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Job Skills Education Program: Evaluation Standards

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for

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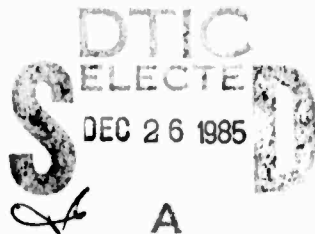


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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Job Skills Education Program (JSEP) is designed to provide soldiers with the prerequisite knowledge and skills required for successfully learning their Military Occupational Specialties (MOS). When the JSEP is put into effect, it will replace the Army's current Basic Skills Education Program (BSEP) with a sophisticated, computer-based system. In this report, the goals and objectives of the internal evaluation process of JSEP are described. The report presents process and product standards against (over)		

(continued)

the stated objectives. The evaluation standards are intended for use as an internal audit device and for those who are interested in knowing how the JSEP software was produced. *Keywords:*



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JSEP EVALUATION STANDARDS

EXECUTIVE SUMMARY

Requirement:

The solicitation required that Florida State University (FSU) develop a set of evaluation standards that will determine whether the system:

- (1) meets the stated specifications for courseware, software and hardware;
- (2) is as effective as the functional BSEP II program; and
- (3) is effective in improving performance on the job.

Procedure:

After a literature review, an initial draft of JSEP goals, process steps and performance standards objectives was formulated by the JSEP internal evaluation team. The final draft was attained through an iterative review process involving CET/Hazeltine designers and evaluators along with project officers from the Army Research Institute.

Findings:

While there are several models for expressing evaluation standards available in the technical literature, the form of the standards expressed herein is optimal for the purpose of the project, namely the development of a job related, computer-based curriculum. The objectives and process steps are consistent with the procedures required to design and develop the JSEP curriculum. The process steps with their accompanying performance standards will provide quality assurance checkpoints in the development of the instructional delivery system.

Utilization of Findings:

The objectives, process steps and standards will be used to document the attainment of milestones and to demonstrate critical steps in the development of computer-based curricula. The objectives with standards will also be points of departure for the conduct of Tasks 7, 8, 9, 10, 13, 16, 17, and 18.

JSEP EVALUATION STANDARDS

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The Job Skills Education Program (JSEP) is a multi-phase program begun in Fiscal Year 1982, and designed to enhance enlisted career potential by improving soldier job performance. The sponsor, the Education Division, Office of the Deputy Chief of Staff for Personnel, expects JSEP to replace the Army's current Basic Skills Education Program when it is implemented.

The JSEP program, being developed by Florida State University (FSU) will result in a standardized curriculum for soldiers who demonstrate deficiencies in the knowledge and skills required to successfully learn their Military Occupational Specialty (MOS).

In accordance with current policy, JSEP will be an on-duty program. It will also use a computer-based management system to facilitate an open entry/open exit approach. At present, most of the lessons being developed will be computer delivered; however, the plan calls for using existing materials, and incorporating materials developed as part of other ARI efforts, whenever appropriate.

A unique aspect of JSEP is that it builds upon a very detailed front-end analysis of MOS Baseline Skills. The analysis covered tasks performed by soldiers in the 94 highest density MOSs, in addition to Common Tasks (the skills that all soldiers, regardless of their MOS, need to know). Although the Army has over 300 MOSs, the 94 covered in the analysis represent about 80% of all soldiers. Perhaps the most useful product developed for the analysis was a taxonomy listing more than 200 prerequisite competencies.(P.C.) for these MOSs. The competencies were derived from detailed reviews of Soldier Manuals, and from extensive interviews with subject-matter experts at Army schools. This effort produced a series of tests intended to diagnose deficiencies in the P.C.s. Modified versions of these tests will be used in JSEP.

The JSEP program will include a front-end learning strategies module designed to improve soldier skills in reading, studying, test taking, and problem solving. The curriculum will consist of this strategies-training, plus 180 diagnostic review lessons, and 120 skill development lessons, which are being developed for the PLATO and MicroTICCIT computer systems. The program is being tried out at two TRADOC sites and two FORSCOM sites, prior to an Army-wide phased implementation.

JSEP EVALUATION STANDARDS

OVERVIEW

Operational Problem

It is not news that soldiers must be trained to do their jobs. They must be trained so that each Army job is performed competently--regardless of differences in ability and background in newly entering soldiers. To accept less would cause many mission elements to fail.

