Research Report 1405

The Evaluation of the Army Education Information System

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

This Research Report covers the development and evaluation of the Army Education Information System (AREIS). AREIS is a microcomputer-based system designed to help Army Education Center Counselors provide soldiers with quality career and vocational information.

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The U.S. Army Research Institute conducts research and development in educational technology with applicability to military education and training. Of special interest is research in the application of computer technology. The development and implementation of computer-based systems is seen as a solution to current Army problems such as the management of career and educational information available to soldiers.

This report reviews the development and field test of one such system--the Army Education Information System (AREIS). This computer-based tool to aid Education Center Counselors is designed to enable soldiers to assess their individual career interests. The field test of AREIS indicated that the AREIS courseware and software operated as designed and soldiers were favorable toward the value of the system.

EDGAR M. JOHNSON
Technical Director

THE EVALUATION OF THE ARMY EDUCATION INFORMATION SYSTEM

EXECUTIVE SUMMARY

Requirement:

To develop a computer-based Army career and educational guidance system in order to reduce the routine information dispensing tasks of Education Center Counselors and to aid soldiers in making decisions about their careers.

Procedure:

The Army Education Information System (AREIS) is composed of courseware which enables soldiers to assess their individual career interests, values, and aptitudes. The AREIS provides online administration and interpretation of three self-assessment devices used in civilian career guidance that help the soldier broaden or narrow his career choices. Using the assessment profile, system software can generate a list of appropriate career choices by matching the soldier's responses to a database of over 400 civilian jobs and their corresponding military occupational specialty (MOS). AREIS also provides information on local educational and training course offerings. This system was evaluated for a 9-month period at three Army sites, Fort Gordon, Georgia; Fort Meade, Maryland; and Mannheim, Germany, in a multi-user microcomputer environment.

Findings:

The majority of the AREIS courseware and software operates as designed. Soldiers expressed positive attitudes about the value of the AREIS information. Difficulties with the hardware were observed at the three test sites.

Utilization of Findings:

AREIS is being considered for implementation by the Defense Activity for Non-Traditional Education Support.

THE EVALUATION OF THE ARMY EDUCATION INFORMATION SYSTEM

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THE EVALUATION OF THE ARMY EDUCATION INFORMATION SYSTEM

INTRODUCTION

Army Education Center Counselors spend many hundreds of hours each year providing soldiers with career and educational information. This information is extensive, complex, often routine, and subject to change at any time due to the dynamic nature of Army regulations. At a time when career and educational options are proliferating and the volume of data relating to these options is increasing, the number of Army Education Center Counselors is decreasing. Hence, it is important to develop a mode of delivery which will rapidly and accurately dispense routine career and educational information to soldiers so that Counselors can engage in the activities for which they were trained: counseling and consultation.

The Army Education Information System (AREIS) was designed to support the requirements of Army Education Center Counselors. This document will review the design and development of AREIS and focus on the evaluation of the system. This effort was accomplished in two phases over a four year period. The first phase covered the administration of a Needs Assessment and the development of preliminary specifications for AREIS. An analysis of hardware options was also produced. During the second phase the specifications were refined and the AREIS courseware and software were produced to operate in a microcomputer environment. AREIS was evaluated during this phase at three Army sites.

THE FIRST PHASE

In 1979, the Adjutant General Center, Education Directorate, Department of the Army, charged the U.S. Army Research Institute (ARI) with the task of developing a prototype for an Interactive, computer-based system which would be placed in Education Centers for the purpose of providing servicemembers Information about military and civilian career and educational opportunities. ARI contracted with DISCOVER/American College Testing Program to assess Education Center personnel-perceived needs and to develop such a prototype.

A world-wide Needs Assessment was conducted to determine the counseling activities of Education Services Officers and Education Center Counselors (Harris-Bowlsbey and Rabush, 1979). The Needs Assessment survey also requested Information about attitudes towards using computers In the counseling program. The following conclusions were drawn from the needs assessment:

- o the Counselor caseload averages 1600 soldiers per year
- o Counselors counsel approximately 64% of their assigned load In a year
- o each Counselor averages 2400 Interviews per year
- o the primary delivery mode of counseling services Is the one-to-one Interview (52%)
- o Counselors provide Information on approximately twenty different Army Continuing Education System (ACES) programs
- o Counselors view the Infusion of a computer-based Information system Into the Education Center as positive, both for themselves and for soldiers.

The Needs Assessment Identified a need for an alternative delivery mode for Information about the ACES programs. It also Identified the kind of Information which would be the most useful to Counselors and soldiers. As a result of the Needs Assessment, the following design requirements were Identified:

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The computer-based system should contain two interacting parts:
a) a series of concise interactive, personalized instruction
and guidance scripts for use by soldiers, and b) a set of direct
access functions which would call up information found in the
soldier subsystems.

The design requirements were used to conceptualize the four subsystems of
AREIS. Three subsystems, designed for use by soldiers, included:

Subsystem 1: ORIENTATION, containing an overview of AREIS content
and operation and an introduction to the services of
the Education Center and to the ACES programs.

Subsystem 2: SELF-INFORMATION, containing three on-line assessment
devices related to interests, abilities, and work-
related values.

Subsystem 3: GOALS AND PLANNING, containing several parts related
to military and civilian career and education goals.

The fourth subsystem, the COUNSELOR/ADMINISTER Subsystem, was designed for use

by Education Center staff only. Here Counselors could access the Education

Record Form 669, could build a database pertaining to the activities and

services of their specific center and post, and could access the database

which supported the soldier subsystems (e.g., Army Military Occupational

Specialties (MOS's) and civilian occupations).

Selected parts of the conceptualized system were scripted and programmed

for the development of a prototype. These parts were:

o All of Subsystem 1 - ORIENTATION
o Interests assessment and interpretation in Subsystem 2 - SELF-
INFORMATION
o The goal, "To Complete a Next Step in Education," in Subsystem 3 -
GOALS AND PLANNING
o A demonstration of the COUNSELOR/ADMINISTRATOR Subsystem

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The AREIS prototype underwent a limited field tryout at Fort Sill, Oklahoma. AREIS was programmed in the PLANIT language and delivered on two terminals connected by telephone line to a UNIVAC 1108 at the Edgewood Arsenal, Maryland. During the three-week field tryout 64 soldiers and 12 Counselors used AREIS.

Findings from the field tryout are summarized as follows:

1. AREIS courseware and software was generally ready for operation, however some hardware problems would have to be resolved before the system could be placed in operation.

2. Soldiers perceived interaction with AREIS to be useful and interesting and accepted the help of a computer for educational and vocational planning.

3. Although there was no significant change in the specification of educational and vocational plans of soldiers as a result of using AREIS, this lack of effect seemed to be due more to the limitations of the field tryout experience than to the content of the system itself.

4. Education Center personnel reacted very favorably to AREIS; they perceived the computer to be a valuable tool to assist with educational and vocational planning.

5. Education Center personnel viewed the style of presentation as appropriate for Education Center clientele and felt that the information was presented accurately.

6. Although the PLANIT software was usable for the development of AREIS, a number of problems make it inappropriate for full-scale implementation of AREIS. These problems included the scrolling of the text on the screen, the restriction of user responses to one per screen, and the mobility of PLANIT to support databases.

Although the number of participants was small and AREIS was not complete, results of this tryout suggested that, with a larger sample over a longer period of time, the following would be obtained:

1. AREIS could be placed in Army Education Centers and receive the support of Counselors and other staff members.

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2. AREIS would be viewed by soldiers as a highly useful, interesting, understandable, and acceptable way to get information about self, about educational programs, and about career options.

3. AREIS could help soldiers develop educational and vocational plans.

After the field tryout of AREIS at Fort Sill, Oklahoma an assessment of the AREIS delivery system was made. Four hardware configurations were considered for the further implementation of AREIS:

1. AREIS would operate on existing hardware at each post.

2. AREIS would run on a centrally located mainframe computer and be delivered to each post on terminals connected to the mainframe by telephone lines.

3. AREIS would operate in a distributed network environment in which microcomputers would use AREIS courseware stored on a mainframe but maintain independent data storage.

4. AREIS would run independently on microcomputers located at each post.

The four hardware configurations were evaluated against the following criteria:

1. AREIS courseware must include the Soldier Subsystems and the COUNSELOR/ADMINISTRATOR Subsystem which includes the computer storage and retrieval DA Form 669.

2. The computer which delivers AREIS must be capable of expansion to support other computerized functions or systems which the Army may develop (e.g., transcript registry program; the computerized system for evaluating ACES programs; and a management information system) for use in Education Centers.

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3. Communication via the computer must be established "horizontally" among Education Centers and "vertically" through the Army education system; that is, among these Centers, the Education Divisions of the Major Commands, and the Education Directorate, Headquarters, Department of Army.

4. A mean response time of five seconds or less for soldier interaction is required.

5. The system must be capable of handling terminals in a variety of configurations since Army posts vary greatly in size and Education Centers may be either centralized or decentralized in physical setting or function.

6. Individual Education Centers on posts will provide a minimum of technical support to the system, such as turning the system on and off each day and generating and/or maintaining local information on the system.

Table 1 summarizes the analysis of the system requirements against the four proposed hardware configurations. It was determined that further development of AREIS would utilize microcomputers operating at each post independently. More information about the rationale for this decision may be examined in Harris-Bowlsbey and Rabush, 1980.

Table 1

Proposed System Configuration and SubSystem Requirements

Requirements	Total AREIS Systems to include Form 669 storage or retrieval	Support of other computerized functions such as might be developed later	Communication link among Army posts, MACOM's, and Department of Army	Response time of less than 5 seconds	Capable of handling terminals in a variety of configurations	Capable of operation with minimum of on-site technical aid
System Configuration	1	2	3	4	5	6
Existing Facilities	No	No	No	No	Yes	Yes
Mainframe Computer	Yes	Very Doubtful	Yes	Very Doubtful	Yes	Yes
Distributed Network	Yes	Yes	Yes	Yes	Yes	Yes
Microcomputer	Yes	Yes	Possible	Yes	Yes	Yes

Note. Adapted from Cost/Benefit Analysis of the Army Education Information System (Research Note 82-4) by J. Harris-Bowlsbey and C. Rabush. Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, November 1980.

The first phase of the project provided functional specifications for the courseware, software, and hardware of AREIS. A limited field tryout indicated the support of potential system users regarding the value of the AREIS information and the use of computers in the counseling process.

THE SECOND PHASE

In 1981 ARI contracted with DISCOVER/American College Testing Program to complete the second phase of the AREIS project. During this phase the AREIS concept was refined and the complete courseware for the four subsystems was developed. Two hardware systems were selected and AREIS was programmed to operate on these systems. AREIS was evaluated during a nine-month field test at three Army sites.

Completion of AREIS Courseware

Parts of previously developed courseware were revised to include information on government policies and regulations governing various ACES programs which had been put in place after the initial development of the scripts. This work focused mainly on the information in Subsystem 1-ORIENTATION, and on the goal, "To Complete a Next Step in Education," in Subsystem 3-GOALS AND PLANNING.

During the development of Subsystem 2-SELF INFORMATION a literature search was conducted on military work values. The search indicated that military and civilian work values are highly congruent. It was therefore determined that AREIS would include three self-assessment devices created for civilian career guidance. A database was created which matched 425 civilian careers with military occupational specialties. The SELF-INFORMATION Subsystem generates lists of military or civilian occupations based on the soldier's responses to the UNIACT Interest Inventory (@ 1978), an Abilities Survey, and a Work-Related Values Survey.

