



ADCIS SIG CBT

NEWSLETTER

Vol 1 No 1 July 1978

The Newsletter of the Association for the Development of Computer-based Instructional Systems Special Interest Group in Computer-Based Training

CMI AT UNITED AIRLINES

C. C. Buchanan

United Airlines Flight Operations Training has successfully implemented Computer-Managed Instruction (CMI) in its training program for newly hired pilots. A course of training that would have taken four weeks using conventional instruction methods is being completed in an average of seven days.

This program was accomplished using PLATO Computer-Managed Instruction to administer an individualized, criterion-referenced course of instruction.

There were some key decisions affecting this application, including a commitment to apply the principles of Criterion-Referenced Instruction (CRI) wherever possible, and an understanding that the program was not required to prove the effectiveness of either CRI or CMI. (Based on logic and previous experience we assumed that CRI and CMI worked; our task was to prove they work in our environment.) These decisions are based on our feeling that CRI is the key to training efficiency. Criterion-Referenced tests must control training content, not vice versa. The efficiencies are a result of not hav-

ing to help a pilot learn something that he/she already knows.

Our development process began in March of 1977 with the documentation and approval of Crew Performance Objectives (CPOs). That process to determine the course content continued until September of 1977 when the first criterion tests were written. As the tests were written to match the CPOs, they were loaded into the PLATO CMI system. The criterion tests were written with the help of Subject Matter Experts from throughout the Flight Operations Training Organization. The questions were generally hand written on forms, then put into the PLATO CMI system by clerks.

Twenty-eight modules made up of 100 Instructional Units, including over 2,500 questions were in the PLATO CMI system and used for the first class on January 3, 1978. Needless to say, all of the questions weren't proofread and edited but the first few classes of students were very helpful in their use of PLATO's comments feature. Most errors were corrected by the time the fourth class was finished. Without the use of a CMI system, we wouldn't have made the January 3rd deadline.

The development of Learning Resources was a parallel effort to the question writing efforts. When an Instructional Unit's questions were completed, the Learning Resources were developed. We have used primarily

C. C. ("Chuck") Buchanan is a Senior Training Specialist at the United Airlines Flight Training Center, Stapleton International Airport, Denver, CO 80207.

(continued on page 4)

The ADCIS CBT Newsletter is published quarterly by the Special Interest Group in Computer-Based Training of the Association for the Development of Computer-based Instructional Systems. Its purpose is to encourage the exchange of information on instructional computer applications in business, government, and industry.

SIG CBT Officers

Jesse M. Heines, Chairperson
Digital Equipment Corp.
Bedford, MA 01730

Robert C. Fratini, Sec./Treas.
The American College
Bryn Mawr, PA 19010

Newsletter Staff

Jesse M. Heines, Editor
Digital Equipment Corp.
Marion R. Borders, Assoc. Ed.
Digital Equipment Corp.

Articles on computer-based training are invited from all members of the training community. Manuscripts should be limited to one or two letter-sized pages, typed double-spaced, and submitted to the editor.

Any opinions, conclusions, or recommendations expressed in this newsletter are those of the authors alone. They do not necessarily reflect the views of ADCIS, the SIG CBT, the editors, or the authors' employers.

Requests for reprints and/or further information on articles in this newsletter should be directed to the authors. Requests for membership in the ADCIS SIG CBT should be directed to the Secretary/Treasurer.

This newsletter may be reproduced for noncommercial purposes with credit to the authors and ADCIS SIG CBT.

THE PROBLEM: COMMUNICATION ON CBT

Publications on the use of Computer-Assisted and Computer-Managed Instruction (CAI and CMI) in training are scarce. This may be because training organizations are just beginning to apply these techniques, because trainers are not as highly motivated to publish their work as their academic counterparts, and/or because much of the information in training environments is proprietary.

There are undoubtedly internal communications in many organizations that describe CBT activities. We encourage readers to share these with our membership so that we may benefit from each other's experience. Company confidential information can almost always be deleted from such documents without damaging their value to other trainers. Two special magazine sections on computer-based instruction are discussed below.

Training magazine published a special section on CAI in their September issue. The articles in this section were very cursory. Not one of the articles described a fully operational system, and the 14 item "reader's starter list" included only very general works.