Moreover, many Army jobs are increasingly dependent upon the soldier's ability to use high technology and the ability to learn new technology as it develops. Soldiers, therefore, need more than training. They need enough education to be able to learn subsequent jobs, to become eligible for promotion, and ultimately, to provide leadership for tomorrow's Army.

The Job Skills Education Program (JSEP) is designed to provide soldiers with job-related basic skills instruction that is prerequisite to learning their skill level 1 and 2 job tasks during their first duty assignment. JSEP provides functional basic skills instruction on MOS specific requirements. It is based on an extensive job analysis of 94 of the Military Occupational Specialties (MOS) which contain the largest proportion of soldiers and tasks contained in the Soldier's Manual of Common Tasks.

As it is conceptualized, the JSEP curriculum recognizes that the vast majority of soldiers will have been exposed to similar basic skills instruction before entering the Army. Many entering soldiers, however, will not have learned those basic skills well enough, or will not remember what they have learned. To help soldiers learn better and remember more, JSEP incorporates straightforward training in research-based learning strategies that are directly aimed at improving learning and retention.

Research Objective

The solicitation required that Florida State University (FSU) develop a set of evaluation standards that will determine whether the system:

- (1) meets the stated specification for courseware, software and hardware;
- (2) is as effective as a functional BSEPII program; and whether
- (3) is effective in improving performance on the job.

Scope

The project purpose, goal, objectives and process steps with their respective performance standards are presented for the entire JSEP project. The performance standards are stated in the form of either process criteria or in the form of products which (1) contain analyses of data or (2) describe important processes used in the development of the curriculum.

Approach

The strategy for developing JSEP evaluation standards was first to articulate goals, objectives, and process steps to describe the intents of the project. The works of Stake, Stufflebeam, Scriven, Worthen and Saunders were important here. The objectives and process steps were then reviewed by the CET/Hazeltine JSEP executive committee and revised accordingly. Following these procedures, an outline of performance standards was initially developed and these were again reviewed by members of the CET/Hazeltine JSEP executive committee.

The performance standards are, in the main, stated in the form of either process criteria or in the form of products which contain certain kinds of information or analyses. For example, at this time we prefer to state that we will analyze and report the pass rate of troops at a field test site while controlling for a variety of possible intervening variables, rather than to predict a certain outcome. We believe that process standards must be used during the design and development phases in order to preserve the decision freedom until empirical data are available from the tryouts. The setting of desirable outcome standards will be possible later when the relationship between input variables and outcomes become better known. Only at such a time can we set a standard to address the "How-much-development-is-enough" issue.

While there are other approaches and styles for the presentation of evaluation standards (e.g., Standards for Evaluation of Educational Programs, Projects and Materials, New York: McGraw Hill, 1991) the form used here, we believe, both comprehensive and useful for making decisions for product development as well as for internal and external audits of project activities and accomplishments.

On the basis of the review of these evaluation standards by ARI, and their subsequent refinement, the evaluation plan (Task 7) will be developed to specify the methods of inquiry, the measures to be used, the population samples, the proposed analyses, etc. Until that final refinement, the important question is. What should be observed about the program that will be the most revealing for what kinds of audiences?

For now, we are directing our inquiry to those who may wish to know more about producing effective job-related, computer-based instruction for the development of basic intellectual skills. Therefore if there is a single overarching evaluation standard, it is the degree to which JSEP, as systematically produced curriculum, can effectively remove prerequisite competency deficiencies.

RESULTS OF INVESTIGATION

Purpose

Provide an on-duty, job-related basic skills development educational program that will: (1) improve job performance, (2) function in the Army outside of immediate work setting, and (3) enhance the potential for completing off-duty educational programs.

Goal

To design, develop and test a job and career supportive computer-based prerequisite competency curriculum for possible Army-wide adoption.

Objectives

1. Establish project review, control, and decision-making procedures.
2. Conduct a review of literature and instructional materials related to JSEP purpose.
3. Design a job-related, computer-based prerequisite competency curriculum (JSEP).
4. Design an instructional support system to field test the JSEP curriculum.
5. Design a management information system to direct, monitor and report student progress in JSEP.
6. Develop a job-related, computer-based prerequisite competency curriculum.
7. Field test a job-related, computer-based prerequisite competency curriculum.
8. Compare alternative computer-based delivery systems in terms of effectiveness, efficiency and benefit to U.S. Army mission.
9. Evaluate the potential impact of JSEP on the Army job skills, educational programs, and soldier career goals.
10. Explore the feasibility of using JSEP for the awarding of high school credits and credentials.
11. Prepare specifications for the dissemination of JSEP Army-wide.