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Scripts for the goals in Subsystem 3 were developed. These goals Include: Getting Promoted, Developing New Interests, Getting Job Skills, Completing the Next Step In Education, Planning a Military Career, Improving MOS Proficiency, Selecting Another MOS, Improving Basic Skills, Deciding Upon Reenlistment, and Making a Vocational Choice.

The design of Subsystem 4-COUNSELOR/ADMINISTRATOR was revised. The decision to Include an automated DA Form 669 In Subsystem 4 was reconsidered. It was determined that the DA Form 669 could not easily be transferred to other posts with the selected microcomputer configuration of AREIS. Soldiers could not be expected to hand carry floppy disks from post to post with any greater degree of success than that with which they presently transmit the paper DA Form 669. Also It was determined that Counselors could access and update the paper version more readily than the computerized version because they would not have the terminals at their desks. Therefore, Subsystem 4 was scripted to provide crosswalk Information on military and civilian occupations, the capability to Input post-specific Information In various goals of Subsystem 3, and the capability to Input the master schedule of courses offered on or near post.

The complete content of AREIS scripted for the field test Is as follows:
Subsystem 1-ORIENTATION

        o Contents and operation of AREIS

        o Services of the Education Center

        o Brief description of Army Continuing Education System programs

Subsystem 2-SELF-INFORMATION

    o   On-line administration and interpretation of

        a.   The UNIACT Interest Inventory (@ 1978, American

            College Testing Program)

        b.   A fourteen-item Abilities Survey

        c.   A sixteen-item Work Values Survey based on the work

            of Dr. Donald Super and the worldwide WORK IMPORTANCE

            STUDY

    o   Summary of assessment information and list of related

       occupations

Subsystem 3-GOALS AND PLANNING

    o   Getting Promoted

    o   Developing Some New Interests

    o   Getting Some Job Skills

    o   Completing a Next Step in Education

    o   Planning a Military Career

    o   Improving MOS Skills

    o   Selecting Another MOS

    o   Improving Basic Skills

    o   Deciding about Re-enlistment

    o   Making a Vocational Choice

Subsystem 4-COUNSELOR/ADMINISTRATOR

    o   Military and civilian occupations crosswalks

    o   Localization capability

    o   Master schedule of courses given on or near post

AREIS Hardware

It was determined that the configuration for each field test site would
be three student terminals attached to one hard disk, one printer, and one
floppy disk drive. Student data would be copied from the hard disk onto
floppy disks. Two brands of microcomputers were selected for the delivery of
AREIS. The Apple computer was chosen because the Education Centers of the
U.S. Army Forces Command use Apples. Three Apple microcomputers were
connected to a 10Mb CORVUS hard disk, a CORVUS Constellation Multiplexer
(MUX), and an Okidata printer. AREIS was presented in black and white. (See
Figure 1.)

FIGURE 1

Schematic of the Multi-user Apple Microcomputer

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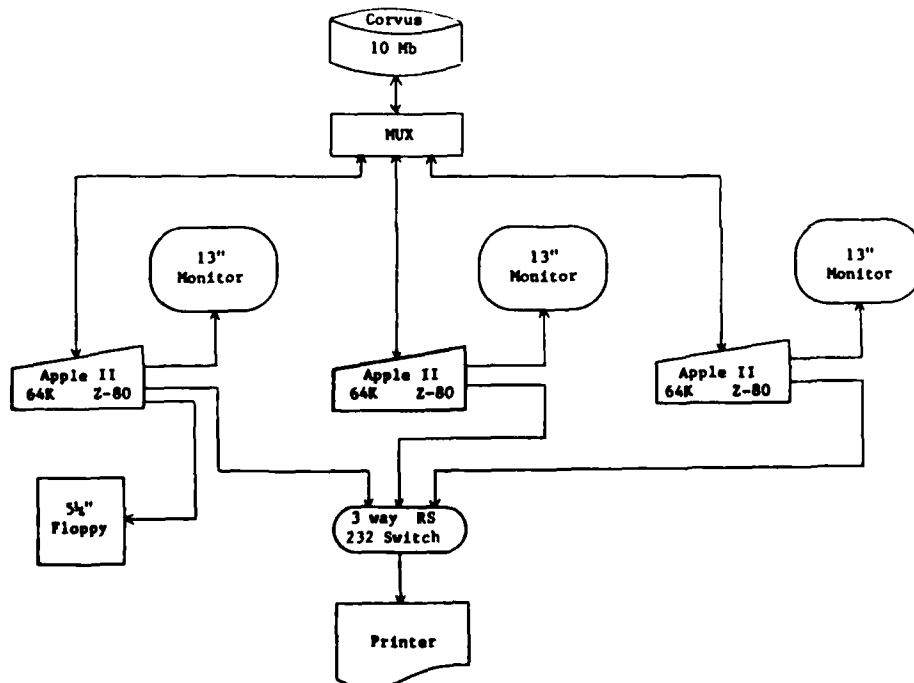
The DISCOVERY multiprocessor was selected as the second computer based on the need to provide a computer system which would run on the 220-volt, 50-cycle electricity used in Europe. This computer consisted of three keyboard/color monitor terminals connected to a central processor, a 33Mb hard disk, and an Okidata printer. (See Figure 2.) The DISCOVERY machine used in Europe also required a large transformer in order to operate correctly. AREIS was presented in color on the DISCOVERY microcomputer.

FIGURE 2

Schematic of the DISCOVERY Multiprocessor
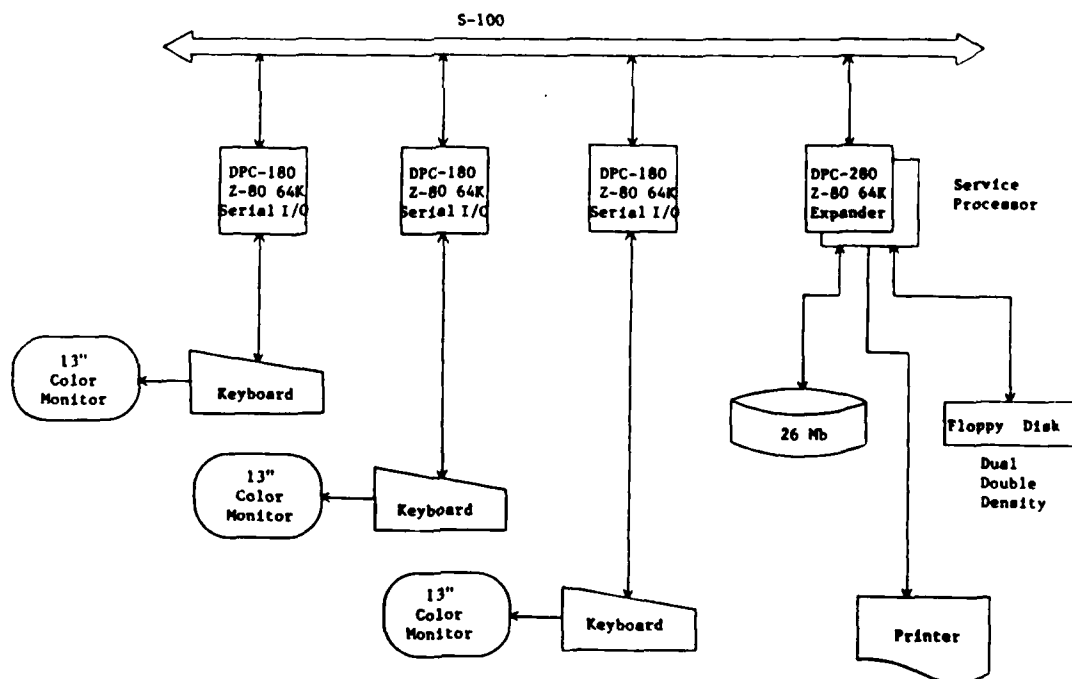
A single-user Apple system with 10mb CORVUS hard disk and Okidata printer
was installed for AREIS demonstrations at the Adjutant General Center,
Education Directorate Office in Alexandria, Virginia. (See Figure 3.)

FIGURE 3

Schematic of the Single-user Apple Microcomputer
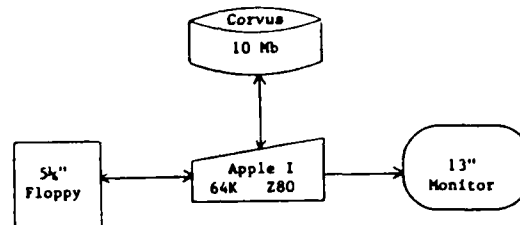
Programming AREIS

AREIS was programmed in PASCAL and used the CP/M operating system. AREIS
was programmed on the DISCOVERY microcomputer and then the programs were
modified to run on the APPLE microcomputer. The programs were designed to be
user friendly enabling soldiers to interact with AREIS courseware with or
without the assistance of a Counselor. User records were created to store and
monitor each soldier's experience and the computer provided feedback on
previous sessions upon re-entry into AREIS.

Documentation

AREIS was designed to operate at each post without external assistance such as an on-site contractor. Three documents were prepared to support the self-sufficiency of the system. An Inservice Training Guide was developed to familiarize the Education Center staff with the content of AREIS, the theory which supports the counseling approach of the system, and the role of the Counselor using a computer-based information system to provide guidance information. The guide was developed to be used by an Inservice Trainer identified at each post. A Counselor Guide was designed to provide more specific interpretations of the career analysis provided by AREIS. It also provides information on the technical operation of the AREIS hardware. Details are given on how to power-up the system, how to back up student records onto floppy disks, and how to enter data into the system which is specific to the educational opportunities at each post. A separate Technical Guide was developed which focuses on the operation of the AREIS hardware. A User's Guide was designed to assist the soldiers at the terminal by providing information on how to sign on and off the system and general information on the purpose of AREIS.

AREIS Evaluation

AREIS with its accompanying Inservice Training and documentation was evaluated at three Army posts during a nine-month field test. The objectives of the evaluation were as follows:

1. To assess the technical operation of AREIS software as conceptualized and implemented

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2. To assess any operating problems with the hardware

3. To assess soldier reaction to AREIS and to the use of a computer to obtain career and educational information

4. To assess Education Services Officer, Education Counselor, and other staff reaction to AREIS and to the use of a computer to provide career and educational information

5. To assess changes in the Education Center operation as a result of AREIS presence

The next section will describe the demographic characteristics of the three posts selected as AREIS field test sites, the typical counseling activities that occur at each post, and the installation of AREIS at each site.

Fort Meade, Maryland. Military personnel at Fort Meade, Maryland, are assigned to various branches of the armed services. The Army comprises 50% of the total, and the Navy, Air Force, and Marines comprise the remaining 50%. All of the Navy, Air Force, and Marine personnel and half of the Army contingent are assigned to the intelligence unit at the National Security Agency. Of the remaining 25%, the Military Police unit and the medical battalion are composed of soldiers who must be high school graduates and have an Armed Services Vocational Aptitude Battery score of 100+. At Fort Meade, most soldiers come to the Education Center to learn about college courses and to use the tuition assistance programs. Only a very small percentage of the total Fort Meade population can be considered BSEP (Basic Skills Education Program) eligible (4%), and an even smaller number (2.5%) have not graduated from high school.

