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AREIS: A Computer-Based Educational Counseling System for the Army

Soldiers need information about career progression and educational options to maximize their professional development and their likelihood of remaining with the Army. Minimal information is provided by Army Continuing Education System counselors due to the volume of information needed to make career decisions and the limited time available to counsel each soldier.

This paper will discuss one solution to managing the vast quantities of career development information through the use of an individualized computer-based career counseling system. The US Army Research Institute, with contract support, has produced a prototype computer-based system called the Army Education Information System (AREIS). AREIS will assist the soldiers in defining work-related interests, skills and values to prepare them to identify their educational or vocational goals. The AREIS will also maintain a data bank for Education Center personnel so that career data can be compiled for planning and reporting purposes.



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INTRODUCTION

BACKGROUND

One objective of the US Army is to produce a combat-ready force through the development of personal skills and military proficiency. The Army Continuing Education System (ACES) supports this objective by providing educational opportunities to soldiers and enabling them to develop career goals that include military service and post-service education and training. Army Education Centers (AEC) have been established at every Army post having a minimum of 750 military members. These Centers provide programs which 1) satisfy the skill development and occupational needs of the Army, 2) increase soldier potential, 3) enhance job satisfaction, and 4) increase personal educational growth. Specific offerings for academic education include the Basic Skills Education Program (BSEP), Advanced Skills Education Program (ASEP), High School Completion Program, and Service members Opportunity Colleges Associate Degree (SOCAD) Program. In skill development the AEC provides language, military occupational speciality (MOS), and occupation-oriented courses. In the area of skill recognition the Army Apprenticeship Program and Defense Activity for Non-traditional Education Support (DANTES) Certificate Training are offered. The AEC also provided education services which include counseling, testing, and the support of a learning center.

The Adjutant General (TAG) supervises ACES and develops policy and guidance. Each installation/community commander conducts the ACES program through

1. This project was performed for the US Army Research Institute for the Behavioral and Social Sciences by the DISCOVER Foundation, Inc. under contract MDA-903-C-0279.

the Education Services Officer (ESO) so that educational and vocational opportunities described in the previous paragraph are made available to all service members. The ESO supervises the provision of these programs through contract instructors and the work of Education Center counselors. The counselors are required to provide each service member with program information and counseling during initial training, within 30 days of arrival at new duty stations, annually during the first enlistment, and 30 days prior to separation. The counseling emphasizes military professional development, educational opportunities, Veterans Assistance Program (VEAP) policies, and postservice educational benefits.

The primary means of delivering information about educational and vocational opportunities rests with the Education Center counselors. Two developments have hampered the provision of services by the Education Center staff: the increasing quantity and complexity of educational and vocational options, with a resultant explosion of resource information; and the reduction in the number of Education Center counselors. Education Centers, increasingly understaffed for the increased workload, are experiencing difficulty in adequately serving their constituency.

Hence it has become evident that other means of supplying standardized, up-to-date, easily accessible educational and vocational information are needed. One such means is a computer-based information system. Over the past two decades, a growing number of guidance professionals have become increasingly committed to the use of the computer to assist with the access and delivery of individualized educational and vocational information (Katz & Shatkin, 1980). The unique capabilities of the computer to store, search, retrieve, and update large masses of information; to relate educational and vocational data to information about the user; to simulate an interactive dialogue; and to serve many

users simultaneously with tailored information have validated the worth of this technological aid to the counseling process.

The computer-based information system is intended to function in concert with, not instead of, the activities performed by guidance counselors. As the computer carries out information retrieving and dispensing functions and clerical duties, counselors would gain time to perform the professional duties for which they were trained and for which they are needed -- one-to-one interviewing, group guidance, and consultation.

This paper will discuss the design and on-going development of a computer-based educational and vocational information system which is one effort to overcome the increase of guidance information and decrease of counseling personnel in the military.