OBJECTIVE 1: ESTABLISH PROJECT REVIEW, CONTROL, AND DECISION-MAKING PROCEDURES

Process Steps

1. Establish a JSEP
Advocacy Team representing constituent groups to recommend policy regarding design, development, field testing, evaluation, and dissemination of JSEP.
2. Establish an internal review committee for the design and development of the JSEP curriculum.
3. Establish an internal evaluation committee to assist the project in clarifying project goals, objectives, and process steps and to help in establishing criteria for their attainment.
4. Establish a communication linkage with the JSEP external evaluation team.

Performance Standards

- 1a. The Advocacy Team will meet as guidance is required and will review internal and external evaluation of JSEP
- 1b. Constituencies represented are TAGO, TRADOC, ARI, Base Commanders, ESOs, external evaluators, JSEP developers.
- 2a. The internal review committee meets at least weekly.
- 2b. Internal review committee consists of instructional designers, management information specialists, computer programmers, educational psychologists, evaluators.
- 3a. The members of the evaluation committee meet periodically with the internal review committee (see 2b).
- 3b. The evaluation committee meets as guidance is required.
- 3c. The committee consists of test developers, CTEA specialists, designers, management information specialists, evaluation, methodologists.
- 4a. Evaluations of JSEP products and processes reviewed by external evaluators.
- 4b. JSEP developers receive copies of reports pre-

pared by external
evaluators for ARI.

5. Establish management
control procedures to
coordinate JSEP design,
development and evaluation
functions

5a. The management and control
functions are described.

5b. There is a set of policies
and procedures for manage-
ment and control.

5c. Communication networks are
established among developers,
evaluators and project
officers.

OBJECTIVE II: CONDUCT A REVIEW OF LITERATURE AND INSTRUCTIONAL MATERIALS RELATIVE TO JSEP PURPOSE

Process Steps

1. Review MOS baseline skills analysis conducted by RCA, and identify prerequisite competencies by MOS.
2. Review extant print and computer-based instruction materials (software) for applicability to JSEP (especially those not reviewed by TRADOC SSP'S)
3. Conduct a literature review of published research related to computer-based learning.
4. Conduct a literature review of published research related to adult learning of prerequisite competencies and learning strategies.
5. Compare content of ETS locator and diagnostic test items with content domains of prerequisite competencies.

Performance Standards

- 1a. There is a catalogue showing the relationships among PC's, MOS and task indicator statements.
- 2a. A list of sources are developed.
- 2b. Materials obtained are recorded.
- 2c. An evaluation of materials is conducted and the outcome of the evaluation recorded.
- 3a. List of sources used to identify literature is developed.
- 3b. A bibliography of literature obtained for project use is kept.
- 3c. A description of how material is incorporated into lessons.
- 4a. A list of potential sources is developed.
- 4b. A bibliography of literature obtained for project use is kept.
- 4c. A description of how material is incorporated into lessons.
- 5a. There is documentation of diagnostic test items for each PC that have been accepted as is, modified, eliminated or replaced by CET/Hazeltine curriculum developers.

OBJECTIVE III: DESIGN A JOB-RELATED, COMPUTER-BASED PREREQUISITE
COMPETENCY CURRICULUM (JSEP)

Process Steps

Performance Standards

- | | |
|---|---|
| 1. Develop criteria for specifications for each JSEP lesson. | 1a. Procedures are described for how criteria were developed and adopted. |
| | 1b. Lesson specification forms are developed and approved. |
| | 1c. There is a description of how each lesson directly teaches learning strategies or enhances their development. |
| | 1d. Each lesson has a valid content pretest and posttest. |
| | 1e. The use of extant materials is specified with copyright secured if necessary. |
| | 1f. Alternative learning options are specified that supplement or complement CBI delivery system. |
| | 1g. MOS-specific content is outlined. |
| 2. Develop screen displays to portray visual stimuli on PLATO and TICCIT monitor. | 2a. PLATO and TICCIT grids completed and numbered. |
| 3. Develop and pilot test five prototype JSEP lessons using PLATO and TICCIT. | 3a. The purposes for developing the specific prototypes are stated. |
| | 3b. The problems identified in developing and implementing the prototypes are documented. |
| | 3c. The responses from the target audiences are documented and reviewed. |
| | 3d. The direct costs to develop 5 prototypes are estimated. |