At the Education Center, AREIS was Installed on the multi-user APPLE system and placed In a room and removed from the reception area and the Counselors' offices. This location was selected by the staff because the room could be secured during the hours that the Education Center was closed. The room was not In the normal traffic flow, and passersby could not see the AREIS computers. Soldiers using AREIS had some degree of privacy from other servicemembers waiting In the reception area to see a Counselor. The staff originally planned to place a Counselor In this room to monitor AREIS use; the decision was soon reversed, however, when the Counselor felt that counseling clients In the same area with AREIS users was an Impractical situation. The Counselor moved back to his office and the AREIS room was unmonitored for the remainder of the evaluation period.

Fort Gordon, Georgia. Approximately 16,000 Army personnel are In residence at Fort Gordon. Two signal corps training brigades, Involved In Advanced Individual Training (AIT) activities, comprise 35-40% of the population. The rest of the military component Is classified as permanent party, a large percentage of which Is Involved In the Instruction of the Signal AIT troops. Many permanent party soldiers who are becoming established In their military career go to the Education Center to evaluate their military experience for credit toward an Associate of Arts degree. These soldiers enroll In technical, electronics-related courses and use the tuition assistance program. The training brigade personnel do not use the Education Center for In-depth counseling or educational services; because they are heavily Involved with their military training, they have little time for other educational activities. They may request assistance In evaluation of college transcripts

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or information about College Level Examination Program (CLEP) or General

Educational Development (GED) tests.

The Education Center at Fort Gordon occupies several buildings: one

building houses the Administrative offices; one the Counseling Center; and one

the MOS Library. AREIS, installed on the DISCOVERY computer was, located

directly inside the main door to the Counseling Center, to one side of the

small reception area. Every soldier who came to the Counseling Center could

see the computer. Many times soldiers sat in front of the terminals as they

waited to see a counselor; however, signs placed on each terminal by the

Education Center staff requested that soldiers not use the computer until they

had seen a Counselor. Soldiers who were put on AREIS by a Counselor had no

privacy as they worked on the computer.

Mannheim, Germany. The Mannheim community is composed of several posts

located within close, but not adjacent, proximity to one another. The troop

population for this military community totals approximately 7,000 to 8,000

soldiers. Most of the units serve as combat arms and combat support;

consequently, soldiers spend most of their duty time in the field on training

maneuvers. A high percentage of these soldiers is high school educated;

however, many of them are rated as BSEP eligible.

Most of the posts in Europe have an Education Center of some kind,

ranging from one Counselor and a few courses to three or four Counselors, an

MOS Library within the building, education institution registrars, and many

ongoing courses. Because the soldiers spend so much time in the field, the

Education Centers must plan very flexible scheduling of their education

programs. The college programs offered are mostly lower level, technically

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oriented courses; there are very few "pure" liberal arts courses offered in Mannheim.

AREIS operated on two of the Mannheim posts, Sullivan Barracks and Coleman Barracks. The Sullivan Education Center housed the Mannheim Community Education Center administrative offices, one counselor, educational registrars, and classrooms. AREIS, installed on the DISCOVERY computer, was placed in a room between the Counselor's office and the classrooms. The computer was not readily visible by soldiers who were in the building to see a Counselor or to register for courses (education institution registrars were housed on the first floor of the building). It was visible to those soldiers who were attending classes in the evening. AREIS remained in this location for three months until or after which the building, about to undergo renovation, was closed and the staff and programs were moved to other facilities.

AREIS was reinstalled in the MOS library located at Coleman Barracks and was located there for the remainder of the evaluation period. This location was centrally located and close to the Counselors' offices. It was readily visible to soldiers coming to the MOS Library for reference materials and/or information about military coursework or for coffee during class breaks; and the MOS Librarian was always available, if necessary, to assist soldiers at the terminal.

Procedure. After AREIS was installed at each site, a Field Test Coordinator, usually a member of the counseling staff, participated in a four-hour training program on the operation of the AREIS hardware and software. A two-day Inservice Training Program was then presented to the Education Center personnel. This two-day program included:

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Information about the theoretical basis of AREIS
Information about the content of AREIS
In-depth hands-on experience at the AREIS computer to assure that all
Counselors and staff involved with soldiers were familiar with the
operation of the computer and with the AREIS content explanation of the
procedure which Counselors would use to collect data for the analysis of
the effectiveness of AREIS
These data, to be recorded on the daily counselor logs, would include:
  -- average length of interview for AREIS users and non-users
  -- kinds of action taken within the interview for AREIS
     users and non-users
Instruction to the Field Test Coordinators in backing-up the evaluation
data onto floppy disks or to a video tape recorder to protect the data
from some occurence which might erase the program (e.g., an
electricity problem or electrical storm)

The final activity prior to the onset of soldier use was the localization

of the AREIS data used in Subsystem 3-GOALS AND PLANNING. Local data

included, among others, the location of the MOS Libraries, the names and

addresses of the re-enlistment Non-Commissioned Officers, activities on post

which related to off-duty interests, a listing of all educational institutions

providing courses on post, and a master schedule of those courses. An

Education Center staff member was trained to use the AREIS author language to

input all the local information into Subsystem 4 of AREIS. Onsite personnel

were instructed to update these sections each time local information changed.

Once the installation and inservice training phase was complete, the

project staff departed and the Education Center staff began using AREIS as a

part of the ongoing Education Center activity. The Field Test Coordinator was

responsible for turning on the computer in the morning and turning it off in

the evening. All Counselors were instructed to invite soldiers to use the

system and to provide assistance with AREIS or the computer, if necessary.

The clerical staff was to introduce soldiers to the computer and also to

provide assistance in the update of the post-specific data (person appointed

by the Field Test Coordinator). The Field Test Coordinator was instructed to

back up the evaluation data every two weeks onto floppy disks or onto a video tape recorder. This process took from thirty minutes to one hour to complete.

Once soldiers entered the Education Center, they were invited by a Counselor or another staff member to use AREIS. If a soldier responded negatively, no effort was made to convince him/her to interact with the system. After signing on to the system by entering service number and name, the soldier completed an on-line pre-use questionnaire which requested data about age, rank, time in grade, time on post, approximate use of the Education Center; about personal progress related to vocational and education decision-making; and about attitudes toward using a computer to gain vocational and educational knowledge. The Pre-Use Questionnaire can be found in Appendix A. The soldier then moved through the AREIS content according to his/her needs and available time. Once the soldier learned the basic commands necessary to operate AREIS, the staff member withdrew. After the soldier concluded his/her interaction with AREIS the soldier responded to a post-use questionnaire (Appendix B) which was designed to elicit attitudes on the usefulness, interest level, and clarity of AREIS.

Four Pre-Use Questionnaire items were repeated on the Post-Use Questionnaire to assess any changes in vocational/educational decision-making and in attitudes toward the use of the computer for vocational and educational planning. Not all soldiers completed the Post-Use Questionnaire. This may have occurred because:

   the soldier had to leave and had no time to sign-off using the proper procedure.

   the soldier had difficulty and left without asking for help and without signing off properly.

   the computer malfunctioned and dropped the soldier out of the AREIS program.

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In these cases Counselors were able to restart the AREIS courseware without moving through the post-use questions.

Counselors and other staff members were encouraged by the Education Center Officers to use AREIS. Project staff interviewed these individuals about their opinions on the usefulness, interest level, understandability, and appropriateness of AREIS at the end of the field test. The Structured Interview for Counselors may be examined in Appendix C.

Participants. During the field test a total of 1,114 soldiers and Education Center staff members used AREIS. The 1,050 soldiers (80% male, 20% female) had served in the Army from zero to thirty or more years (mean time in service = 5.5 years) and had been in their present grades for an average of 2.5 years. They had been stationed at their current posts for an average of nine months and had used the Education Centers an average of five times. Table 2 provides a breakdown of those who used AREIS.

Table 2

AREIS Users

Rank	Number	Percent
E-2	144	13%
E-3	214	19%
E-4	254	23%
E-5	194	17%
E-6	123	11%
E-7	46	4%
E-8	23	2%
E-9	5	1%
Warrant Officer	15	1%
Officer	32	3%
Education Counselor/Others	64	6%
Total	1,114	100%

Findings. This section will present the findings of the evaluation based upon soldiers' responses to the Pre- and Post-Use Questionnaires, the Field Test Coordinators' logs, and the structured interviews with the Counselors. The findings are summarized according to the objectives of the evaluation stated previously.

> Objective 1: To assess the technical
> operation of the AREIS software as
> conceptualized and implemented.

Generally, the AREIS software functioned well during the Field Test. Eighty-one percent of the soldiers who responded to the Post-Use Questionnaire reported that they had no difficulty using AREIS. (See Table 3.) Because of the on-line method of collecting the evaluation data, there is no way to ascertain if soldiers who left AREIS prior to responding to the Post-Use Questionnaire had difficulty with the machine or the software or if they left for other, unrelated reasons.

Table 3

Operation of AREIS

Did you have any of these problems?

1.	Trouble with the computer	182	11%
2.	Directions for using the computer were not clear	42	3%
3.	Directions for using AREIS were not clear	33	2%
4.	It was boring	51	3%
5.	No problems	1,322	81%
		1,630	100%

There is no evidence of users having difficulty operating AREIS in

Subsystems 1 and 3. In the structured interviews at the conclusion of the

Field Test, however, some Counselors noted that information dealing with ACES

programs had become out of date due to changes in policy since the AREIS

scripts were written. The Field Test Coordinator at Fort Meade observed that

the MOS designations for officers appeared to be Air Force numbers rather than

Army numbers and the Coordinator at Fort Gordon felt that the MOS/Civilian

occupation articulation for Signal-related MOS's was not complete, the

promotion procedure needed to be updated, and that more information needed to

be added to each topic area.

In Subsystem 2, the programming of the interpretation of the Abilities

Survey caused frustration for some soldiers who rated many of their abilities

equally. The program would not produce a list related to the soldiers input

if: the soldier scored a three-way-or-more tie on the six ability pairs or if

the soldier entered an educational level which had no occupations in the

ability areas rated high by the soldier. For example, if a soldier rated very

high on manual/mechanical abilities and requested careers requiring a graduate

school educational level, no occupations could be identifed because there are

no graduate level manual/mechanical-related occupations in the AREIS data

file. This problem was observed early in the Field Test. The AREIS software

was not modified however because the hard disks would have had to have been

removed from the Field Test sites, reprogrammed, recompiled, and re-

installed. It was determined that this would be too expensive and time-

consuming. Therefore the Education Center Counselors were given a written

explanation of the problem with the interpretation of the abilities survey and

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documentation for the User's Guide which explained possible remedies for the soldier who encountered the problem.

Another situation occured at Fort Meade throughout the Field Test. A soldier who returned to AREIS sometimes received a "string too long" message when entering the service number. At this point the computer would return the user to the CP/M operating system, causing confusion as to how to proceed. A Counselor would have to type in AREIS in order to reinitialize the sytem. Counselors did not keep a record on the number of times that this situation occurred; hence there are no hard data on the severity of the problem. Counselors did report the situation to project staff; however, due to the lack of access to an Apple computer for extensive testing in the exact condition as the Fort Meade machine, there was no way to conduct testing that would determine if the problem was software or hardware related.

In the Structured Interview, Counselors related that soldiers were often frustrated by the inflexibility of the AREIS software. Although AREIS itself allows users to move freely among the various sections of the system, to back up as many frames as desired, and to copy or exit from any screen, soldiers who were viewing the entry (Pre-Use Questionnaire) and exit (Post-Use Questionnaire) sections were often frustrated because they were required to respond to each frame in order. It must be stressed that this inflexibility was a function of the on-line evaluation sections that were needed to analyze the operation and impact of AREIS program and its use. An operational AREIS would not contain these evaluation sections.

