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Job Skills Education Program: The Evaluation Plan

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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 research note, two evaluation paradigms are presented for the <p style="text-align: right;">(over)</p>		

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preliminary and full-scale tryouts of the JSEP. The preliminary tryout is a simulation of the JSEP system, and seeks to determine the effectiveness of the internal lesson production quality assurance procedures. Data provided by the preliminary tryout will help in making decisions as to the amount of formative evaluation which will be necessary in order to assure lesson quality during the remainder of the production phase of the project. The full scale tryout at two TRADOC sites and two sites belonging to FORSCOM will assess the effectiveness of the JSEP system in helping soldiers master prerequisite competencies, as well as the impact of mastering prerequisite competencies on MOS job performance. Information from the full scale tryout will contribute to the formulation of recommendations pertaining to optimal JSEP system component configurations.

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EXECUTIVE SUMMARY

Requirement:

To develop the Job Skills Education Program (JSEP) evaluation plan, which should establish whether improved performance on criterion measures was due to the new program. The contractor shall select or develop evaluation instruments and develop a data collection scheme which will reflect evaluation issues as well as quality control and revision.

Procedure:

The Florida State University JSEP internal evaluation team developed an evaluation plan based on a comprehensive study of the JSEP mission from which objectives (both formative and summative) were defined and delineated. Criterion measures were then either selected or developed based on the delineated objectives.

The evaluation plan which consists of objectives, evaluation instruments and data collection procedures, has undergone extensive internal and external reviews. Revisions were made to the original plan based on these reviews.

Findings:

An evaluation plan consisting of objectives, evaluation instruments, and data collection procedures constitute the findings of this task. The evaluation plan is divided into two major parts: the evaluation of the preliminary tryout of JSEP at Fort Rucker in 1984, and the full scale tryout of JSEP at four sites in 1985.

Use of Findings:

The evaluation plan will be implemented during the preliminary and full scale tryouts. The data will provide the information required to assess the effectiveness of the JSEP system.

FOREWORD

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: THE EVALUATION PLAN

OVERVIEW

Operational Problem

Soldiers must be trained so that each Army job is performed competently--regardless of differences in the ability and background of new enlistees. To accept a lower performance level would cause many mission elements to fail.

Many Army jobs are increasingly dependent upon the soldiers' abilities to use high technology and to learn new technology as it develops. Soldiers need more than training. They need enough education 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 primarily designed to provide soldiers with job-related basic skills instruction prerequisite to learning skill level 1 and 2 job tasks during first duty assignments. An extensive job analysis by RCA Educational Services of the 94 most populous Military Occupational Specialties (MOS) and tasks contained in the Soldier's Manual of Common Tasks identified MOS specific indicators of functional basic skills required in each MOS. These are the skills which will be taught in JSEP.

The vast majority of soldiers have been exposed to basic skills instruction before entering the Army. However, many entering soldiers have not learned or retained those basic skills well enough to apply them to learning more advanced skills. To help soldiers learn better and remember more, JSEP incorporates straightforward training in job related basic skills along with instruction on research-based learning strategies that are directly aimed at learning and retaining job skills.

Research Objective

The purpose of Task 7 is to describe the JSEP evaluation plan in terms of objectives, procedures, and data collection instruments to be used in the Task 13 preliminary tryout (to be held at Fort Rucker) and the Task 16 full scale tryout (tentatively scheduled at Forts Leonard Wood, Riley, Bliss, and Lewis). The report is organized into two parts. Part I describes the evaluation plan for the preliminary tryout during Phase II which seeks to test the effectiveness of typical lesson designs, as well as to assess early configurations of the JSEP instructional system. Part II describes the plan for the full scale tryout during Phase III which seeks to assess the effectiveness of JSEP in helping soldiers master job related prerequisite competencies (PCs), to relate the mastery of PCs to simulations of job performance, and to investigate the potential influence of JSEP in maximizing soldier performance on career-determining examinations.

Scope

Preliminary drafts of the evaluation plan have undergone review by The Florida State University (FSU) and Hazeltine internal evaluation review committee, Warren Simmons and Gail Baker of the Army Research Institute (ARI), and Clifford Hahn of the American Institutes for Research. Additionally, Gary Peterson and Richard Kraft of FSU, and Lois Wilson and Boyd Richards of Hazeltine reviewed the elements of the evaluation plan pertaining to the preliminary tryout with Frank Barbour, Assistant to the Education Services Officer (ESO) at Fort Rucker.

The FSU-Hazeltine team realizes that there will be additional refinements in the plan as it moves from concept to operation. However, looking to the future, we believe that the following issues must be given priority consideration: (1) enlisting command support to provide soldiers representative of the intended JSEP target population, (2) obtaining ESO support to provide adequate physical facilities, and (3) establishing workable arrangements among FSU, ARI, TRADOC, and the Fort Rucker Education Center for personnel for the preliminary tryout, and with FORSCOM for the full-scale tryout.

An outcome of an approved evaluation plan should be a list of requirements to implement JSEP at the respective tryout sites. Contractual arrangements and responsibilities can then be established among FSU, ARI, TRADOC, FORSCOM, and the local education centers to meet these requirements.

THE JSEP PRELIMINARY TRYOUT

The purpose of Task 13, Conduct Preliminary Tryout, is to identify potential problems in selected initial drafts of JSEP instructional materials. Additionally, the preliminary tryout will collect data on certain elements of the JSEP instructional system in an operational environment. It is planned that the Task 13 preliminary tryout will be conducted at Fort Rucker, Alabama, using both PLATO and TICCIT systems.

Objectives

The objectives of the preliminary (Task 13) tryout are as follows:

1. Find out how quickly and how well soldiers are able to use JSEP as designed, and obtain feedback on lessons from soldiers and education center personnel. The preliminary tryout will provide an indication of the effectiveness of the FSU in-house review process used to inspect lessons prior to soldier testing.

2. Identify implementation issues for selected components of the JSEP instructional delivery system including hardware (PLATO and TICCIT), orientation procedures, diagnostic prescriptive tests (Locator and lesson pretests), selected lessons, criterion-referenced posttests, personnel (tutors and ESO), the management information system, and the evaluation instruments.

The tryout should provide a good estimate of staffing arrangements necessary to conduct the full scale tryout.