4. Design test interfaces from locator to summative posttest for individualized JSEP program.
 5. Develop a decision map (e.g. flowchart) to guide learners through JSEP program.
 6. Develop individualized summative posttests with potential for generating multiple forms.
 7. Describe JSEP, CBI curriculum model.
 8. Prepare for production of JSEP curriculum by estimating resources, time and cost for development.
- 4a. Procedures routing students through sequences of tests are documented.
 - 4b. Options for reducing test time with cost/benefit trade-offs are documented.
 - 5a. The development of a decision chart is described.
 - 5b. Flow chart is available depicting learner flow through the JSEP instructional system.
 - 5c. The pathways through JSEP is founded in logical, theoretical, or empirical rationale.
 - 6a. Procedures for generating items to form a summative posttest are documented.
 - 6b. Procedures for generating equivalent multiple forms are documented.
 - 6c. Pass/fail criteria are established with rationale for setting minimum standards.
 - 7a. A logically derived hierarchical structure of the JSEP prerequisite competencies is produced.
 - 8a. An outline of unit cost for production is available.
 - 8b. A PERT chart is available for demonstrating work flow among production elements.
 - 8c. A production schedule is available for inspection.
 - 8d. Quality control procedures are in place for both process and output.

9. Develop formative evaluation procedures to determine lesson effectiveness (achievement and attitudes).
 - 9a. The procedures used to develop evaluation criteria and procedures will be described.
 - 9b. A standard evaluation instrument is used for all lessons and is reviewed by the evaluation committee.
 - 9c. Formative evaluation procedures are conducted consistently.
 - 9d. Desired outcome standards are stated.
10. Design on-going evaluation procedures to monitor and improve JSEP curriculum.
 - 10a. Evaluation instruments have been selected or developed to obtain information pertaining to
 - (a) achievement
 - (b) attitudes
 - (c) completion rate
 - (d) cost
 - 10b. An evaluation design has been developed by the JSEP internal evaluation committee.
 - 10c. Evaluation design has been reviewed externally by ARI and the external evaluation team.
 - 10d. Data collection procedures are designed and reviewed by ARI, TAGO and ESO's.

Process Steps

Performance Standards

- | | |
|--|---|
| 1. Suggest an instructional strategy to be used by personnel who will administer remedial instruction. | 1a. Remedial instructional strategy as outlined or suggested for JSEP. |
| 2. Specify instructional support personnel required for testing, remedial instruction, motivation, counseling, recordkeeping, etc., within the limitations of BSEP II contract requirements. | 2a. Job titles and job descriptions for direct instructional support personnel are specified for both the preliminary and full scale tryouts. |
| 3. Specify computer maintenance support personnel. | 3a. Job titles and job descriptions of computer maintenance personnel are recorded. |
| 4. Specify library support personnel for storage and retrieval of instructional materials. | 4a. Job titles and job descriptions of library personnel are recorded. |
| 5. Specify required JSEP support personnel for tasks not directly related to delivery of instruction (e.g., ESO, receptionist, clerk, etc.). | 5a. Job titles and job descriptions of related personnel are recorded. |

1. Note: the Process Steps and Performance Standards are applicable to both the preliminary and full scale tryouts.

OBJECTIVE V: DESIGN A MANAGEMENT INFORMATION SYSTEM TO DIRECT, MONITOR
AND REPORT STUDENT PROGRESS IN JSEP

Process Steps

1. Identify decision points for the JSEP management system including decision points within the curriculum.
2. Specify users of information at each decision point.
3. Assess information requirements for appropriate personnel at each decision point in the JSEP management system.
4. Develop procedures to input and record information for decision-making purposes.
5. Develop procedures to access information at decision-points.
6. Specify temporary and permanent records.