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Objective 2: To assess any operating

problems with the hardware.

The Field Test uncovered a number of hardware-related technical

problems. These problems affected opinion about AREIS on the part of soldiers

and Counselors alike. Eleven percent of the soldiers reported "having trouble

with the computer;" (see Table 3) and thirty-six percent of the Counselors

felt that the computer was "broken too much" (See Table 4).

Table 4

Counselor Reactions to AREIS Operation

The worst thing about AREIS was (more than one answer)

1.	The machine was broken too much	9	36%
2.	There wasn't enough information that soldiers wanted to know	5	20%
3.	There was too much content; it took too long for soldiers to go through; it was confusing	9	36%
4.	Working with a machine; it was too impersonal	1	4%
5.	All of the above	0	0%
6.	No Response	1	4%
		25	100%

Some of the technical problems appeared to be related to the specific

kind of computer. These will be discussed individually.

The Fort Meade Apple system had problems with tracking soldier records.

First, the CORVUS hard disk assigned the AREIS program to one area in the hard

disk which was common to all three computers. It also assigned each computer

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to its own separate storage area; hence, soldiers had to return to the same computer each time they used AREIS. If they used another computer, the hard disk would not be able to access their previous records and could not "remember" them. To facilitate soldiers returning to the same computer, the machines were labelled alphabetically (e.g., soldiers with last names of A-H used computer 1, I-Q used computer 2, and R-Z used computer 3).

Second, when soldiers wished to make copies of information seen on the screen of a particular computer, they had to activate a separate switch box so that the printer could identify the computer requesting the copy. This situation was cumbersome when more than one soldier was interacting with AREIS at the same time. Also, the knob on the box came off periodically. The Fort Meade Coordinator finally used super glue to affix the knob permanently.

The Fort Gordon DISCOVERY computer was plagued with start-up problems; on an average of three times a week, the computer would boot up one or two terminals instead of all three. This situation meant that often the Counselor in charge of initializing the system had to spend a half hour or more trying to get all three terminals running. The Field Test Coordinator characterized the system as "unreliable, inconsistent, and impossible to keep running." Approximately two months after the beginning of the Field Test, new chips were installed in the DPC boards of the computer; at that time all terminals started up. The adjustment gradually deteriorated after several months until the computer again would not boot all three terminals.

The Field Test Coordinator also reported difficulty in cleaning the filters on the machine. The DISCOVERY unit has three parts, the service processor, the disk drive unit, and the hard disk, which sit one on top of the

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other. To clean the hard disk filter, the computer must be disassembled, which was a time-consuming task.

The Mannheim DISCOVERY computer operated successfully for three months prior to its move to a new location. Shortly after the transfer of the equipment, the machine stopped running and several of the micro chips had to be replaced. It is not known if the move caused the subsequent breakdown. The system was repaired but broke down four months later. This time the failure of the machine appeared to be gradual in nature. The Coordinator at Mannheim reported that the start-up process took longer and longer until it finally would not start at all. After a series of trouble-shooting activities the system was repaired. The lack of service facilities was a severe problem at the Mannheim site.

Another problem appeared to be common to all of the computers. The Counselors reported that the computer occasionally dropped out of the AREIS program and back to the CP/M operating system. This might happen when no one was using AREIS; in this case a staff member would restart AREIS before a soldier began the program. The problem sometimes occurred while a soldier was using AREIS. This situation was more serious because the record of the AREIS session was lost, and, after AREIS was reinitialized, the soldier had to redo the activities that had previously been completed if that information was to be stored in the computer. There is a strong possibility that the "drop out" situation was caused by an uneven source of electricity. The hard disk is designed to spin at a constant speed of 3000 rpm. A dimunition of electricity could slow the disk speed, causing the head to drop down at the wrong spot on the disk. The computer, unable to read the correct data, aborts the program, and returns to the operating system level. All the buildings in which AREIS

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was installed are World War II vintage; it is highly likely that these buildings are not wired adequately for the computer to run successfully along with other kinds of equipment, such as electric typewriters, coffee pots, and air conditioners. The presence of an uncommon amount of dust and dirt in the environment also creates a potential for operational difficulties in microcomputers. Dirt in the fan assembly and filters were found in the Mannheim and Fort Gordon computers. The Education Center at Fort Meade was not located near any training area; therefore, the environment was not so dust-laden as the other two locations. A preventive maintenance schedule should have been established when the equipment was installed.

Objective 3: To assess soldier reaction to AREIS and to the use of a computer to obtain career and educational information.

As in the previous limited field tryout of AREIS, the majority of soldiers who used AREIS reacted very favorably to the program and to the idea of receiving career and educational information from a computer. Specific findings elicited from the Pre- and Post-Use Questionnaires follow.

Analysis of the Pre- and Post-Use Questionnaires dealing with usefulness of AREIS for career and educational planning indicates that soldiers felt very positive about the use of a computer for these kinds of activities. In the pre-treatment questionnaire, 83% of the soldiers responded favorably about using AREIS for career planning, while 85% felt that a computer could help with educational planning. After using AREIS, those percentages rose to 86% and 87% respectively (See Table 5).

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Table 5

Usefulness for Planning

Question	Pre-Use Questionnaire N=1050	Post-Use Questionnaire N=1050
For help with my career planning, a computer would be:		
1. Very useful	54%	63%
2. Useful	31%	23%
3. Undecided	14%	9%
4. Not very useful	1%	2%
5. Not at all useful	0%	3%
For help with my educational planning, a computer would be:		
1. Very useful	52%	61%
2. Useful	35%	25%
3. Undecided	12%	8%
4. Not very useful	1%	3%
5. Not at all useful	0%	3%

Little movement toward specification in the areas of career and educational planning took place within the total population who used AREIS. (See Table 6.) More than seventy percent of the soldiers used AREIS only one time; for this population the treatment process was too short to have produced any measurable change.

Table 6

Specification of Plans

Question	Pre-Use Questionnaire N=1050	Post-Use Questionnaire N=1050
At this point, I have:		
1. No idea about my future career plans	19%	18%
2. Some vague ideas about my future career plans	38%	36%
3. Narrowed future plans to 2 or 3 choices.	29%	30%
4. Narrowed future plans to 1 certain career.	14%	16%
At this point, I have:		
1. No idea about my educational plans.	15%	17%
2. Some vague ideas about my educational plans.	40%	35%
3. Narrowed my educational plans to 1 or 2 possible types	35%	31%
4. Selected one program for more education or training.	10%	17%

Because so many soldiers had interacted with AREIS only once, the project staff identified a sub-sample of the total population which had used the program at least two times, with a minimum of sixty days elapsing between the first and last interaction. An analysis of the opinions of these fourteen repeat users shows somewhat different results. On the Pre-Use Questionnaire 100% of the users felt that use of a computer would be useful for career and educational planning. On the Post-Use Questionnaire, the percentage reporting

very favorable or favorable opinions dropped to seventy-one percent. (See Table 7.) In each case the difference was statistically significant. This change in attitude may be a reflection of overly optimistic expectations for computers initially, or may have resulted from frustration with equipment problems.

Table 7

Opinions of Sub-sample on Planning

Question	Pre-Use Questionnaire N=14	Post-Use Questionnaire N=14*
For help with my career planning, a computer would be:		
1. Very useful	71%	64%
2. Useful	29%	7%
3. Undecided	0%	7%
4. Not very useful	0%	7%
5. Not at all useful	0%	14%
Mean	1.3	2.0
For help with my educational planning, a computer would be:		
1. Very useful	64%	57%
2. Useful	36%	14%
3. Undecided	0%	21%
4. Not very useful	0%	0%
5. Not at all useful	0%	7%
Mean	1.3	1.9

*This number represents users who interacted with AREIS on dates at least 60 days apart.

In the area of career planning, the sub-sample of fourteen subjects showed little movement toward specificity. (See Table 8.) On the Pre-Use Questionnaire 57% of the respondents indicated that they had narrowed their career choices to two or three choices. The same respondents showed movement on the Post-Use Questionnaire, but in both directions, which would appear to indicate that AREIS aided some soldiers (22%) to become more definite in their career plans while it caused some soldiers (7%) to begin to rethink their futures with regard to careers.

Describing their educational planning on the Pre-Use Questionnaire, 50% of the soldiers had narrowed their choices to one or two programs and 14% had selected one specific program. By the time these soldiers finished their last AREIS use, an additional 15% had moved toward specificity of educational choice. (See Table 8.) No statistically significant difference was found to exist in the Pre- and Post-Use responses dealing with careers or education.

Table 8

Opinions of Sub-sample about Specification of Plans

Question	Pre-Use Questionnaire N=14	Post-Use Questionnaire N=14 [*]
At this point, I have:		
1. No idea about my future career plans.	21%	21%
2. Some vague ideas about my future career plans.	14%	21%
3. Narrowed future plans to 2 or 3 choices.	57%	29%
4. Narrowed future plans to 1 certain career.	7%	29%
At this point, I have:		
1. No idea about my educational plans.	7%	7%
2. Some vague ideas about my educational plans.	29%	29%
3. Narrowed my educational plans to 1 or 2 possible types of training.	50%	36%
4. Selected one program for more education or training.	14%	29%

[*]This number represents users who interacted with AREIS on dates at least sixty days apart.

Soldiers also responded to a post-use question about which part of AREIS was the most useful. As in the field tryout at Fort Sill, soldiers indicated that Subsystem 2, SELF-INFORMATION, was the most helpful section of AREIS. (See Table 9.) Nearly one-third of the soldiers believed that Subsystem 3, GOALS AND PLANNING, was the most helpful.

Table 9

Most Useful Part of AREIS

Question	N = 1050

Which part of the AREIS was the
most useful to you?

1.	Orientation (Part I)	23%
2.	Self-Information (Part II)	48%
3.	Goals & Planning (Part III)	29%

Counselors also felt that Subsystem 2 was very useful to their clients. When asked to select the most useful parts of AREIS, 16% selected the interest inventory; 11% selected the abilities survey; and 10% chose the values section. These percentages were among the highest responses to that question.

Similar soldier responses were found in the area of interest. Table 10 shows that almost one-half of the soldiers found Subsystem 2, SELF-INFORMATION, to be the most interesting part of AREIS.

Table 10

Most Interesting Part of AREIS

Question	N = 1050

Which part of the AREIS was the
most interesting to you?

1.	Orientation (Part I)	24%
2.	Self-Information (Part II)	45%
3.	Goals & Planning (Part III)	31%

It was also important to learn whether soldiers could understand the information being delivered via the AREIS program. Table 11 indicates that an overwhelming percentage of soldiers reported no difficulty with understanding the content of the system.

Counselors were less positive in responding to this issue. While thirty-one percent felt that soldiers had no difficulty with words or ideas; twenty-five percent felt that soldiers had problems with both words and concepts. Some counselors felt that the soldiers had difficulty moving around in the system and wished that AREIS could be simplified and more menu-driven than is presently the case.

Table 11

Understandability of AREIS

Question	N = 1050
What about the words used in AREIS?	
1. I could understand everything.	92%
2. I didn't understand some words.	4%
3. I didn't understand a lot of it.	4%

Regarding acceptance of the system, soldiers responded overwhelmingly in the affirmative once again. Ninety-five percent indicated that they would recommend AREIS to a friend. When asked how much they enjoyed their AREIS experience, 83% said that using AREIS was very enjoyable or quite enjoyable; only 3% answered in the negative.