On the other hand, Educational Technology has just published an entire special issue on trends in CAI (April, 1978). This issue includes articles by Suppes, Bork, Dean, Avner, Zinn, Seidel, Morgan, Alderman, Bunderson, Watson, Hofstetter, and others. Most of these people have been recognized as CAI leaders for some time, and most have also been long term members of ADCIS. Their articles discuss several existing CAI and CBT systems, provide historical and future perspectives on the role of CAI, and share a wealth of experience on strategies for developing and managing CAI projects. While many of the examples are drawn from academic disciplines, they can be easily generalized to the training environment.

THE SOLUTION: THE ADCIS SIG CBT

Whatever the reason for the lack of publications and communication on CBT, the ADCIS SIG CBT has been established to try to alleviate these problems. Our main purpose is to foster a high level of interaction between trainers and between trainers and educators. The following paragraphs from the SIG CBT's charter more clearly define our purpose and why we think that ADCIS is the proper organization to support our activities.

"The goals of training are, in many aspects, similar to those in education. Both trainers and educators can gain much by interacting with each other in the field of Computer-Based Instruction. In such areas as curriculum design, implementation, and hardware and software design, there is much common interest.

"In training, however, there exists special emphasis on proficiency, time savings, and cost reduction. Since trainers work under different constraints and have somewhat different goals than educators, they have a need for a special forum [within ADCIS] for discussion and exchange of ideas and methods.

"The goals and functions of the Special Interest Group in Computer-Based Training are:

"(1) to attract to ADCIS organizations that use computer-based techniques in their training programs,

"(2) to establish a forum where such organizations can exchange information and methods,

"(3) to promote the use of CBT in non-academic organizations, and

"(4) to encourage cooperative CBT research and development employing the resources of both training and educational organizations."

To become a member of the SIG CBT, you must first be a member of ADCIS. Information on ADCIS member-

(continued on page 4)

THE CHAIR'S VIEWPOINT

Jesse M. Heines

This is the first newsletter of the new ADCIS SIG CBT. We are officially underway, and I would like to get us productive as soon as possible. Our first two tasks are to attract other members of the training community to our ranks and encourage participation in the 1979 ADCIS Conference in San Diego.

To begin the first task, this newsletter is being mailed to both SIG CBT members and other key members of the training community, as well as being published in the ADCIS News. If you know of someone who should be receiving the newsletter and is not, please inform the associate editor. We will be glad to add both ADCIS and non-ADCIS members to our mailing list.

To begin the second task, presentation proposals are still being accepted by the ADCIS program chairperson, John Hirschbuhl. You may make a 20 minute topic presentation, a 7 minute project report, or present a commercial seminar.

The conference will be held from February 26 to March 3, 1979 in San Diego, so time is of the essence in submitting materials. Full papers are not expected at this time, only two to three page abstracts. You can write something now to meet this deadline and develop your full paper in the next few months. John Hirschbuhl is at the University of Akron, Akron, OH 44325.

There are many activities that I would like to see this SIG undertake. These include sponsoring professional workshops on CBT, developing standards for CBT products, maintaining a library of CBT products, publishing a "Who's Who" in CBT and a directory of where to find what, and sponsoring professional competitions on CBT system development. With your support, we will be able to make these things happen.

CMI AT UNITED (from page 1)

35mm slide/tape programs, but have also used videocassettes and written materials. The development of LRs was a longer process and was just completed, in terms of the final products, in April, 1978.

The results have been worth the efforts. The average time to take tests on the PLATO terminals has been between 16 and 20 hours per pilot. Pilots have mastered all of the tests in as little as three and a half days and none have taken more than 17 days. The average was around 7 days.

As of May 5th we had started 177 students. Of that total, 107 pilots have completed all of their training and have gone to work. A telling figure is that compared to a conventional 4 week program, we have 27 pilots on the line in a productive capacity.

Clearly, Criterion-Referenced In-

struction as administered with the help of the PLATO Computer-Managed Instruction system works in our environment.

THE SOLUTION (from page 3)

ship is available from the ADCIS Secretary/Treasurer, Ms. Joan Lauer Hayes. Her address is Western Washington State College, Bellingham, WA 98225. ADCIS membership includes subscriptions to the ADCIS News and the Journal of Computer-Based Instruction, and membership dues for one special interest group.

If you are already an ADCIS member but not yet a member of any other SIG, you may join the SIG CBT by simply requesting this classification from the Secretary/Treasurer. If you already belong to another SIG, you may become a member of the SIG CBT by paying an additional \$5.00 fee.

ADCIS SIG CBT
c/o Jesse M. Heines
Digital Equipment Corp.
Crosby Road
Bedford, MA 01730

(Address Correction Requested)