Performance Standards

- 1a. A flow chart (from the students perspective) for how students qualify for, enter in, pass through, exit from JSEP, and return is presented in JSEP Management System Operator's Manual.
- 2a. The users of information at each decision point are noted and approved by ARI and stated in JSEP Management System Operator's Manual.
- 3a. The kinds of information required at each decision point, as well as go, no-go criteria are stated in JSEP Management System Operator's Manual.
- 4a. Procedures for recording and storing information (on-line or off-line) are described in JSEP Management System Operator's Manual.
- 4b. Back-up information system is developed to avoid the possibility of losing information due to power outages, etc.
- 5a. Procedures for accessing records are described in JSEP Management System Operator's Manual.
- 6a. Permanent records are specified, e.g., student achievement information, student background data locator scores, diagnostic scores, summative posttest scores.

7. Distinguish between open access and qualified access to information.

6b. Temporary records are specified, e.g., student pre-test data, student practice data.

7a. "Passwords" are established for accessing certain kinds of information.

7b. Criteria are established for the issuing of passwords.

OBJECTIVE VI: DEVELOP A JOB-RELATED, COMPUTER-BASED PREREQUISITE
COMPETENCY CURRICULUM

Process Steps

Performance Standards

- | | |
|--|--|
| 1. Design and develop a production system to produce computer software, pretests and posttests, and support media. | 1a. A PERT chart is developed showing how production elements are sequenced. |
| | 1b. Job roles, duties, and responsibilities are stated. |
| | 1c. A production management information system is established with production records. |
| | 1d. Sufficient hardware is in place for in-house development. |
| | 1e. Quality control review procedures are formalized. |
| 2. Identify, secure, and train required production personnel. | 2a. Educational and job history requirements are specified. |
| | 2b. Appropriate affirmative action procedures are taken. |
| | 2c. Training responsibilities are stated. |
| | 2d. Training procedures are documented. |
| 3. Specify production schedule. | 3a. Production schedule is developed and approved by ARI. |
| 4. Establish production quality control criteria and procedures. | 4a. Quality control criteria are established for try-outs. |
| | 4b. Quality control criteria are established for field test. |
| 5. Conduct CET tryouts. | 5a. At least 3 "learners" participate in try-outs. |
| | 5b. Formative evaluation procedures are formalized. |

- 6. Conduct preliminary tryout on one Army post (Ft. Rucker).
- 7. Revise as required.
- 8. Develop support personnel training materials and procedures for field test.
- 9. Specify requirements for hardware and software installation and maintenance at field test site.
- 5c. Records are made of both learner and developer feedback.
- 6a. Conditions of implementation will resemble field test.
- 6b. Observations are made regarding achievement and JSEP system proficiency.
- 7a. Records are made of revisions made to lessons and system specifications before field test.
- 8a. Training procedures for JSEP support personnel at the four field test sites are stated and approved by ARI.
- 8b. Appropriate training materials are produced or collected.
- 9a. Hardware requirements for each site are established to take into account projected usage parameters (See task 4 report).
- 9b. Procedures to store and retrieve software are stated.
- 9c. Contract arrangements and policies for hardware and software maintenance are made among Hazeltine Corporation, Control Data Corporation, FSU and ARI.

OBJECTIVE VII: FIELD TEST A JOB-RELATED, COMPUTER-BASED
PREREQUISITE COMPETENCY CURRICULUM

Process Steps

Performance Standards

- | | |
|---|---|
| 1. Select two FORSCOM and two TRADOC bases for field test. | 1a. Two FORSCOM and two TRADOC sites are selected. |
| 2. Interpret Army policy and recommend procedures for determining eligibility for JSEP field test. | 2a. Criteria for eligibility for JSEP field test (e.g., MOS, locator scores, diagnostic test scores) are stated and approved by ARI. |
| 3. Develop method for informing CO's of JSEP opportunity and its goals. | 3a. Personnel and media selected for informing CO's of JSEP are documented. |
| 4. Identify and secure support personnel with necessary education and job experience. | 4a. Support personnel are identified, hired and assigned to JSEP according to specifications. |
| 5. Train support personnel to perform assigned JSEP functions. | 5a. There is documentation of attendance at training sessions held by CET.
5b. Required competencies are mastered as indicated by a checklist. |
| 6. Establish on-going evaluation system. | 6a. Performance indicators are established.
6b. Policies and procedures for evaluation are documented.
6c. Decision makers and decision processes documented.
6d. Procedures and funds for revisions are documented. |
| 7. Establish a policy/advisory committee at each FORSCOM and TRADOC field site for implementing, monitoring, and evaluating JSEP. | 7a. Four policy/advisory committees are in place. Membership is stated and a tentative schedule of meetings adopted. |