3. Examine the degree to which the Locator Tests predict performance on selected individual lesson pretests. The Locator and lesson pretests are designed to measure the same ability, i.e., the soldiers' proficiency levels on PCs.

4. Assess soldier attitudes about using JSEP. JSEP effectiveness will depend largely on the motivation and effort of soldiers to master their assigned lessons within planned time limits. The completion rate may be influenced by soldier attitudes related to the ambience, instructional approach, human factors, and content of the lessons. Thus, the evaluation instruments used in the preliminary tryout will provide an indication of the attitudes of soldiers toward various elements of the JSEP system.

5. Investigate the possible instructional requirements for enabling soldiers to pass the summative posttest. The summative posttest will be composed of 36 items (three items randomly drawn from each of the 12 lessons soldiers will have completed). Correlations between the lesson posttests and the summative posttest will be examined in order to investigate the utility of this procedure for developing future summative posttests.

An index of classification efficiency (albeit crude) will be derived for each lesson included in the tryout to ascertain concurrent validity. If the classification correlations are low, the JSEP testing system components for routing the learner to appropriate lessons will be examined.

It could be that some soldiers may be able to pass the summative posttest without having completed all of the assigned lessons, while other soldiers may have difficulty passing this exam even though they have passed all of their assigned individual lesson posttests. An analysis will be made of relationships between performances on the individual lesson posttests and the summative posttest.

Curriculum for the Preliminary Tryout

The tryout curriculum will be divided into two segments: (1) a block of instructional events simulating the complete JSEP curriculum and (2) a block of additional selected short lessons. The events of the simulated JSEP (see Figure 1) include the following:

- o Orientation This element includes introductions of participants and staff, an overview of JSEP and its purposes, the completion of a background information survey, and a demonstration of how to operate the computer based instruction (CBI) system.

- o Locator Tests These tests, two 30 item multiple-choice verbal and mathematics tests, will be administered.

Max Time

JSEP Simulation

2.5 hrs	Orientation (JSEP, background, computer usage) classroom
1.5 hrs	Locator (paper and pencil administered in classroom)
2 hrs	Learning Strategies: Intro to Memory (on-line)
8 hrs	Short lessons (12), each with lesson pretest and posttest
8 hrs	Long Lessons (4) with applications in memory strategies (a) Capitals (b) Rounding (c) Gauges (d) Addition
1 hr	Summative Posttest, CLOZE Test
1 hr	Attitude Survey and interview

Total 24 hrs

Additional Formative Evaluation

As time permits

Selected Short lessons

Figure 1. Curriculum structure for JSEP tryout.

- o Learning Strategies These will be administered prior to the short lessons. A lesson on mood management will be presented. Selected techniques such as memory strategies, relaxation, and positive self-talk, will be included.
- o Short Lessons Twelve short lessons selected on the basis of breadth of curriculum and learning approaches will be delivered by computer. Each short lesson consists of a pretest, a brief review of essential rules, concepts, and operations, a short practice, and a posttest. The purpose of the short lessons is to take advantage of prior learning to reduce learning time and cost. We anticipate that many soldiers may initially fail to demonstrate mastery of a PC on the lesson pretest but, with a brief "refresher," they will be able to pass the posttest. For the preliminary trial, however, all soldiers will take all 12 short lessons.
- o Long Lessons Four complete long lessons will be delivered by computer which correspond to four of the twelve short lessons. Each of these lessons will include instruction, practice, help, and a posttest. Lessons are described more fully in the Task 5 Report for this project. Again, for the preliminary trial, all soldiers will take the 4 long lessons regardless of pretest scores.
- o Summative Posttest All participants will take a 36 item summative posttest on the assigned lessons. In the full scale tryout, soldiers will normally take the summative test only on the short and long lessons to which they have been assigned. For the preliminary tryout, the items will be drawn from the posttests of the 12 lessons included in the JSEP simulation.
- o Performance Test A CLOZE Test will also be included as a pilot test of the performance test to be included in the full scale tryout. The CLOZE Test is often used to measure readability level of materials but can also be used to measure reading comprehension.

At Fort Lewis, the CLOZE Test was used as a measure of the degree to which BSEP II soldiers could read job related field manuals (Banner, Ridge, Hewitt, & Christ, 1982).

Additionally, items will be selected from the RCA criterion tests on the basis of their validity as measures of skills taught in the 12 lessons. The items are of short answer variety and require soldiers to formulate their own responses to job-like scenarios. We believe such a test will assess a soldier's ability to recall and apply knowledge and skills acquired from the JSEP lessons.

- o JSEP Attitude Survey An attitude survey will be administered after the soldiers complete the summative and CLOZE Tests. The attitude survey will cover a variety of aspects of JSEP and computer based instruction.

A second set of selected short lessons will be available for soldiers who complete the JSEP simulation before they are scheduled to return to duty. These lessons will be selected for "opportunistic" formative evaluation on the basis of their representativeness of the entire JSEP curriculum.

Physical Facilities

The learning center at Fort Rucker currently has 4 PLATO terminals in operation. Education center personnel indicated that we will be able to use these terminals for the preliminary tryout. Four TICCIT terminals will also be installed in the education center. The room has adequate electricity and air conditioning but will need carrels or tables and chairs. A formal thirty-seat classroom is also available for orientation and testing. Frank Barbour, the assistant ESO at Fort Rucker, has been informed of the preliminary tryout implementation date.

METHOD: THE PRELIMINARY TRYOUT

The Soldiers

The preliminary tryout will require 48 soldiers. To obtain a sample of soldiers typical of the JSEP population entails enlisting the support of Commanding Officers (COs). The soldiers considered for JSEP should be those who have recently arrived at their duty station (within 3 months) and have earned General Technical (GT) scores on the ASVAB between 80 and 99. This group would much resemble a typical Basic Skills Education Program (BSEP II) population who enroll in Basic Skills Instruction to raise test scores (e.g., GT, General Educational Development [GED], Skill Qualification Test [SQT]), but who may or may not have difficulty in learning their job tasks. A data

file, with GT scores and educational attainments, is already available from the Fort Rucker ESG. Once the names are drawn (at random) from such a file, the COs will be requested by the ESO to release soldiers from duty at a mutually convenient time.