AREIS Army Education Information System

Needs Assessment. The US Army Research Institute for the Behavioral and Social Sciences (ARI) initiated a research effort to conceptualize and develop a prototype computer-based system which would provide information on military and civilian education programs related to the Army career progression. This effort, performed by the DISCOVER Foundation, Inc., under contract MDA 903-79-C-0279, provided a design for the Army Education Information System (AREIS) based on the results of a needs assessment survey administered to Education Services Officers (ESOs) and Education Center counselors at posts worldwide (Harris-Bowlsbey & Raybush, in press).

The needs assessment instruments were designed to collect data concerning 1) demographic information about the Education Center, 2) the variety and frequency of information requested by soldiers at the Education Center, and 3) ESO and counselor attitudes about using computers. The instruments were distributed

to all major commands. The return rate for the ESOs was 72% with 131 of 182 questionnaires mailed back. The return rate for counselors was 64% with 313 of 494 counselors responding.

The following summarizes the demographic data supplied by the ESOs and counselors. Of the 144 posts responding the permanent population ranged from 50 to 48,000. The number of counselors per post ranged from 2 to 12. Data indicated that each counselor annually serves between 1,000 and 2,000 soldiers. The average workload is 1,600 soldiers per counselor.

Counselors indicated that half of their time is spent on one-to-one counseling of soldiers with the remainder distributed over administrative duties, orientation/outreach programs, clerical duties, liaison efforts, research and development, and other miscellaneous tasks. Counselors provide an average of two interviews per soldier per year. This represents approximately 64% of their workload. Counselors and ESOs ranked tuition assistance, college course offerings on or near post, and information about tests (DANTES, SAT, CLEP) as ACES program information they were most frequently asked about. In declining order of frequency they were asked about orientation to the Education Center services, associate degree programs, college credit for military experience, and BSEP. In ranking information requested about career planning, counselors and ESOs indicated the following in descending order of frequency: developing a personal career plan in and beyond the military, assessing interests, and making the transition from a military to a civilian job.

ESOs and counselors also responded to a series of questions to determine their attitudes about the usefulness of computerization of ACES information now available in print form. They indicated that computerization of information about new and existing ACES programs, Department of the Army regulations, master schedule of courses, and MOS and civilian occupations would be considerably useful. Counselors and ESOs agreed that a computerized system would provide soldiers

with consistent information and would most likely be used frequently by soldiers. They also agreed that this type of system would be welcomed by counselors because it would enable them to counsel more soldiers by reducing their administrative workload. Counselors also indicated a need for training on the use of a computerized system. In general, counselors and ESOs were positive about the usefulness of this type of system as a tool to support Education Center operations.

AREIS Specifications. The results of the needs assessment provided DISCOVER Foundation, Inc. with the data necessary to formulate a conceptualization of a computer-based guidance system designed specifically for Education Center use. The AREIS is composed of four interactive subsystems. Subsystem I is the ORIENTATION which is the entry point for the soldier. The objectives of this subsystem are to 1) familiarize the user with the computer terminal and printer, 2) provide instruction about the content of the AREIS, 3) explain the Education Center services and 4) provide an overview of all ACES programs. The second subsystem is SELF-INFORMATION which has been designed to help soldiers generate information about themselves to formulate short or long range goals for their active duty and beyond. Subsystem II helps soldiers define their work-related interests, aptitudes, skills and values. Subsystem III GOALS and PLANNING helps soldiers identify goals related to career and education and provides details of ACES programs which can help them achieve their goals. This subsystem provides information on the following goals:

1. to improve basic skills
2. to develop new interests for self-improvement or use of leisure time
3. to get some job skills
4. to complete the next step in education
5. to plan a military career

6. to improve MOS proficiency
7. to select a secondary MOS
8. to get promoted
9. to make a good decision about re-enlistment
10. to make a vocational choice
11. to complete an educational degree after leaving the military
12. to make the Army a career

Subsystem IV COUNSELOR-ADMINISTRATOR has been designed to reduce the clerical workload of counselors and provide them with information to be used during counseling interviews. The subsystem contains data files which include descriptions of MOSs, civilian occupations, and educational opportunities. These files may be accessed directly by the soldier through interactive dialogue or by the counselor. A second part of this subsystem, accessible only by Education Center personnel contains the Soldier Educational Development Record (DA Form 669) for each soldier, a master schedule of courses offered on or near the post, and all course rosters.