8. Articulate exit JSEP performance standards by MOS.
9. Recruit and select soldiers for JSEP field test.
10. Document JSEP program activities.
11. Establish reporting mechanisms for achievement.
12. Install appropriate hardware, software, and personnel required for field test.
- 8a. Minimum proficiency levels on locator and diagnostic tests and summative posttests are stated.
- 9a. Procedures for identifying a pool of potential "JSEP eligibles" are stated.
- 9b. Criteria for selecting "JSEP eligibles" are stated.
- 9c. Procedures for securing CO support to release "JSEP eligibles" from duty are in place.
- 10a. Amount of time per activity per lesson is recorded for learners and for support personnel.
- 11a. Mechanisms for maintaining temporary and permanent records are in place.
- 12a. Hardware, software, and personnel configuration are installed at least one full day prior to implementation of field test.

OBJECTIVE VIII: COMPARE ALTERNATIVE COMPUTER-BASED DELIVERY SYSTEMS IN TERMS OF EFFECTIVENESS, EFFICIENCY, AND BENEFIT TO U.S. ARMY MISSION.

Process Steps

1. Ascertain costs for initial outlay of hardware.
2. Ascertain costs for installation.
3. Estimate life cycle operational costs.
4. Determine reliability of each system.
5. Evaluate human factors considerations of systems.
6. Determine feasibility of supplementing JSEP locally.

Performance Standards

- 1a. Initial costs and economies of scale are reported.
- 2a. Relationship between installation costs and troop demand are reported.
- 3a. The life cycle of TICCIT and PLATO systems is estimated and reported.
- 3b. Replacement costs are estimated and reported.
- 4a. A ratio of down-time/total time will be calculated during field trial and reported.
- 4b. Causes of down-time will be reported.
- 5a. Attitude scale will be selected/developed to assess human factors from learner perspectives, and instructor and developer perspectives (e.g., fatigue, eye strain, noise level, etc.).
- 5b. Behavioral indicators will be selected related to human factors (e.g., time to learn keyboard, time to progress through identical lessons, break time, etc.).
- 5c. Results of attitudinal and behavioral survey will be reported.
- 6a. Compare procedures and resources required to supplement JSEP.

7. Ascertain costs to develop JSEP software.
 - 7a. Direct costs to develop JSEP curriculum will be reported for TICCIT and for PLATO.
 - 7b. Ratio of cost/hr. of on-line instruction will be reported.
8. Formulate optional hardware configuration for least cost while holding effectiveness (i.e., training) constant. (Cost Benefit Trade-off Analysis - Task 8).
 - 8a. A report will detail direct costs to install JSEP at multiple levels--from a stand-alone unit to a wide geographical sharing of core hardware for PLATO and TICCIT. (See Task 4 and Task 8)
9. Ascertain relationship between JSEP system elements and effectiveness (Cost Training Effectiveness Analysis - Task 9).
 - 9a. A report will detail direct costs to implement JSEP and show relationship between variable cost elements and achievement.
 - 9b. An optimal JSEP system model(s) will be recommended for PLATO and TICCIT in a final report.

OBJECTIVE IX: EVALUATE THE POTENTIAL IMPACT OF JSEP ON ARMY JOB SKILLS; EDUCATIONAL PROGRAMS, AND SOLDIER CAREER GOALS

Process Steps

1. Ascertain degree of development of JSEP pre-requisite competencies attributable to the JSEP computer based system.
2. Determine relationship between achievement in JSEP and job performance.
3. Analyze JSEP utility.

Performance Standards

- 1a. Changes in locator test scores will be reported with prior education and MOS as control variables.
- 1b. Change in summative post-test scores of assigned PC's will be reported with prior education and MOS as control variables.
- 2a. Change in reading comprehension of Soldier's Manual will be reported using a CLOZE test.
- 2b. A job performance measure using the MOS task indicator statements will be developed to assess changes in job performance attributed to JSEP.
- 3a. Characteristics of learners who master PC's off-duty will be reported.
- 3b. Average number of on-duty hours to complete JSEP will be recorded with MOS and site location as control variable.
- 3c. Usage by hours of the day will be reported.
- 3d. Optimal scheduling procedures will be recommended.