For the preliminary trial, individuals from the FSU-Hazeltine team will be designated to serve as JSEP coordinators to:

1. assist the soldiers in registration procedures,
2. conduct the orientation to JSEP,
3. teach the soldiers how to use the computer, and
4. provide instructional support in the event that individuals are unable to continue with their assigned lessons.

JSEP coordinators will be instructed not to teach the lessons to the soldiers or to provide excessive coaching but to provide assistance mainly when soldiers have difficulty operating the computer.

The main goal of the preliminary tryout is to identify parts of lessons that may not be self-instructional and to determine plausible causes. This information will be used to revise the lessons and to improve the FSU lesson design and review procedures. An outside observer, preferably from the education center, should collect information in order to define the role of JSEP coordinators so that training can be revised, as needed, for the Task 16 tryout.

Procedures

Soldiers will be asked to report to the education center from Friday of one week through the Friday of the next week for four hours each day. Each will be assigned to the center for 24 instructional hours. The tryout will include two cohort groups, one assigned one week and the other assigned the following week. Each cohort will have a morning and afternoon group of 12 each.

On the first Friday, soldiers will complete a background information survey. The JSEP coordinator will then explain the JSEP system and the purpose of the tryout. A brief JSEP orientation program will be included here. The JSEP coordinator will inform soldiers of the rules and procedures of JSEP operation, procedures to follow when they finish the JSEP simulation segment of the tryout and when to take breaks. Participants will then be instructed in the operation of the relevant CBI system (PLATO or TICCI). During the orientation period, the soldiers will also take the Locator Test and a pretest version of the summative posttest.

The following Monday, the soldiers will initially report to the orientation room for the performance test. They will then go to the learning center and will be assigned to either a TICCI or PLATO terminal for the trial period. Alternates will take the paper version of JSEP. The introductory unit on learning strategies will be taken first. As soldiers complete the learning

Soldiers are expected to progress through the short lessons at their own rates. Soldiers will also take four long lessons which accompany four of the twelve short lessons. When soldiers finish each long lesson, they will complete a Long Lesson Questionnaire (see Appendix A) for that lesson. When soldiers are unable to continue in any lesson, they will be instructed to request assistance from a JSEP coordinator.

On the last Friday, when soldiers have completed their twelve short lessons and four long lessons, they will be given a summative posttest over all lessons. This test will be composed of 36 items drawn from the posttests of the twelve lessons comprising the tryout. When the soldiers have completed the summative posttest, they will take a CLOZE Test and the RCA criterion test.

The JSEP General Questionnaire (see Appendix B) will then be administered to assess their attitudes regarding their experience in the learning environment. When the soldiers complete their assigned lessons, the summative posttest, the CLOZE Test, the RCA criterion test, and the JSEP General Questionnaire, they will return to duty. A JSEP coordinator will carry out the required check-out procedures to insure that all required information has been secured.

The JSEP Instruments

The following instruments will be used to gather information pertinent to the objectives of the tryout and copies are located in the Appendixes.

1. JSEP Soldier Background Information Survey. This survey will request information from each participant pertaining to their military history and familiarity with CBI. It will be administered during the initial orientation procedures. The information will be useful for interpreting soldier achievement levels and attitudes (see Appendix C).
2. Resource Utilization Survey: Learning Center Operation. This survey will be completed by an FSU or Hazeltine observer stationed in the learning center. It will contain such information as no-show rates, computer down-time, and total minutes soldiers were interrupted due to environmental disturbances (see Appendix D).
3. JSEP Learning Outcome Form. The JSEP Learning Outcome Form will contain test scores earned by the soldiers. Test scores include those from the Locator Test (Verbal and Quantitative), lesson pretests, lesson posttests, the summative posttest and the CLOZE test. During the preliminary tryout, this information will be gathered on-line (see Appendix E).
4. Long Lesson Questionnaire. At the completion of each long lesson soldiers will complete a short questionnaire related to the quality of instruction. This questionnaire will assess certain human factors as well as instructional quality dimensions, such as pacing, sequence, exercises; it will also solicit suggestions for improvements. (see Appendix A).

5. JSEP General Questionnaire. This questionnaire will assess attitudes of soldiers toward various aspects of JSEP. It addresses three areas: (1) computer based instruction, (2) the JSEP curriculum, and (3) general questions concerning JSEP in the Army (see Appendix B).

6. JSEP Screen Display Questionnaire. This instrument is designed to assess soldiers' preferences for information presentation on the screen.

Evaluation Standards and Design

For the tryout, arbitrary minimum passing scores will be set for the lesson posttests and the summative posttest. The group who will set the minimum scores for the tryout lessons will include available subject matter experts, instructional designers, and teachers from the Fort Rucker BSEP II classes.

Individual Lesson Standard. Three standards are appropriate for the tryout for the first set of lessons (twelve short and four long): effectiveness, efficiency, and attitude. The effectiveness standard will be based upon the percentage of soldiers who fail the lesson pretest but pass the first trial of a lesson posttest after taking the short and long lessons. The efficiency standard will be the median amount of time to complete each lesson (i.e., time to reach a passing score). The median is used since the distributions of completion times among learners is likely to be highly skewed. Attitudes toward the four long lessons will be assessed by the Long Lesson Questionnaire and attitudes toward the JSEP environment will be assessed by the JSEP General Questionnaire.

With the remaining time, as many short lessons as possible will be field-tested on the soldiers. Using these supplemental lessons during the Ft. Rucker tryout will provide an additional indication of how much additional field testing will be required for formative evaluation of the lessons.

JSEP System Standard. The evaluation standards used for the JSEP system include:

1. effectiveness,
2. efficiency, and
3. attitudes toward the experience.

The effectiveness criterion will be assessed by recording the number of soldiers who pass the short and long lessons on the first trial. The efficiency criterion will be the median amount of time to complete the assigned lessons and the pass or fail rate on the lesson posttests and on the summative posttest. Attitudes toward JSEP will be assessed by the JSEP General Questionnaire.

The Evaluation Design. The basic design for the JSEP simulation in preliminary tryout is a one group pretest-posttest design as diagrammed in Figure 2.

While such a design lacks internal validity due to history, maturation, and testing effects, we believe that with sufficient data at the observation points and with statistical controls through covariance, effective formative

evaluation decisions can be made regarding the quality of the lessons and the reliability of internal quality control procedures. Additionally, since the actual time interval for learning is one week, threats to internal validity due to maturation and history are minimal.