Objective 4: To assess Education Service

Officer (ESO), Education Counselor, and

other staff reaction to AREIS and to the

use of the computer to provide career/

education information.

At the end of the Field Test, opinions were collected from the Education

Center staff by structured interviews. The questions dealt with the accuracy,

appropriateness, and completeness of the content in the Soldier and the

COUNSELOR/ADMINISTRATOR Subsystems, the level of usefulness of the

COUNSELOR/ADMINISTRATOR Subsystem, and perceptions dealing with the "best" and

the "worst" things about AREIS. Due to the personnel changes which had taken

place at these posts, not all Counselors who participated in the Field Test

were available to participate in the end-of-test activities. A total of

sixteen staff members took part in the interivew sessions. The following

information is a summary of findings elicited through the interview process:

sixty-nine percent of the Counselors reported that the content in the Soldier

Subsystems of AREIS is moderately to very accurate. There was less agreement

with regard to the COUNSELOR/ADMINISTRATOR Subsystem. More than one-third of

the Counselors did not want to answer questions about the

COUNSELOR/ADMINISTRATOR Subsystem because they had not used the system enough,

or at all. More than one-third of the staff felt that the material was

moderately to very accurate. (See Table 12.)

Table 12

Accuracy of Information in AREIS

Question	N=16
Is the information in the Soldier Subsystem accurate:	
1. Very accurate	25%
2. Moderately accurate	44%
3. Undecided	6%
4. Somewhat inaccurate	6%
5. Very inaccurate	0%
No Response	19%
How accurate is the information in the Counselor Subsystem:	
1. Very accurate	13%
2. Moderately accurate	25%
3. Undecided	13%
4. Somewhat inaccurate	13%
5. Very inaccurate	0%
No response	37%

The structured interview elicited information about the appropriateness of the content of AREIS and about the style of presentation of the system for soldiers. (See Table 13.) Sixty-nine percent of the staff felt that the AREIS information was appropriate and 63% felt that the content was presented in an appropriate manner for soldiers on the post.

Again, Counselors felt less sure about the content in the COUNSELOR/ADMINISTRATOR Subsystem. Thirty-eight percent stated that the content was appropriate; 25% were either undecided or stated that the material was somewhat inappropriate. More than one-third of the Counselors did not respond to the question.

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Table 13

Appropriateness of AREIS

Question	N=16
To what extent is the information in the soldier subsystem appropriate:	
1. Very appropriate	31%
2. Moderately appropriate	38%
3. Undecided	0%
4. Somewhat inappropriate	13%
5. Very inappropriate	0%
No Response	19%
Is the style of presentation in the soldier subsystem appropriate for soldiers on your post:	
1. Very appropriate	32%
2. Moderately appropriate	31%
3. Undecided	13%
4. Somewhat inappropriate	6%
5. Very inappropriate	0%
No response	6%
To what extent is the information in the counselor subsystem displayed in an appropriate format:	
1. Very appropriate	31%
2. Moderately appropriate	6%
3. Undecided	13%
4. Somewhat inappropriate	13%
5. Very inappropriate	0%
No Response	38%

The Counselors felt that AREIS provided soldiers with a great deal of information. In responding to the question, 69% of the Counselors stated that AREIS "told soldiers most of what they wanted to know," while 19% said that the AREIS content was inadequate for soldiers' needs.

Of the eleven counselors who responded to a question about the usefulness of the COUNSELOR/ADMINISTRATOR Subsystem, eight felt that it was useful, and three were undecided. None of the Counselors felt Subsystem 4 to be "not useful at all." Informal comments during the interviews indicate that some Counselors felt that the location of the computers diminished the usefulness of the COUNSELOR/ADMINISTRATOR Subsystem. If Counselors had had access to AREIS on or near their desks, they might have used this part of AREIS more frequently. They felt that they had paper materials at their desks which would take no more time to search through than if they went to the AREIS computer in the reception area and called up the data they were seeking.

Counselors responded that the best thing about AREIS was the way that the system related soldier self-information to career and educational information (50%). Twenty percent thought the machine was "fun to work with" and 16% stated that AREIS gave soldiers "a lot of information." The best parts of AREIS were the Interests, Abilities, and Values surveys in Subsystem 2 and the "Getting Promoted" goal in Subsytem 3. (See Table 14.)

Table 14

Most Helpful Parts of AREIS

		N=16	
Subsystem		N	%
One:	Subsystem Orientation	4	25%
Two:	Interests	14	88%
Two:	Abilities	10	63%
Two:	Values	9	56%
Three:	Getting Promoted	12	75%
Three:	Developing New Interests	4	25%
Three:	Getting Some Job Skills	5	31%
Three:	Completing a Next Step in Education	4	25%
Three:	Planning a Military Career	2	13%
Three:	Improving MOS Skills	5	31%
Three:	Selecting Another MOS	2	13%
Three:	Improving Basic Skills	2	13%
Three:	Deciding about Re-enlistment	4	25%
Three:	Making a Vocational Choice	7	44%

Interviews with the Counselors indicated that the hardware problems clearly had an impact; 36% felt that the "machine was broken too much." Another 36% felt that the system had too much content, that it took too long for soldiers to go through, or that it was confusing. Of those choices, the length of time to go through AREIS was clearly the issue; on many occasions during onsite visits of project staff, Counselors commented that the presence of mandatory pre-use and post-use evaluation questions in AREIS was a hinderance to soldier use and they requested that these questions be removed as soon as possible.

The worst parts of AREIS in the opinion of the staff were the Orientation section and Selecting Another MOS. Many thought the former was inappropriate for use at the Education Center and that it would be better placed at the

inprocessing center or military personnel office where soldiers new to the post could learn about the Education Center prior to their initial visit there. (See Table 15.) They felt that the latter needed much more information and a constantly updated support database of military occupational specialties which would necessitate support from a central source, probably at Department of Army.

Table 15

Least Helpful Parts of AREIS

	N=16	
Subsystem	N	%
One: Orientation	5	32%
Two: Interests	1	6%
Two: Abilities	3	19%
Two: Values	2	13%
Three: Getting Promoted	1	6%
Three: Developing New Interests	3	19%
Three: Getting Some Job Skills	0	0%
Three: Completeing a Next Step in Education	2	13%
Three: Planning a Military Career	2	13%
Three: Improving MOS Skills	2	13%
Three: Selecting Another MOS	4	25%
Three: Improving Basic Skills	3	19%
Three: Deciding about Re-enlistment	2	13%
Three: Making a Vocational Choice	3	19%

OBJECTIVE 5:   To assess changes in
the Education Center operation as a
result of AREIS presence.

In order to assess changes in the Education Center activity, the project
staff solicited the assistance of the Counselors. One of the guidelines of
the Field Test was to operate AREIS in as true an operational setting as
possible; this guideline was also operative when it came to collecting data
about AREIS use. Hence, the project staff utilized the existing Counselor
reporting procedures as much as possible, which meant that the data collection
device was not uniform across the three Field Test sites. Fort Meade
Counselors use a computer and keypunch cards to report their counseling
activities. Fort Gordon and the Mannheim community posts use "paper and
pencil" collection forms, but with slight differences; Fort Gordon Counselors
describe the counseling activity using free text, while Mannheim Counselors
use a check-off system. In each case, the existing forms were amended to
include the following data about the soldier participation in the AREIS Field
Test:

    -- Use of AREIS (check for either Yes or No)

    -- If not, reason why not (using the following code)

        1-not interested
        2-not applicable to Service Member's needs at current time
        3-not enough time during this visit
        4-do not like computers
        5-computer not available at this time
        6-other reasons not listed
    -- Length of counseling interview

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The counseling logs were screened prior to the analysis of the data. Log entries were disregarded if they contained illegible data or missing data elements and if the entries represented counseling situations that took place in a location other than the Education Center (e.g., inprocessing, Military Personnel Office, unit briefings.)

A total of 8765 entries were usable. Of that total, 801 soldiers accepted the AREIS invitation and used the system. Almost eight thousand did not use AREIS. There appear to be several reasons why ninety percent of the soldiers who were seen by Counselors did not use AREIS. According to the logs, the majority (56%) of these soldiers did not wish to use AREIS because it was not applicable to their needs at that moment. (See Table 16.) Twenty-seven percent did not have sufficient time to use AREIS during that particular visit to the Education Center. Counselors reported that many soldiers stated that they would come back to the Education Center to use AREIS. However, the Counselors were unable to report how many soldiers actually did return.

Table 16

Reasons for Not Using AREIS

1.	not interested	509	6%
2.	not applicable	4498	56%
3.	no time	2188	27%
4.	do not like computers	97	1%
5.	computer not available	192	2%
6.	other	480	7%

The data about the length of counseling interviews were analyzed to see if there was a significant difference in the time that Counselors spent with AREIS users and the time spent with non-users. Figure 4 shows the information which emerged from that analysis.

FIGURE 4

Average Interview Time

AREIS Users vs. Non-users

Length of counseling interview (in minutes)

■ = Soldier had not used AREIS
□ = Soldier had used AREIS
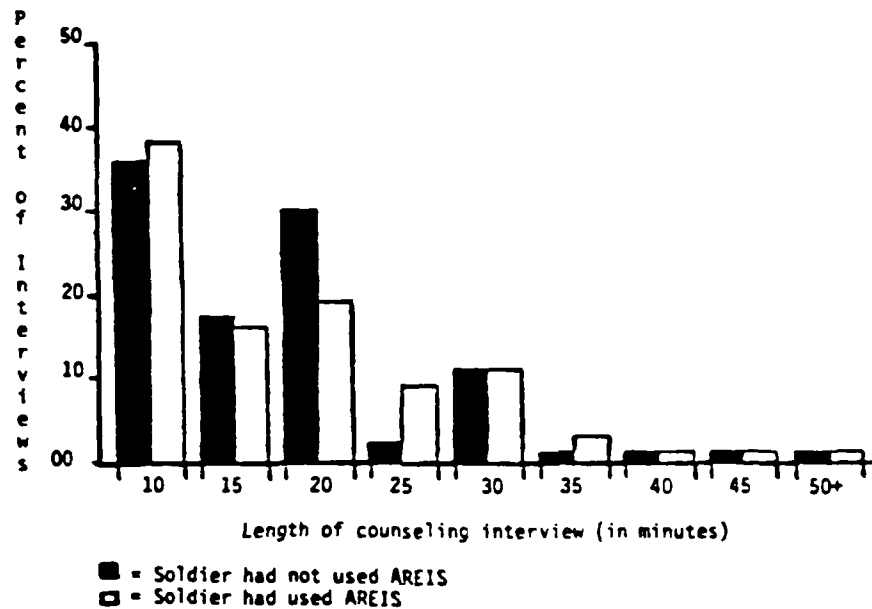
During the structured interview conducted at the close of the Field Test, Counselors reported that their average interview time is approximately twenty minutes. The counseling logs show that 83% of non-users had interviews of twenty minutes or less and 17% had interviews of twenty-five minutes or more; 73% of AREIS users spent twenty minutes or less, while 26% spent twenty-five minutes or more. From these data, then, it would appear that AREIS users require a longer amount of time with their Counselors than do non-users, although the difference is not significant.

A third element of the counseling session, the content or educational activity, was also analyzed. A sub-set of the counseling logs was used to collect these data. Three hundred randomly selected entries dealing with

AREIS users were compared against three hundred randomly selected entries dealing with non-users. Table 17 depicts the breakdown of activities as shown by the analysis.

