ongoing program of providing growth experiences for professionals in training and education, the American College is taking three actions: publishing a booklet of important questions to be addressed by those considering computer-based education, publishing a catalogue of computer-based training programs of special interest to the insurance community, and conducting a workshop on computer-based education and training.

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