Testing effects may be the most difficult source of invalidity to overcome since, ideally, there should be multiple parallel forms of lesson pretests and posttests. These effects will be minimized by not providing feedback to soldiers on how they performed on individual items of the respective tests during the lessons.

01 X1 02 03

Where:

- | | |
|--|---|
| 01 = Locator Test,
Lesson pretests | X1 = short lessons (12)
long lessons (4) |
| 02 = Lesson posttests | |
| 03 = Summative posttest
CLOZE Test
Attitude survey | |

Figure 2. JSEP preliminary tryout design.

THE JSEP FULL SCALE TRYOUT

The requirements for Task 16, Conduct JSEP Tryouts at Two TRADOC and Two FORSCOM Sites, indicate that both the curriculum and management plan should be ready for trials at this stage of development. Accordingly, we propose to conduct the Task 16 tryouts presently scheduled at Fort Leonard Wood, Fort Bliss, Fort Riley, and Fort Lewis.

Based on results from the full scale tryout, inferences will be made regarding potential JSEP effectiveness, efficiency, and worth to the Army mission. At the time of the Task 16 tryout, all JSEP elements will be ready for operational testing. The following objectives for the full scale tryout address and expand the evaluation questions posed in the solicitation, the proposal, and in subsequent communications with ARI.

Objectives

The following are the objectives of the full scale tryout:

1. Examine the extent to which JSEP offers a prerequisite skills-oriented, job-related, computer-based curriculum in accordance with the specifications outlined in Task 5. Specific items include:

- o diagnosis of job-related skill deficiencies through administration of the RCA-developed tests,
- o an appropriate instructional prescription for each soldier,
- o a self-paced computer based instructional delivery system with appropriate support materials to address these deficiencies, and
- o criterion-referenced appraisal of whether the deficiencies have been successfully eliminated.

2. Identify the characteristics of individuals for whom JSEP is most effective. Here effectiveness of JSEP is defined as the successful elimination of measured deficiencies through appropriate instruction. The intent underlying this objective is to identify soldier characteristics that are related to the mastery of PCs in the instructional program. Such variables might include amount of instruction prescribed, educational attainment, rank, ethnicity, and verbal and quantitative abilities.

3. Investigate the extent to which JSEP contributes to job performance, operationally defined here as reading comprehension (measured by a CLOZE test) of an appropriate field manual, application of quantitative and verbal skills of a job related nature, post-JSEP ratings of soldiers by their supervisors and commanders (to the extent this data is available), and self-ratings by JSEP participants after they have returned to the job.

Measures of true impact on job performance should be collected on a much broader basis than will be possible before this contract expires. Even during the full scale tryout, we will not be able to serve enough soldiers to make statistically reliable estimates of the impact of JSEP that could be projected Army-wide.

We believe that full scale implementation of JSEP will require continuing contractor support until the system has become fully operational. This period of support should be long enough to permit the collection of professionally acceptable data to thoroughly assess the impact of JSEP on the Army mission.

4. Explore the effects that learning strategies have on learning in JSEP. As a result of mastering and applying certain learning strategies, it is hypothesized that soldiers should be able to achieve the objectives of their lessons more efficiently and retain the concepts and intellectual skills they have mastered throughout the planned period of measurement.

5. Investigate the effectiveness and efficiency of JSEP system components. The principal components of the JSEP instructional system include:

- o the computer hardware (PLATO, TICCIT, and the Hand-held Tutor),

- o the Locator tests that identify PC deficiencies,
- o the JSEP courseware that provides prescribed instruction directed to the achievement of diagnosed PC deficiencies,
- o the criterion tests that indicate mastery,
- o the management information system to store and retrieve relevant information,
- o the JSEP coordinators who provide instructional support when requested,
- o the physical environment of the learning centers, and
- o policies and procedures that provide for the orderly conduct of JSEP.

The evaluation procedures for each of these will be outlined in the Methods section of the evaluation plan for the full scale tryout.

6. Infer the attitudes of soldiers and other Army personnel toward JSEP based on survey instrument responses and interviews. Often in new applications of technology, the attitudes toward an event are as important as documented results.

The assessment of attitudes toward JSEP by its participants and its "consumers" will be a vital part of the evaluation plan. The primary groups of individuals will be the soldiers, JSEP coordinators, ESOs, and available immediate supervisors of the soldiers who participate in the tryout.

7. Investigate the potential relationship between JSEP participation and scores earned on tests that influence career goals. Even though JSEP is not designed primarily to develop general intellectual abilities, it is important to investigate whether the learning of job-related PCs could have some degree of transfer value to performance on more general ability measures. In this regard, performance measures that directly affect a soldier's career aspirations, both within the Army and in the civilian world, will be used as summative criterion measures. If available, these will include the GT (General Technical Area Aptitude subtest of the ASVAB), the SQT (Army MOS Skills Qualification Test), and the GED (the high school equivalency examination).

An acceptable score on the GT qualifies a soldier for reenlistment and promotion in the Army. While we will be able to accrue data regarding GT and GED performance, subsequent investigators must conduct the investigation of the relationship between JSEP participation and SQT performance since intensive follow-up procedures will be required.

8. Examine the validity (concurrent and predictive) of the Locator Tests for identifying PC deficiencies and for prescribing appropriate instruction. Correlational and classification studies will be performed on the Locator Test and the lesson pretests.

Properly developed, these tests should measure the same skills (but with different reliabilities). There should be high attenuated correlations among the two measures if they are to be used for the purpose of diagnosing PC deficiencies and for routing learners into appropriate lessons.

The outcome of this two stage test sequence should predict, within certain confidence intervals, the likelihood of passing the lesson posttest. Therefore, the accuracy will be investigated with which the Locator Tests are able to determine needs for instruction as indicated by performance on the short lesson posttests and the long lesson posttests.

9. Examine the potential flexibility of JSEP as an open-entry, open-access instructional system. A self-instructional system can offer the opportunity for soldiers to enter and exit the JSEP system as their job demands dictate. Under the JSEP management plan, the education center could theoretically accommodate soldiers any time of day or night and provide quality instruction. The feasibility of moving toward an open-entry, open-access instructional system will be explored as part of the evaluation.