4. Analyze JSEP completion rate.
 - 4a. Completion rate will be reported by MOS with locator scores, and prior education as control variables.
5. Analyze CO attitudes toward JSEP.
 - 5a. CO attitudes will be reported regarding convenience, perceived effectiveness, and value to Army mission.
6. Assess achievement in JSEP with BSEP II criteria.
 - 6a. Change in GT scores will be reported with amount of JSEP instruction, MOS, and prior educational achievement as control variables.
 - 6b. Change in TABE scores will be reported with amount of JSEP instruction, MOS, prior educational achievement, and learning style as control variables.
7. Assess BSEP II instruction with JSEP criteria.
 - 7a. Change in locator scores will be reported with MOS, prior educational achievement, and learning style as control variables.
 - 7b. Changes in summative posttest scores will be reported with prior educational achievement and MOS as control variables.
 - 7c. Changes in job performance using JPM with task indicator statements will be used to assess changes in job performance attributed to BSEP II.
8. Analyze attitudes of ESO and instructional staff.
 - 8a. ESO and instructional staff attitudes toward JSEP will be reported regarding convenience, effectiveness and value to Army mission.

9. Analyze learner attitudes.

9a. Attitudes of troops toward JSEP in terms of perceived effectiveness, usefulness, and enjoyment of learning in environment will be reported.

OBJECTIVE X: EXPLORE THE FEASIBILITY OF USING JSEP TO AWARD HIGH SCHOOL CREDIT OR CREDENTIALS

Process Steps

1. Analyze relationship between performance on the Locator Test and on the GED.
2. Compare JSEP prerequisite competencies with GED competencies.
3. Compare JSEP prerequisite competencies with high school courses and competencies.
4. Prepare policy recommendation regarding performance on Locator and awarding of GED.
5. Prepare policy recommendations regarding JSEP PC achievement on Diagnostic Tests and the awarding of high school courses and credits.

Performance Standards

- 1a. Examine RCA validity research.
- 1b. Validate RCA research on JSEP field test population by reporting correlations between locator and GED for JSEP population.
- 2a. Results of a content analysis will be reported using SME's to rate similarity between JSEP PC's and GED competencies.
- 3a. Taking a sample of high school courses in Florida, report degree of overlap between PC's and course content.
- 3b. Taking a sample of accredited high school correspondence courses, report degree of overlap between PC's and course content.
- 4a. Policy statement is developed with supportive research documentation.
- 5a. Policy statements will be developed with supporting research documentation.

6. Present policy recommendations to regional and national accrediting societies.

6a. Target audiences are identified.

6b. Briefings with members of accrediting societies are arranged.

6c. Outcomes of briefings are reported.

OBJECTIVE XI: PREPARE SPECIFICATIONS FOR THE DISSEMINATION OF JSEP
ARMY-WIDE

Process Step

1. Develop a JSEP system model(s) based on cost and effectiveness data from field test.
2. Specify PC's for which JSEP has demonstrated effectiveness.
3. Recommend a needs assessment procedure to identify PC deficiencies.
4. Develop procedure to estimate costs to remove PC deficiencies through use of JSEP.

Performance Standards

- 1a. JSEP system model(s) are developed which optimize costs and effectiveness.
- 2a. PC with demonstrated effect sizes beyond chance are identified.
- 3a. An efficient needs assessment procedure will be recommended in a report.
- 4a. A predictive cost model will be reported to estimate cost to remove PC deficiencies.

APPENDIX

LIST OF ACRONYMS

ASVAB - Army Services Vocational Aptitude Battery
ARI - Army Research Institute
BSEP - Basic Skills Education Program
CBI - Computer Based Instruction
CET - Center for Educational Technology, Florida State University
CLOZE - Test for reading level
CTEA - Cost and Training Effectiveness Analysis
ESO - Education Services Officer
ETS - Educational Testing Service, Princeton, N.J.
FORSCOM - United States Army Forces Command
FSU - Florida State University
GED - General Educational Development Test
GT - General Technical scores from the ASVAB
JSEP - Job Skills Education Program
JPM - Job performance measure
MOS - Military Occupation Specialty
PC - Prerequisite Competency
RCA - Radio Corporation of America
SME - Subject matter experts
SSP - Scientific Service Project
TABE - Test of Adult Basic Education
TAGO - The Adjutant General's Office
TICCIT - Hazeltine Computer System
TRADOC - United States Army Training and Doctrine Command