Table 17

Analysis of Counseling Activity By AREIS Users and Non-Users

	AREIS Users		Non-Users	
	% counseled*	%enrolled@	%counseled	%enrolled
BSEP**	2	3	5	2
T.A.	13	1	11	0
COLLEGE	7	1	9	2
BASIC MATH/SCI	0	0	1	0
OCS/ROTC	3	0	1	0
CLEP	7	1	7	2
AAP	1	2	2	4
GED	4	6	4	13
COURSES	6	3	9	2
TESTING	6	0	5	1
VA/VEAP	3	2	7	1
GEN'L INFO	4	0	1	0
TRANSCRIPT				
EVALUATION	11	0	6	0
ASVAB	3	1	3	1
INPROC'G	1	0	3	0
SOCAD	0	0	1	0
AREIS	1	9	0	0
	71%	29%	73%	27%

* counseled = the program was discussed only and no concrete action was taken

@ enrolled = the servicemember was actually enrolled in the program during the
counseling session or saw the Counselor with the specific goal of
enrolling in the program.

**See Appendix D for definitions of acronyms and abbreviations.

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These data show that there is relatively little difference in the scope
of counseling activities that involves Counselors and their clients. The
Counselors confirmed this perception during the structured interviews. When
asked how the presence of AREIS had changed their roles as Counselors, most
Counselors felt that AREIS had not made a significant change. From the
current Field Test data, there is no way to ascertain why more AREIS users
requested transcript evaluation or why more non-AREIS users enrolled in the
GED program. Further tests must be done to analyze the effect of AREIS use on
the subsequent Education Center-related actions of soldiers. There is also no
way to get information about the AREIS listing at the bottom of the table. A
possible explanation could be that a Counselor recorded positive and negative
soldier responses to his/her invitation to use AREIS and these figures were
picked up through the random selection of Counselor log entries.

It is important to note here that most Counselors counseled with their
clients before they invited them to use the AREIS program, rather than after
AREIS use. It is possible, therefore, that the data would have been different
had soldiers used AREIS prior to their counseling sessions. There is also
some reason to question the accuracy of the data on many of the counseling log
sheets. It appears that some of the information, in particular the data items
dealing with reason for non-use of AREIS and the length of the counseling
session, on some of the log sheets may have been entered at one time during
the month rather than at the end of each counseling session. On one set of
counseling log sheets, for example, forty eight entries out of fifty were
marked with the same code, and all counseling sessions were twenty minutes in
length. This kind of entry pattern existed on many Counselor logs. This

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Information, coupled with the fact that many Counselors did not ask soldiers prior to the counseling session if they would like to use AREIS, places the veracity of these data in jeopardy.

Summary

The findings from the Field Test are summarized as follows:

1. Most parts of the AREIS software operated in an acceptable manner during the Field Test. Some of the AREIS software requires modification before it can be considered ready for Army-wide distribution. Portions of the text which deal with ACES programs, promotion procedures, and with military/civilian crosswalks need to be expanded and updated. The abilities section in Subsystem 2, SELF-INFORMATION will require reprogramming of the interpretation process if it is to be used as a part of the AREIS program in the future.

2. The operation of the APPLE and DISCOVERY multi-user machines which were placed in the Education Centers must be considered as generally unreliable. Each of the machines experienced some kind of failure during the field test: In Germany the machine failed twice and was out of service for approximately two months of the nine-month field test; at Fort Gordon there were recurring problems with getting all three terminals to operate; at Fort Meade the system generated "string too long" messages and sometimes dropped the user out of AREIS back to the the operating system level. Counselors were psychologically and/or experientially unprepared for hardware problems. Telephone communication was not an effective method for diagnosis and remediation of hardware problems. Before micro-computers are installed in an Education Center, a service contract with a local company should be secured to provide quick repair.

3. Soldiers who opted to use AREIS found the system to be easy to understand and enjoyable to use. They felt very positive about using AREIS for career and educational planning. Subsystem 2, SELF-INFORMATION, was considered to be the most helpful part of the system. This finding verified the findings of the previous limited field tryout of AREIS and also the findings of research done on civilian-oriented computer-based systems. Soldiers showed little movement toward the specification of career and educational planning as a result of using AREIS. Most used AREIS only one time; however, those soldiers who used AREIS more than one time showed some slight movement toward career and educational decision making. Some others made tentative plans based upon their AREIS exploration activities. These findings support the theory that a computer-based information system has the capability to help users narrow or broaden their career and education choices.

4. Counselors generally expressed positive feelings about the use of a computer to deliver career and educational planning information. Many Counselors felt that soldiers who had used AREIS prior to the counseling session had more specific questions about career and educational planning. Many Counselors were concerned about the length and understandability of the system, however, and felt that the design of AREIS should be modified to make it more flexible.

5. Counselors continued to be the primary providers of career and educational information. The existence of AREIS within the Education Center setting made no measurable difference in the amount of time which Counselors spend with clients or in the kinds of counseling activities which take place during the counseling session.

RECOMMENDATIONS FOR THE ARMY-WIDE DISSEMINATION

This section provides recommendations for the revision of the current AREIS software and hardware and for the distribution of AREIS to Education Centers worldwide.

Future Development of AREIS Content

Project staff received a number of suggestions from Education Counselors, ESO's, Field Test Coordinators, and Education Directorate personnel for the modification or enhancement of the AREIS software. These suggestions, along with recommendations emanating from the field test experience, include:

1. Increasing the size and scope of the AREIS occupational data file.

   AREIS currently contains a data file of 417 occupations and provides information about work tasks, work setting, educational requirements, and related military occupations. This data file could be expanded to provide information about newly emerging occupations and about other occupations which have counterparts in the military setting. For example, there are few civilian occupations in the file which relate to signal or electronics occupations. In 1982, the Department of Defense funded a project to provide information on military/civilian occupational crosswalks. This project should be considered as a resource if the data file is expanded. AREIS can also be expanded to include job descriptions about MOS's just as it does for the civilian occupations. Such information on work tasks and related education requirements would be beneficial to the military career decision-making of Army personnel.

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2. The content of the entire system should be reviewed for relevancy, currency, and accuracy. Many Army policies and regulations governing ACES programs have changed since the AREIS scripts were written. This situation can cause confusion on the part of AREIS users. The Promotion Procedure section needs review, for example, to bring the calculation of promotion points up to date and to discuss in more detail automatic promotion for ranks E2 to E4. Some portions of AREIS might be removed from the system. The goal, "Developing New Interests," for example, was considered one of the least helpful modules by counselors. This particular goal requires the entry of information about community activities available on post. It is possible that budget cuts in the community activity area have severely reduced the number and variety of options available to soldiers to develop interests in new areas. Hence, the informat.. 1 provided might be too scanty to be helpful to the AREIS user. Some scripts, such as the section on the Army Apprenticeship Program, should be expanded to include more specific information. The system might also be expanded to include specific information about training materials found in the MOS libraries and Learning Centers. Care must be exercised to insure that the information provided here is consistent across the whole range of Army posts; otherwise an expanded author language must be provided to allow for local input of data.

3. Careful consideration must be given to the retention or reprogramming of the SELF-INFORMATION Sub system. The Interest, Abilities, and Values surveys which are presently programmed in AREIS are copyrighted instruments. The American College Testing Program (ACT) allowed royalty-free use of these instruments for the duration of Contract MDA 903-81-C-0569. At the conclusion of this contract, any sites wishing to use these instruments must pay a royalty to ACT. These copyrighted inventories could be replaced with Army-developed instruments which would require no royalty. Occupations in the data file would have to be related to the results of the new interest inventory so that users could obtain civilian as well as military occupations which relate to their interest profiles.

4. The issue of flexibility of movement through the system should be reviewed. AREIS is currently programmed to allow a user to return to the main menu from almost any frame in the system. The "escape" feature should be included on every frame. AREIS might also be programmed to include new menus; for example, a menu of AREIS topics related to each educational level might serve to focus users in on topics which relate to their educational aspirations. This capability could reduce the amount of time needed to interact with the whole AREIS system.

5. The author language which allows localization of information should be expanded and made more "user-friendly." The current system does not include enough frames for the master schedule; that section should provide for an unlimited number of frames as long as a hard disk is used to store the program.

Hardware and Software

When the current development project began In 1981 microcomputer
technology was Ilmited to a relatively small number of machines which could
provide the capabilitles required by AREIS (e.g. multl-user, large data flle
storage, 50-cycle current). For example, the Apple microcomputer was not
designed as a multl-user machine; hence another plece of hardware, a
multiplexor, had to be interfaced between the hard disk and the computers to
effect the multl-user capabllity. There was no commonly used way to enable the
print capabllity for a multl-user configuration and so a printer switch box
also had to be added to the configuration. At that point the operating system
which was commonly used for large computer programs with large supporting
databases was CP/M. This software was not designed to be multl-user; hence
some changes to CP/M were made by the hardware vendors who wanted to run CP/M
on their multl-user machines; this CP/M, then, was no longer generic.

Today the microcomputer Is becoming the most widely used form of
computer. This method of dellvery appears to be the most viable approach for
Education Centers today, despite the problems encountered during the Fleld
Test. An important consideration is the relative low cost of the
microcomputer. Education Centers will be able to afford these machines and
their software. The issues of flexibility and control are also important to
the Individual Education Center. The microcomputer is the dellvery mode which
best meets these criteria.

Hardware Is now being released which is specifically designed to handle
the multl-user capabllity. Operating systems such as UNIX have also been
developed to meet this need. Hence, hardware and software available today are
much more compatible with the needs of the AREIS system. Serlous
consideration should be given to the question of need for a multl-user

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system. The Field Test experience casts doubt on the need for a multi-user configuration, even at large Education Centers. Not every soldier who visits the Education Center has the time or the inclination to use a system like AREIS. Education Centers on Army posts do not perform the same function as a high school guidance office. For example, soldiers who visit the Education Center generally have a specific topic in mind and just enough time to take care of it; hence, the need for several computers to deliver a system like AREIS may not be as great in the military setting as it might be in the secondary school setting.

There are many microcomputers available today which enjoy widespread acceptance because they are reliable and easy to operate. The IBM-PC, for example, has become the industry standard in a very short period of time because of the corporation and the widespread support facilities which stand behind it. The support issue is very important to Counselors; the need to have local repair facilities is critical to the success of a computer system in an Education Center.

Selection of an easy-to-understand-and-use operating system is important. By using an operating system which is generic and native to the hardware, AREIS would be easier and less expensive to implement and run. An example of an operating system which is native to a machine is PC DOS. This operating system is distributed with each IBM microcomputer; hence the user site would not have to make a separate purchase of an operating system to drive the software program.