10. Assess the pre-service and in-service training needs of JSEP coordinators related to the curriculum and standard operating procedures. A quasi "task analysis" of activities will be performed to identify the tasks that JSEP coordinators perform. Each of the tasks will be rated in terms of difficulty and need for pre-service or in-service training. At least one coordinator at each site should be from the education centers or the prospective coordinator population and have been trained by FSU-Hazeltine. Interviews with JSEP coordinators and ESOs will also be conducted by the FSU-Hazeltine team. With the advice of the coordinators and ESOs, a document on Standard Operating Procedures will be developed.

JSEP System Components

At the time of the Task 16 tryout, all JSEP System components will have been developed and will have undergone at least an internal review and revision sequence. The following elements of the system will be installed at the four designated tryout sites:

1. **Terminals:** It is now planned that TICCIT systems will be installed for the tryouts at Fort Riley and Fort Lewis, and PLATO systems will be available at Fort Bliss and Fort Leonard Wood. Each installation is to have 20 terminals.
2. **Coordinators:** There will be at least one trained JSEP coordinator on duty at each delivery site during the hours the education centers are customarily open.
3. **Soldiers:** Participants will be drawn from a population of soldiers newly arrived at each site whose GT or Locator scores suggest they may have prerequisite skill deficiencies that would limit their ability to master certain job tasks.

4. Management Information System: A management information system (MIS) will have been developed that stores student background data, student test and lesson performance data, and evaluation information. The MIS will also provide information about Locator Test scores and job task statements on which a soldier is predicted to have difficulty. Rules for accessing such information will have been formulated prior to the tryout.
5. Policies and Procedures: A code of Standard Operating Procedures will be developed and implemented to govern the flow of soldiers and support personnel through JSEP during the full scale tryout.
6. The JSEP Curriculum: The curriculum will consist of the following components:
 - (a) Orientation to JSEP which will include an explanation on the purpose of JSEP, its structure, operating procedures, and instructions in how to operate the computer,
 - (b) Locator Test,
 - (c) Learning strategies orientation with prompts in the long lessons,
 - (d) Short lessons for all PCs. Each lesson will include two elements: (1) instruction pertaining to essential rules, operations, and concepts along with practice exercises to "revive" prior learning of the PCs, and (2) the lesson posttest (10-15 item multiple choice test).
 - (e) Long lessons on selected high priority PCs with a posttest for those soldiers who do not pass the posttest of the short lessons.
 - (f) Summative posttest.
 - (g) Performance test consisting of a CLOZE reading test on an appropriate Soldier's or Technical manual. Other performance-like measures will be explored prior to the tryout.

JSEP Process

The soldier flow through the JSEP management system can be understood by following the flowchart presented in Figure 3. Soldiers will take the Locator Test. If the scores on the Locator predict potential deficiencies in PCs

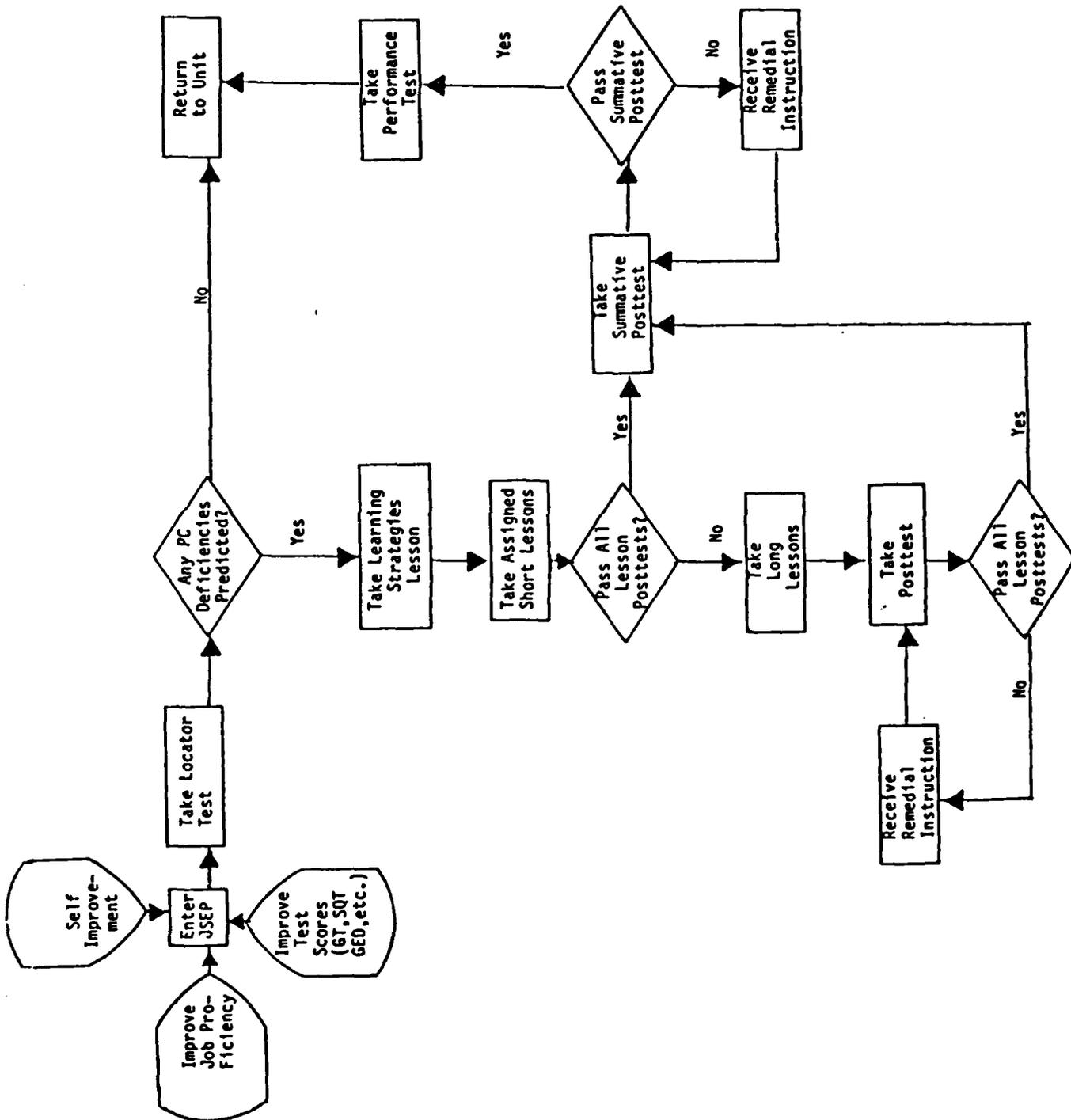


Figure 3. Basic Flow Chart of JSEP Process

required for learning the MOS job tasks, soldiers are routed to the prescribed short lessons.

