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TITLE: Adult Learning Styles and the Effectiveness of Computer  
Based Training: An Untilled Research Field

PRINCIPAL INVESTIGATOR: Joseph Francis McKeon

CONTRACTING ORGANIZATION: U.S. Army School of Aviation Medicine  
Fort Rucker, Alabama 36362-5377

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Joseph Francis McKeon

**7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)**U.S. Army School of Aviation Medicine  
Fort Rucker, Alabama 36362-5377

E-Mail: HJWAIN@EROLS.COM

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# MidTerm Overall Evaluation Report



PROPOSAL: 2000000144

TITLE: Adult Learning Styles and the Effectiveness of Computer Based Training: An Untilled Research Field

## ACCOMPLISHMENTS

During the first half of this project, numerous computer-based classes have been developed to enable asynchronous instruction to be provided to health care professionals. Previous research has proven the effectiveness of computer-based training, and this project has endeavored to elucidate which particular methods are most acceptable to the various student populations. Thus far in this project we have validated several theories that may seem intuitive, but had not been effectively studied. Clinicians are an especially impatient student population. They will not embrace a cumbersome program that takes an excessive amount of time to download, even if there is a significant educational benefit. "Bells and whistles" such as imbedded video and interactivity are desirable to the point where they impede completion time of the module of instruction. Most physicians would prefer a simple "page turner" digital product to an imbedded video presentation that drags on and on. The loss of control of pace inherent to a streaming video product is considered sub optimal. In addition, during this project we discovered that it is not practical to expect ready availability of the high band-width required to produce a high quality video presentation. Band-width issues can be ameliorated through alternate delivery vehicles, such as CD Rom, and we are continuing to explore this medium. The infrastructure developed during the first half of this project has allowed on-line delivery of learning objects, as well as testing of students. A knowledge management system has been purchased which allows tracking of student completion of modules, or failure to do so. It has also allowed the investigators to capture objective measures of student performance (e.g. test scores) on individual blocks of instruction. As of this report, we have not, however, been able to capture the amount of time the student spends on individual pages of instruction in order to better understand student learning and study habits. We will continue efforts in this area during the second half of the study.

PI's Accomplishment Evaluation: : Project Accomplishments Match Proposal

## PROBLEMS

The primary stumbling block during this phase of the project has been developing educational product to convert to computer-based instruction. The conversion of a digital slide presentation (e.g. PowerPoint) once it is developed is relatively uncomplicated. Imbedding video and/or sound is not technically difficult, and software continues to evolve which makes this process easier for non-technical educators. The rate-limiting step continues to be the development of the product that needs to be converted (e.g. the "notes" version of the presentation). The process of developing educational material is continuing, but during the past six months was frequently overcome by unit requirements. Renewed efforts to convert didactic training to computer-based training will be made in the second quarter of FY 2002.

There were some miscommunications with respect to IRB approval of this project, but as there are no risks to humans or animals, this project qualifies as "exempt." I expect this to not be a problem in the future.

PI's Problem Area Evaluation: : Project encountered no significant problems/issues

## LIFE-CYCLE

During the second half of the project it is anticipated that development of a comprehensive, stand alone course of instruction in aviation medicine will be finished, and utilized to provide sustainment training for aviation medicine clinicians who have not practiced aviation medicine skills in the past five years. This training is critical to support operational needs in the field, where the number of flight surgeons available for deployment is markedly less than the number available. By leveraging the use of previously trained flight surgeons, this product will help answer an operational medicine requirement. The completed course of instruction will then be utilized to better appreciate the learning processes and study habits of adult learners utilizing computer-based training. Completion of on-line and written requirements will be utilized to measure the effectiveness of this training.

PI's Life-Cycle Evaluation: : Project encountered no significant problems/issues

## DELIVERABLES

During the second half of the project it is anticipated that development of a comprehensive, stand alone course of instruction in aviation medicine will be finished, and utilized to provide sustainment training for aviation medicine clinicians who have not practiced aviation medicine skills in the past five years. Completion of on-line and written requirements will be utilized to measure the effectiveness of this training. I expect to meet the deliverable timeline.

PI's Deliverables Evaluation: : Deliverable is on schedule per Proposal

## Expenditures

Element of Resource (EOR)	1ST Quarter Oct 1 - Dec 31	2nd Quarter Jan 1 - Mar 31
Travel 2100	\$1,660.68	\$10,268.77
Shipping 2200	\$0.00	\$0.00
Rent & Communications 2200	\$0.00	\$0.00
Contract for Services 2500	\$20,000.00	\$153,505.69
Supplies 2600	\$21,477.83	\$548.76
Equipment 3100	\$27,065.00	\$1,650.00

## Financial Narrative:

During the first fiscal quarter of this project, a total of \$70,203.51 was spent. The bulk of these fiscal resources were invested in automation products to facilitate the delivery of computer-based training. During this period, an Enterprise Class server, two laptop computers, two CD duplicator towers and authoring software were purchased. During the second quarter, additional automation equipment and resident training in Flash and Dreamweaver authoring programs were provided for the USASAM information management specialist.

This project has been conducted in close coordination with the Center for Total Access (CTA) out of Fort Gordon, GA. The majority of funds spent to date have been utilized to contract for services through the CTA. Services utilized include computer programmers, graphic artists, and financial and project management specialists. In addition, the CTA has been very helpful in the IRB process.

PI's Financial Evaluation: : Deliverable is on schedule per Proposal

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**\* END OF REPORT \***