The issue of hard disk storage versus floppy disk storage should also be closely investigated. The advantages of the hard disk system are

o once installation is complete, users do not have to handle

   or change the storage media

o a greater amount of storage space is available for the software

   program and user records

o user records can be stored over a period of time

o more than one software program can be installed if space allows

The disadvantages are

o the hard disk is more sensitive to movement and to fluctuation of

   electrical current. Should a problem occur, the whole program might be

   lost

o higher cost than floppy disk drives and flexible storage media

The advantages to the floppy disk system are

o a large number of programs can be run using floppy disks; hence the

   computer may have more flexibility of use

o lower cost to purchase and maintain (floppies)

o flexibility of options in the software program; that is, if

   implemented in this fashion, Education Centers could purchase desired

   modules of AREIS instead of the entire program

The disadvantages are

o no long-term storage of user records

o increased handling of media which may result in problems with the

   display of correct data

Any new development should also include the use of color and graphics
capability. The use of color would enhance the visual impression created by
AREIS. Graphics could increase understanding of certain concepts (e.g. the
World-of-Work Map in the current version; improved operating instructions in a
new version). Another technological advance which would greatly enhance the
delivery of AREIS is the computer-controlled videodisk. This machine could

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strengthen the delivery of occupational information by presenting pictures of work tasks and work settings along with the textual descriptions. The Army has a videodisk system currently in operation called the Joint Optical Information Network, JOIN. AREIS could possibly be integrated into the JOIN system.

Operational Environment

Microcomputer technology requires no special environment. Any room where humans can exist comfortably is acceptable to the microcomputer. That does not mean, however, that no special care needs be taken to protect the machine and the software. The electrical power supply in the Education Centers should be carefully checked and monitored to assure proper operation of the hardware and to protect the software. Some Education Centers are old buildings and lack new electrical wiring. Power surge protectors can be installed between the computer and the electrical outlet which will help to minimize electrical problems. Also, microcomputers should be kept clean and free of dirt and dust. Dirt in the cooling system can create a heat build-up which can damage disks. Staff should be trained in periodic maintenance of the equipment in order to prevent problems caused by excessive dirt and dust.

Location of the computer is another important consideration. The system should be placed in an area where the computer is visible and accessible to soldiers. It should also be a location that offers some degree of privacy. However, if Counselors are to use the system as an adjunct to their counseling activity, the computer must be located near their offices. AREIS has utility in other areas on post as well. The ORIENTATION Subsystem might be used at the inprocessing, or welcome center. Subsystem 3 may be beneficial at the Military Personnel Office or in the MOS library or Learning Center.

System Maintenance

Certain functions regarding AREIS operation would need to be initiated at the Education Directorate level if AREIS is to be supported successfully. These functions include:

1. the development of general policy with regard to AREIS use in the Education Centers

2. annual review of AREIS text and data files and distribution to all AREIS sites

3. continued monitoring of technical developments which might enhance the cost effectiveness of the system

4. development of policy regarding acquisition of new material to be used in AREIS and royalty payment for use of copyrighted materials currently used in AREIS

Other functions should be carried out at the Education Center level. They include:

1. arrangement for the purchase or lease of computer equipment to operate AREIS

2. arrangement for a service contract for repair of the hardware

3. selection of an onsite AREIS Coordinator who has primary responsibility for the AREIS project

4. determination of information about local post educational offerings which can be included in AREIS

5. determination of location of the computer and decision as to use of the system in other locations on post

6. selection and training of data entry personnel

7. coordination of publicity programs about AREIS

8. coordination of inservice training of all personnel when AREIS is implemented, and training of personnel who begin working in the Education Center after AREIS has been integrated into the program.

Support Services

Inservice training for all Education Center personnel is critical to the successful integration of AREIS into the ongoing counseling program. Counselors and other staff should have knowledge of:

o the conceptual design, theoretical basis, and content of AREIS

o the operation of the computer and its peripheral equipment

o the localization function and how to operate it

o possible ways of infusing AREIS into the ongoing counseling program

Staff should also participate in a hands-on experience so that they can operate the system successfully.

Because of the frequent moves by Education Center personnel, the concept of onsite Inservice Training by AREIS-related personnel is perhaps impractical. A videotape presentation which covers the design, theory, and content of each subsystem, combined with hands-on experience may provide a solution to this problem. The Inservice Training Guide which has been developed during this project can provide support for both these approaches.

The Counselor Guide, User Guide, and Technical Guide should be modified in accordance with any revision of the AREIS program or the hardware on which it will be implemented. These guides are integral to the support of AREIS and should be kept up to date and available for easy reference.

Continuous publicity of the availability of AREIS will be instrumental in the effectiveness of the program. Publicity can take place in daily bulletins; post newspapers; posters in highly visible, well-populated and highly trafficked areas; spot ads on post television or radio stations; and word of mouth.

CONCLUSION

This document has provided a review of the development of AREIS. It has also summarized Counselor and soldier reactions to AREIS during a nine-month field test. Soldiers expressed positive attitudes about AREIS, while Counselors were more cautious. Considerable difficulties with the hardware were observed. Recommendations are offered for revisions of AREIS and for requirements for further development and distribution.

References

Harris-Bowlsbey, J. & Rabush, C. (1979). A needs assessment for the Army Education Information System (Research Note 83-17). Alexandria, VA: US Army Research Institute. (AD A126 831)

Harris-Bowlsbey, J. & Rabush, C. (1980). Cost/benefit analysis of the Army Education Information System (Research Note 82-4). Alexandria, VA: US Army Research Institute. (AD A126 930)

APPENDIX A

PRE-USE QUESTIONNAIRE AND ANALYSIS

Rank

		Total	Percent
1.	E2	144	13%
2.	E3	214	19%
3.	E4	254	23%
4.	E5	194	17%
5.	E6	123	11%
6.	E7	46	4%
7.	E8	23	2%
8.	E9	5	< 1%
9.	Warrant Officer	15	1%
10.	Officer	32	3%
11.	Education Center Counselor	12	1%
12.	Education Services Officer	1	< 1%
13.	Other	51	5%
		1,114	99%

Sex

	Total	Percent
Females	212	20%
Males	902	80%
	1,114	100%

1. Enter time in service to nearest year

	Total	Percent
0	50	4%
1	290	26%
2	122	11%
3	119	11%
4	86	8%
5	70	6%
6-10	220	20%
11-15	72	66%
16-20	39	4%
21-25	31	3%
26-30	10	1%
30 or more	5	< 1%
	1,114	100%

2. Enter time in grade to nearest year

0	70	6%
1	502	45%
2	208	19%
3	107	10%
4	69	6%
5	64	6%
6	25	2%
7	14	1%
8	13	1%
9	7	1%
10	12	1%
11-15	14	1%
16-20	4	1%
21-25	2	< 1%
26-30	1	< 1%
30 or more	2	< 1%
	1,114	99%

3. How long have you been at this post (in months)

0	36	3%
1	192	17%
2-6	375	34%
7-12	209	19%
13-18	104	9%
19-24	67	6%
25-30	48	4%
31-36	34	3%
37-42	16	1%
43-48	14	1%
49-60	13	1%
61 or more	6	1%
	1,114	99%

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4. How many times have you used the Education Center?

	Total	Percent
0	158	14%
1	322	29%
2	154	14%
3	104	9%
4	81	7%
5	79	7%
6	23	2%
7	16	1%
8	14	1%
9	7	1%
10	75	7%
15	23	2%
20	27	2%
25	15	1%
40	6	1%
100	10	1%
	1,114	99%

5. At this point, I have:

1. No idea about my future vocational plans.   151   14%

2. Some vague idea about my future vocational plans.   351   32%

3. Narrowed future plans to 2 or 3 choices.   412   37%

4. Narrowed future plans to 1 certain vocation.   200   18%
                                                                        1,114   101%

6. At this point, I have:

1. No idea about my educational plans   107   10%

2. Some vague ideas about my educational plans   366   33%

3. Narrowed my educational plans to 1 or 2 possible types of training   439   39%

4. Selected one program for more education or training   202   18%
                                                                        1,114   100%

* rounding error may distort the exact percentage total

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7. For help with my job planning, a computer would be:

		Total	Percent
1.	Very useful	604	54%
2.	Useful	327	29%
3.	Undecided	162	15%
4.	Not very useful	10	1%
5.	Not at all useful	11	1%
		1,114	100%

8. For help with my educational planning, a computer would be:

1.	Very useful	600	54%
2.	Useful	345	31%
3.	Undecided	148	13%
4.	Not very useful	9	1%
5.	Not at all useful	12	1%
		1,114	100%

APPENDIX B

POST-USE QUESTIONNAIRE AND ANALYSIS

Number of times on system

	Total	Percent
1	1,168	72%
2	261	16%
3	99	6%
4	49	3%
5	23	1%
6	13	1%
7	8	< 1%
8	3	< 1%
9	2	< 1%
10	4	< 1% *
	1,630	99%

Modules Used (More than 1 answer)

	Total	Percent
0	73	2%
1	1,545	43%
2	1,052	29%
3	933	26%
	3,603	100%

Part 3 Goals Used (More than 1 answer)

	Total	Percent
0	724	28%
1	336	13%
2	169	6%
3	195	7%
4	327	12%
5	114	4%
6	65	2%
7	229	9%
8	59	2%
9	121	5%
10	288	11% *
	2,627	99%

Questions

1. How useful was your use of AREIS?

		Total	Percent
1.	Very useful	850	52%
2.	Quite useful	323	20%
3.	Moderately useful	232	14%
4.	Not useful at all	132	8%
5.	Not useful	93	6%
		1,630	100%

*Rounding error may distort the exact percentage

65

2. How enjoyable was your use of AREIS?

		Total	Percent
1.	Very enjoyable	987	61%
2.	Quite enjoyable	366	22%
3.	Moderately enjoyable	157	10%
4.	Somewhat enjoyable	75	5%
5.	Not enjoyable at all	45	3%
		1,630	101%*

3. Which part of AREIS was the most useful to you?

1.	Orientation (Part I)	401	25%
2.	Self-Information (Part II)	724	44%
3.	Goals & Planning (Part III)	505	31%
		1,630	100%

4. Which part of AREIS was the most interesting to you?

1.	Orientation (Part I)	405	25%
2.	Self-Information (Part II)	718	44%
3.	Goals & Planning (Part III)	507	31%
		1,630	100%

5. What about the words used in AREIS?

1.	I could understand everything	1,486	91%
2.	I didn't understand some words sentences	85	5%
3.	I didn't understand a lot of it	59	4%
		1,630	100%

6. Did you have any of these problems?

1.	Trouble with the computer	182	11%
2.	Directions for using the computer were not clear	42	3%
3.	Direction for using AREIS were not clear	33	2%
4.	It was boring	51	3%
5.	No problems	1,322	81%
		1,630	100%

*Rounding error may distort the exact percentage

7. Would you recommend AREIS to a friend?

    1. Yes   1,541   95%
    2. No   89   5%
                                                         ------   ------
                                                         1,630   100%

8. What have you done since you last used AREIS?   (More than 1 answer)

    1. Talked to a counselor   299   18%
    2. Talked to my unit officer,
        sergeant or milpo staff member.   46   3%
    3. Read more information about a job   101   6%
    4. Signed up for a course   116   7%
    5. None of the above   224   13%
    6. Nothing! This is my first use!   884   53%
                                                         ------   ------
                                                         1,670   100%

9. At this point, I have:

    1. No idea about my future voca-
        tional plans.   219   13%
    2. Some vague ideas about my future
        vocational plans   506   31%
    3. Narrowed future plans to 2 or 3
        choices   609   37%
    4. Narrowed future plans to 1 certain
        vocation.   296   18%
                                                         ------   ------
                                                         1,630   99%*

10. At this point, I have:

    1. No idea about my educational
        plans   205   13%
    2. Some vague ideas about my educa-
        tional plans   479   29%
    3. Narrowed my educational plans to
        1 or 2 possible types of training   659   40%
    4. Selected one program for more
        education or training   287   18%
                                                         ------   ------
                                                         1,630   100%

*Rounding error may distort the exact percentage

11. For help with my job planning, a computer would be:

1.	Very useful	1,010	62%
2.	Useful	394	24%
3.	Undecided	133	8%
4.	Not very useful	40	2%
5.	Not at all useful	53	3%
		1,630	99%*

12. For help with my educational planning, a computer would be:

1.	Very useful	993	61%
2.	Useful	427	26%
3.	Undecided	123	8%
4.	Not very useful	38	2%
5.	Not at all useful	49	3%
		1,630	100%

*Rounding error may distort the exact percentage

APPENDIX C

STRUCTURED INTERVIEW FOR COUNSELORS

Please answer the following questions as honestly as possible. The information you provide will be confidential. Most responses will be used in the aggregate. Individual comments may be used within the Field Test Report. The comments will be used for research purposes only and will not be associated with individual ESO's or Counselors.