They go first to the designated JSEP short lesson and receive a "refresher" review of the material. They then take the lesson posttest. If they fail the posttest after the short lesson, they are then routed immediately to a long lesson which consists of in-depth instruction of the PC. The long lesson also contains a posttest. If soldiers repeatedly fail the posttest after the long lesson, they will then be instructed to go to the JSEP coordinator for special assistance.

When soldiers have completed all of their assigned lessons by passing all of the lesson posttests, they will take a summative posttest consisting of approximately 3 items randomly drawn from each of the posttests of the lessons to which they were assigned. If they pass the summative posttest, they will be declared to have passed JSEP. Then, they will take a performance test that is intended to be related to job performance.

Physical Facilities

Tryout sites will be configured, to the fullest extent possible, to resemble an implementation site. Since there are many variations in the Army, it will be difficult to predict installation or operations problems for all sites. It is planned that a special room will be designated for "noisy" or disturbing equipment such as a printer or mainframe. We hope to find suitable large areas for the 20 terminals with a JSEP coordinator's desk near the entrance. The coordinator's space may include a table, chair, a work table for several soldiers, and ancillary print materials and hand-held computers for specific drill purposes.

METHOD: THE FULL SCALE TRYOUT

The Soldiers

We propose to identify tryout soldiers from the pool of those who have taken the Locator Test prior to the tryout start-up date or from soldiers either for whom GT scores are available. A roster of "JSEP" eligible soldiers will be generated at each base who fall within Locator or GT score parameters.

Those soldiers who have been in their duty station for more than three months will be assigned to a second priority status, to be used only if we are unable to secure a sufficient number of soldiers for the tryout from the first priority group.

From the first priority roster described above, a group of 120 will be identified and 60 randomly assigned to the treatment group while 60 others will be assigned to the no-treatment (control) group. Command support will be required to permit the selection of the appropriate population for the tryout. A special effort will be made at each post to obtain the support of the commandant for the period of the tryout. Past experience indicates that Army

priorities are often changed and neither the potential difficulty in obtaining true JSEP eligible soldiers nor the criticality of doing so can be overestimated.

Additional soldiers may be drawn from the pool or from the second priority pool depending on the degree of command support for the tryouts. Thus by combining all four sites, there will be 240 experimental JSEP soldiers and 240 control soldiers. Population samples of this size will provide adequate statistical power with which to use inferential statistics in the analysis of data.

The COs of the JSEP controls will also be sent a memorandum notifying them of their soldiers Locator Test scores, their predicted PC deficiencies and the job tasks the soldiers may encounter difficulty in mastering because of predicted PC deficiencies. The COs will be asked to release the members of this group from duty to take the JSEP Pretest Battery which consists of the assigned lesson pretests, the summative posttest Form I, the GT, the Test of Adult Basic Education (TABE), the self-concept as a learner measure (described below), the Learning Strategies Mastery test, and the performance pretest. We estimate it will take 15 to 20 hours to complete the test battery. Five weeks later, we will also request that control group soldiers be released from duty for an equal period of time to complete the posttest battery which is an alternate form of the JSEP Pretest Battery. The use of a control group will help to control for maturation effects due to time on the job and informal learning.

An additional comparison group will consist of soldiers currently enrolled in BSEP who will take the same pretest and posttest as the JSEP controls and at the same time as the controls. The FSU-Hazeltine team will request that 60 BSEP II soldiers at each site be assigned to take the JSEP pretest and posttest batteries. The principal reason for including the BSEP II comparison group is to address the issue of whether JSEP can be effective in helping individuals qualify for promotion or reenlistment through the raising of GT scores. Likewise, an alternative issue of whether BSEP II is effective in helping soldiers master PCs is also addressed through such a design.

Procedures

After the 60 JSEP experimental soldiers have been assigned to participate in JSEP at each site, 20 will be randomly assigned to the morning session, 20 to the afternoon, and 20 to the evening session. When the soldiers report to the education center at their assigned times, a JSEP coordinator will check them in and assign each a terminal for use during the tryout.

The coordinator will conduct an orientation session which will include a statement of the purpose and structure of JSEP and a demonstration on how to log-on and use the computer. Following the orientation, the soldiers will take the following instruments: JSEP Background Survey, prescribed lesson pretests, TABE (if they have not already taken it), the GT (also if they have not already taken it), the Learning Strategies Mastery Test, the Learning Self-Concept Inventory, and the CLOZE pretest. The soldiers will then engage in the Learning Strategies lesson which, according to present estimates, will encompass about 20 hours of instruction.

Following the learning strategies lesson, the soldiers will engage in the short lessons for those PCs that have been prescribed. Should soldiers fail the posttest after a short lesson, they will be assigned to a corresponding long lesson which treats the PC in greater depth. Here the JSEP coordinator may assist the individuals in reviewing the results of the pretests and posttest so that subjects gain some awareness of the nature of their deficiencies. Following the long lesson, soldiers will take a posttest followed by the Long Lesson Questionnaire. If soldiers fail the posttest of a long lesson, they will again seek the assistance of the coordinator for review of the posttest and to recycle back through the lesson, or parts of it.

When soldiers complete their assigned lessons by passing the posttests, they will then take a summative posttest (final exam). If the subjects pass their summative posttest, they will take JSEP Posttest Battery consisting of the CLOZE Test, Learning Strategies Mastery Test, the Self-Concept as a Learner Test, TABE, GT, and the JSEP General Questionnaire. Should soldiers fail their final exam, they will again seek the assistance of the JSEP coordinator to review the results of the test and to plan further instruction. This may consist of one-on-one instruction, a second pass through short lessons or long lessons, or a combination of these followed by a second attempt at the summative posttest. All soldiers before they return to duty will take the JSEP Posttest Battery.