AREIS Field Tryout. A field tryout of portions of the four AREIS subsystems was conducted at the Ft. Sill, Oklahoma Education Center in April 1980. The following segments, which represent approximately one-third of the total system as specified above, were tested:

1. Subsystem I ORIENTATION: an overview of AREIS, Education Center services and ACES programs.
2. Subsystem II SELF-INFORMATION: on-line administration of the UNIACT Inventory (c 1978, American College Testing Program). This is a sixty item interest inventory which provides the respondent with a family of occupations to examine.
3. Subsystem III GOALS and PLANNING: the goal entitled "To complete the

next step in Education," designed to provide information about educational offerings on or near a specific Army post.

4. Subsystem IV COUNSELOR-ADMINISTRATOR: a demonstration of administrative documents which may be maintained by computer such as DA Form 669, master schedule of courses, and summary report data.

The preceding segments of the AREIS subsystems were programmed in PLANIT (Programming Language for Interactive Teaching) on the Army's UNIVAC 1108 Computer at the Edgewood Arsenal, Maryland and delivered to Ft. Sill in a time sharing mode.

Twelve counselors and sixty-four soldiers participated in the field tryout. The soldiers were volunteers who had come into the Education Center for information. On-line surveys were given to the soldiers prior to using the AREIS and after each subsystem to determine their attitudes on the usefulness, clarity, and interest level. The computer and the AREIS content were perceived useful by the soldiers for educational and vocational planning. Counselors indicated that the information provided by the AREIS subsystems was useful and accurate. They responded favorably to the delivery of educational information to soldiers by computer.

Future Direction for AREIS. Recently a contract was awarded to the DISCOVER Foundation, Inc. to complete the AREIS subsystem development and conduct a field trial of the system at three Army sites. A cost/benefit analysis of alternate delivery systems for the AREIS, conducted under the previous contract, has guided the selection of a micro-computer for the AREIS hardware. The hardware systems compared for the cost/benefit analysis were the maxi-computer, distributed network of mini-computers, and stand-alone micro-computer. The micro-computer was recommended because it has the greatest cost feasibility, requires a minimum of technical and clerical support, is easily operated by non-technical personnel, and can

be readily installed overseas. The AREIS hardware will consist of a micro-computer, color monitor, and printer. Some limitations of the PLANIT authoring language were identified during the field tryout. These include the inability to search data files, clear the screen completely, and remain in contact with the computer after a five minute delay between users. Another authoring language will be selected for the software development which does not have the above limitations.

AREIS support documentation will be prepared to provide a User's Manual and a program for in-service training of ESO's, counselors, and clerical personnel. AREIS subsystem software will be completed according to the conceptualization discussed previously. An in-depth field trial of the total system will be conducted at three Education Centers: Ft. Meade, Maryland; Ft. Gordon, Georgia; and Heidelberg, Germany. The field trial will provide data on the use patterns of all subsystems, user reactions, influence of system use on soldiers, and impact of the system on ESOs, counselors, and clerical staff. This effort will be completed during the second quarter of FY 83.

CONCLUSION

ARI is guiding the development and field trial of the AREIS as one solution to the problem of the surge of educational and vocational information being provided by a decreasing number of Education Center counselors. A preliminary field tryout has indicated that the application of computer technology to Education Center operations is most welcome by ESOs, counselors, and soldiers. The potential payoff for the AREIS may be observed in increased soldier potential, job satisfaction, and personal educational growth while supporting the occupational needs of the Army in the defense of the nation.

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