The following questions relate to the Soldier Subsystem:

1. Is the information in the Soldier Subsystem accurate?   N=16

		#	%
1.	Very accurate	4	25
2.	Moderately accurate	7	44
3.	Undecided	1	6
4.	Somewhat inaccurate	1	6
5.	Very inaccurate	0	0
	No Response	3	19
Comment: _____		16	100%

2. To what extent is the information in the Soldier Subsystem appropriate?

N=16

		#	%
1.	Very appropriate	5	31
2.	Moderately appropriate	6	38
3.	Undecided	0	0
4.	Somewhat inappropriate	2	13
5.	Very inappropriate	0	0
	No Response	3	19
Comment: _____		16	101%*

3. In general, is the style of presentation in the Soldier Subsystem appropriate for soldiers on your post?

N=16

		#	%
1.	Very appropriate	6	38
2.	Moderately appropriate	6	38
3.	Undecided	2	13
4.	Somewhat inappropriate	1	6
5.	Very inappropriate	0	0
	No Response	1	6
Comment: _____		16	101%*

*Total % may exceed 100% due to rounding.

4. The information in AREIS   N=16

	#	%
1. Told soldiers everything they wanted to know	0	0
2. Told soldiers most of what they wanted to know	11	69
3. Was inadequate	3	19
4. Told soldiers more than they wanted to know	1	6
5. I don't know	1	6
No Response	0	0
	16	100%

Comment: _____   16   100%

5. In using AREIS, soldiers   N=16

	#	%
1. Had no difficulty with words or ideas	5	31
2. Had no difficulty with words, but some difficulty with ideas	1	6
3. It helped soldiers obtain information about military and civilian education options	2	13
4. Had difficulty with both words and ideas	4	25
5. I don't know	3	19
No Response	1	6

Comment: _____   16   100%

6. The best thing about AREIS was (more than one answer)   N=37

	#	%
1. The machine was fun to work with	8	22
2. It helped soldiers relate information about themselves with military and civilian career options	11	30
3. It helped soldiers obtain information about military and civilian education options	9	24
4. It gave soldiers a lot of information	6	16
5. It was objective and consistent	1	3
6. All of the above	2	5
No Response	0	0

Comment: _____   37   100%

7. The worst thing about AREIS was (more than one answer)   N=25

	#	%
1. The machine was broken too much	9	36
2. There wasn't enough information that soldiers wanted to know	5	20
3. There was too much content; it took too long for soldiers to go through; it was confusing	9	36
4. Working with a machine; it was too impersonal	1	4
5. All of the above	0	0
No Response	1	4

Comment: _____   25   100%

70

8. The most helpful parts of AREIS were (select as many as you wish)   N=87

			#	%
1.	Part One:	Orientation	4	5
2.	Part Two:	Interests	14	16
3.	Part Two:	Abilities	10	11
4.	Part Two:	Values	9	10
5.	Part Three:	Getting Promoted	12	14
6.	Part Three:	Developing Some New Interests	4	5
7.	Part Three:	Getting Some Job Skills	5	6
8.	Part Three:	Completing a Next Step in Education	4	5
9.	Part Three:	Planning a Military Career	3	3
10.	Part Three:	Improving MOS Skills	5	6
11.	Part Three:	Selecting Another MOS	3	3
12.	Part Three:	Improving Basic Skills	3	3
13.	Part Three:	Deciding about Re-enlistment	4	5
14.	Part Three:	Making a Vocational Choice	7	8
	No Response		0	0
			87	100%

Comment: _____

9. The least helpful parts of AREIS were (select as many as you wish)   N=34

			#	%
1.	Part One:	Orientation	5	15
2.	Part Two:	Interests	1	3
3.	Part Two:	Abilities	3	9
4.	Part Two:	Values	2	6
5.	Part Three:	Getting Promoted	1	3
6.	Part Three:	Developing Some New Interests	3	9
7.	Part Three:	Getting Some Job Skills	0	0
8.	Part Three:	Completing a Next Step in Education	2	6
9.	Part Three:	Planning a Military Career	2	6
10.	Part Three:	Improving MOS Skills	2	6
11.	Part Three:	Selecting Another MOS	4	12
12.	Improving Basic Skills		3	9
13.	Deciding about Re-enlistment		2	6
14.	Part Three:	Making a Vocational Choice	3	9
	No Response		1	3
			34	102%*

Comment: _____

10. What is your general reaction to providing information to soldiers by computer   N=16

		#	%
1.	Positive	9	56
2.	Neutral	5	31
3.	Negative	1	7
	No Response	1	7
		16	101%*

Comment: _____

*Total % may exceed 100% due to rounding.

The following questions relate to the COUNSELOR/ADMINISTRATOR Subsystem.

11. How accurate is the information in the COUNSELOR Subsystem?   N=16

		#	%
1.	Very accurate	2	13
2.	Moderately accurate	4	25
3.	Undecided	2	13
4.	Somewhat inaccurate	2	13
5.	Very inaccurate	0	0
	No Response	6	37
		16	101%*

Comment: _____

12. To what extent is the information in the CONSELOR Subsystem displayed in and appropriate format?   N=16

		#	%
1.	Very appropriate	5	31
2.	Moderately appropriate	1	6
3.	Undecided	2	13
4.	Somewhat inaccurate	2	13
5.	Very inaccurate	0	0
	No Response	6	37
		16	100%

Comment: _____

13. How useful is the information in the COUNSELOR Subsystem?   N=16

		#	%
1.	Very useful	3	19
2.	Moderately useful	5	31
3.	Undecided	3	19
4.	Not very useful	0	0
5.	Not useful at all	0	0
	No Response	5	31
		16	100%

Comment: _____

14. How is the content of your interviews with soldiers who have used ARIES different from interviews with soldiers who have not used AREIS?

"Not that different, just about everyone made printouts and would sit down and discuss."

"Eliminated a lot of things they needed to find."

"There was not any impact for me to remember the ones who used AREIS."

"Time was a problem."

72

"Didn't have to go thru basic information on Ed Center programs. Could spend an hour getting to a goal. Those who used it had lots of directed questions to counselors."

"Develops more desire to get specifics as much information as possible.

"They find out there is a lot more information than they thought."

"Soldiers already had an idea of what they wanted to talk about. I think they set their goals too high." "Not different."

"They are more involved and more goal oriented."

"Less explanation, merely have to verify for them what they've already learned in AREIS. Better understanding of what they want to do..better motivated."

"Questions more formulated. The information is more an extension. Placement of computer is wrong."

"More directions with career planning/goals. They are aware of ACES programs or local programs."

"AREIS a reading experience; many people don't value that."

"Don't have to spend time giving information. Soldiers know where they are heading."

"More questions from those who used AREIS-VEAP, Ed Benefits, promotions."

15. How has your role of counselor changed since AREIS has been in the Education Center?

"Soldiers get goal information from computers - we did real planning. Much more to the point."

"I don't think it has changed. Some instances AREIS allowed relief from simplistic information giving."

"Made me a little more assured. It helped me a lot."

"Not really at all."

"Changed somewhat. I did not include computer in my counseling. Now I do."

"Didn't really change it. Location near the desk was helpful."

"Added to my time schedule. Hasn't really made an impact on my role as counselor."

"Added some dimension to counseling. It was a challenge for some."

"Have learned technical stuff."

16. What kind of feedback have you received from soldiers about their AREIS experience?

"Generally positive if they sat through it."

"Haven't gotten too much. What I have has been good."

"Some liked playing around with it."

"Positive, could use more information on there. Haven't had any negative feedback, except program should be more indepth."

"Disappointment in some feedback "It was okay" don't know what that meant. 1 out of 4 would come back--others no."

"Negative/and positive--it's something new/different/gives good The interests part really peps them up."

"Feedback primarily positive."

"All of them enjoyed it--all ranks, officers, enlisted, etc. Thought it was very interesting."

"Biggest comments - they enjoyed using it... and it was fun."

"It was fun, different. Mostly fun."

"Some frustration in some places. Fairly positive, otherwise."

"Soldiers really liked it. Interested, excited with it."

"Positive feedback--no real negative feedback."

"Mostly positive attitudes about it. Especially liked feedback on the self-information section."

"Very little. No negative feedback."

"A lot thought it was fun, a new thing to try."

17. What changes would you suggest for the AREIS Soldier Subsystems?

"Include every MOS. Getting Promoted-should be a screen saying UNOFFICIAL any changes prepared as of a certain date. Drop--Development of New Interests altogether, not a soldier need. Be sure that the individual knows what's happening."

"Don't care for it much. Amount and kind of information has to be limited."

"Values-a lot of confusion there."

"Orientation--too long. Plan New Career-different for each servicemember, Selection of MOS-give guidelines, procedures, agencies to help."

"I don't know that I would make any changes to the outline or the topics."

"Requirements for High School graduate."

"Get rid of ORIENTATION-has redundant information, because they have heard it in inprocessing or from a brochure."

"Doing parts are always better. More doing with feedback."

"Make it easier to jump around in the system to back and front. . Now you have to go through the menu. Get soldier into interactive mode sooner. Expand directions."

"Instructions moved up to front. Wouldn't really change anything other than keep it current."

"More information about CLEP, tailor to program at local site."

"World-of-Work (WOW) Map could be clarified. User's Guide could have WOW Map in it."

"Material very comprehensive. Sometimes problem with backing up. Rewrite directions."

18. What changes would you suggest for the AREIS COUNSELOR/ADMINISTRATIVE System?

"Gaps in MOS's and civilian jobs. Inservice training adequate."

"I don't remember enough about it to suggest any changes."

"I haven't looked at it."

"Data on school schedules put into system need to be expanded."

75

"Use it at our discretion. No basic changes-covers it pretty
well. Right now can't think of it."

"None, love that part. Use it all the time on night duty."

"Can't think of any!"

"Soldiers basic data, maybe accounting by unit?"

"No comment, not familiar enough with it!"

"Love the printer. Always print the occupations lists, values, etc."

"All the information is good, just don't get a chance to use it very much."

"Don't know--haven't had time to use it much."

APPENDIX D

DEFINITIONS OF ACRONYMS AND ABBREVIATIONS

BSEP - Basic Skills Education Program

T.A. - Tuition Assistance

COLLEGE - enrollment in 2 or 4 year College

BASIC MATH/SCI - Basic Mathematics and Science courses

OCS/ROTC - Officers' Candidate School, Reserve Officers' Training Corps

CLEP - College Level Examination Program

APP - Army Apprenticeship Program

GED - General Educational Development

VA/VEAP - Veteran's Educational Benefits Program

ASVAB - Armed Services Vocational Aptitude Battery

INPROC'G - In-processing

SOCAD - Service members Opportunity Colleges Associate Degree