Should soldiers be unable to complete their assigned lessons by the end of the tryout period, they will be required to take a tailored summative posttest over their assigned lessons in the last week. Pass and fail rates will be carefully noted in these circumstances.

The JSEP Instruments

Some of the instruments described in Part I on the preliminary tryout will be refined and used in the full scale tryout. Elaboration of the instruments described herein will chiefly concern the instruments that have not been detailed earlier.

1. JSEP Soldier Background Information Survey. This will be the same instrument as used in the preliminary tryout.

2. Resource Utilization Survey: JSEP Learning Center Operation. This instrument will be similar to the instrument used in the preliminary tryout in terms of the kinds of information sought, but it will extend over the entire 5 week JSEP cycle. There may also be some elaboration to record the use of support media and services. The respective ESOs will be consulted in developing the final version of the instrument. This instrument will be completed each day by the JSEP coordinator.

3. JSEP Learning Outcome Form. The full scale tryout will gather the same information as the preliminary tryout and will be administered on-line.

4. Long Lesson Questionnaire. This will be the same instrument as was used in the preliminary tryout and will be administered as soldiers complete the lesson.

5. JSEP General Questionnaire. This will be the same instrument as is used in the preliminary tryout, and will be administered as soldiers complete their set of assigned lessons, or in the fifth week of the JSEP tryout by those soldiers who have not completed their lessons.

6. JSEP Job Performance Test. One of the skills soldiers should possess is the ability to comprehend their manuals. Since JSEP offers a curriculum that seeks to develop cognitive capabilities (PCs) as opposed to psychomotor abilities, a proximal job performance test should be one that is particularly sensitive to cognitive development. We believe there is a significant amount of validity in the proposition that gaining intellectual skills and mastering concepts and rules in JSEP should transfer to the capability for comprehending manuals with greater accuracy.

The characteristics of a job performance test should include the following considerations:

1. It should be job-related,
2. it should be amenable to the development of multiple parallel forms,
3. it should be easy to administer and score,
4. it should possess adequate reliability,
5. it should require not more than one hour to complete, and,
6. it should yield results that are quantifiable to allow comparisons between groups of soldiers.

The CLOZE procedure (Harris & Sipy, 1980; Klare, Sinaiko, & Stolurow, 1972) meets the above conditions. The CLOZE procedure requires readers to supply missing words omitted from a passage (such as every fifth word). It is based on the assumption that a reader who is able to understand the structure and content of a written message should be able to fill in words removed from it.

A prototype CLOZE procedure was used to evaluate the outcomes of the BSEP II program at Fort Lewis with promising results (Banner, Ridge, Hewitt, & Christ, 1982). Here, one passage was randomly selected from each of two field manuals Soldiers Manual, MOS 11B10-Infantryman-11B10, FM 7-11B1/2, and Soldier's Manual, MOS 13B/Cannon Crewman, Skill Level 1 and 2.

The FSU-Hazeltine team will follow upon the work initiated by Banner et al. (1982) and produce a CLOZE Test that will be applicable across a wider array of MOS. An attempt will be made to include graphic and quantitative components as well. The CLOZE Test will be pilot tested during the preliminary tryout. Two forms of the test will be constructed for use as pretest and posttest measures.

8. JSEP Job Performance Measure (JPM). In addition to the possible use of Enlisted Efficiency Reports (EERs) to assess the influence of JSEP on job performance, the FSU-Hazeltine team will develop a job performance measure based on task statements. Since the JSEP curriculum evolved from the synthesis of job task indicator statements, a valid JPM to test the transfer of knowledge and intellectual skills to job task performance should encompass the use of appropriate task statements. As envisioned at the present time, an NCO will complete a checklist consisting of task statements that soldiers might have difficulty performing given their Locator Test scores.

At the present time we plan to develop a JPM with 25-30 MOS related critical task statements derived from the RCA task analysis. The NCO will rate each task statement in terms of whether or not the soldier performs the task at an acceptable proficiency level. Here, acceptable proficiency will be defined in terms of the way the NCO defines "acceptable".

It will be highly desirable to collect these data from the units for JSEP experimentals, JSEP controls, and for BSEP II populations three months after the JSEP Tryout has been completed. Whether the data can be collected depends on cooperation from each of the tryout sites.

9. Learning Strategies Mastery Test. A test will be designed and developed to assess the degree to which soldiers possess certain learning strategies. The instrument may consist of a study skills inventory, selected memory performance tasks, test taking skills measures, positive self image measures, and selected problem solving tasks.

10. Self Concept as a Learner Inventory. Prior to the full scale tryout, the FSU-Hazeltine team will identify instruments that assess self concept as a learner. Such instruments assess dimensions such as confidence in learning new material, and the belief in the ability to attain educational goals. If it is shown that JSEP has an impact on self concept as a learner, there would be a compelling justification for institutionalizing JSEP since this would provide evidence that JSEP can help soldiers "be all they can be."

Evaluation Design

The evaluation design for the full scale tryout can be described as a randomized pretest-posttest experimental and comparison group design where JSEP samples drawn at random from Locator Test rosters. BSEP II subjects are drawn from classes beginning approximately six months after the start of Phase III. JSEP, BSEP II, and control group soldiers will take the same pretest, post-tests, and undergo the same follow-up observations. Such a design is diagrammed in Figure 4.

Learning strategies evaluation. The evaluation of the contribution of learning strategies to JSEP is approached from two perspectives:

1. proximal effect, which is the growth in certain capabilities, and,
2. the impact of learning strategies on external criteria.

Both of these perspectives are required to determine the cost-effectiveness of the learning strategies component.

R ₁	O ₁	X ₁	O ₂	O ₃	O ₄	(n=120)
R ₂	O ₅	X ₂	O ₆	O ₇	O ₈	(n=120)
R ₃	O ₉		O ₁₀	O ₁₁	O ₁₂	(n=240)
C ₁	O ₁₃	X ₂	O ₁₄	O ₁₅	O ₁₆	(n=240)

where

O_{1,5,9,13} = Locator Test
 Summative Posttest (Form I)
 Job Performance Test (Form I)
 Job Performance Measure
 TABE
 GT
 Self Concept as a Learner
 Learning Strategies Mastery Test

R₁ = JSEP Learning Strategies
 R₂ = JSEP With Learning
 Strategies
 R₃ = JSEP controls
 C₁ = BSEP II participants
 (comparison group)
 X₁ = JSEP curriculum with
 Learning Strategies
 X₂ = JSEP without Learning
 X₃ = BSEP II curriculum

O_{2,6,10,14} = Summative Posttests (Form II)
 Job Performance Test (Form II)
 TABE
 GT
 Completion time
 Attrition rate
 Self Concept as Learner
 Learning Strategies Mastery Test

O_{3,7,11,15} = Job Performance Measure

O_{4,8,12,16} = SQT
 GED

Time between O_{1,5,9} and O_{2,6,10} is 6 weeks.

Time between O_{1,5,9} and O_{3,7,11} is 3 months.

Observations for O_{4,8,12} will be made whenever subjects voluntarily take those tests

Figure 4. JSEP full scale tryout evaluation design.

Proximal effects. The Learning Strategies Mastery Test Forms I and II will be administered in a pre-posttest paradigm to derive gain scores for four evaluation groups (JSEP experimentals with learning strategies (Randomized group 1), JSEP experimentals without learning strategies (Randomized group 2), JSEP controls (Randomized group 3), and BSEP II (Comparison group 1)). The gain scores of respective groups will be compared through analysis of covariance with the pretest scores used as the covariates. All individuals in the JSEP experimental group will have had some minimal exposure to the treatment.

Impact of mastery of learning strategies. Learning strategies theories hold, according to Dansereau (1983) and McCombs (1983), that learning strategies capabilities will influence the rate of learning, the ability to recall concepts and rules, and the ability to solve problems. The learning strategies curriculum in JSEP consists of first being exposed to a learning strategies orientation in which soldiers learn "learning" concepts and skills. These are applied and reinforced in the ensuing long lessons to which the soldiers are assigned. Gains in learning strategy capability should manifest themselves in performance on the summative posttest (a recall and recognition test) and in lesson completion time.

To isolate the effects of learning strategies mastery, two subgroups of the experimental JSEP group will be formed:

1. those who have the learning strategies orientation experience plus four long lessons with intensive learning strategy reinforcers, and
2. those who do not have the learning strategies orientation but are assigned the same four long lessons in addition to their prescribed lessons based on the Locator Test and lesson pretests.

Even though the latter group may have learning strategy reinforcers embedded within existing lessons, without the initial learning strategy mastery and skill development acquired during orientation, the effect of the prompts within JSEP lessons may be negligible.

Soldiers will be randomly assigned to one of these two groups; 120 will have the JSEP learning strategies orientation plus reinforcement, and 120 will not have the JSEP learning strategies orientation. Both groups will be compared in terms of performance on the summative posttest, CLOZE Test, lesson completion rate, and job task performance. Analysis of covariance will be used to partial out the effects of Learning Strategies Mastery pretest scores.

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APPENDIX A
Long Lesson Questionnaire

Long Lesson Questionnaire

Lesson Title:

I. Read each question below. Circle the number that comes closest to your opinion.

1. Were the words in the lesson easy or hard to read?

1
easy

2
neither

3
hard

2. Were the pictures in the lesson easy or hard to figure out?

1
easy

2
neither

3
hard

3. Were the pictures in the lesson helpful or not helpful?

1
helpful

2
neither

3
not helpful

4. Were the practice exercises in the lesson helpful or not helpful.

1
helpful

2
neither

3
not helpful

5. Were the messages for wrong answers helpful or not helpful?

1
helpful

2
neither

3
not helpful

6. Were the test questions at the end of the lesson easy or hard?

1
easy

2
neither

3
hard

7. Was the arrangement of the material in the lesson easy or hard to follow?

1
easy

2
neither

3
hard

8. Overall, was the lesson interesting or boring?

1
interesting

2
neither

3
boring

9. Overall, was the lesson easy or hard?

1
easy

2
neither

3
hard

10. Would you have preferred to use a printed workbook rather than a computer for this lesson?

1
yes

2
doesn't matter

3
no

11. Would you have preferred to learn this lesson from an instructor rather than a computer?

1
yes

2
doesn't matter

3
no

II. Read each question. Write your answers in the space after each question.

1. What do you think was the best part of the lesson?

2. What do you think was the worst part of the lesson?

3. (a) What do you think was the hardest part of the lesson?

(b) How do you think it could have been made more effective?

4. (a) Do you think the short review lesson that you took before this lesson should be changed?

_____ YES

_____ NO

(b) If yes, how should it be changed?

APPENDIX B
JSEP General Questionnaire

JSEP General Questionnaire

I. Read each statement below. Circle the number that comes closest to your opinion.

1. It was easy for me to learn to use the computer.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

2. Using the computer for four hours at a time was too long.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

3. I think the instructor in the educational center should teach the lessons instead of the computer.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

4. The Hand-held Tutor helped me to learn.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

5. I think computer lessons should be used only to practice what we learn from an instructor.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

6. I think written assignments should be used along with computer lessons.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

7. The lesson about mood management helped me control my mood during the other JSEP lessons.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

8. I think I will use what I learned about mood management in other situations.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

9. The lessons I studied will help me in my MOS.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

10. Overall, the JSEP program was well-managed.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

11. I would be willing to take more JSEP lessons offered on a computer if they were offered during on-duty hours.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

12. I would be willing to take more JSEP lessons offered on a computer if they were offered during off-duty hours.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

13. I think my unit commander would be willing to release me from duty to take JSEP lessons.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

14. I think JSEP lessons will help me read and understand the publications I use.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

15. The skills I've learned in JSEP will help me advance to a higher grade/rank in the Army.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

16. I think JSEP should be included as an educational program offered by the Educational Center.

1	2	3	4	5
strongly agree	agree	uncertain	disagree	strongly disagree

II. Read the following list of reasons for taking future JSEP lessons. Put a check on the line before each one that would be an important reason for you to take more JSEP lessons.

- for self improvement
- for general knowledge
- to increase job proficiency
- to pass the SQT
- to raise ASVAB (GT) score for reenlistment
- to qualify for a different MOS
- to obtain a GED certificate

APPENDIX C
Soldier Background Information Survey

JSEP
Soldier Background Information
Survey

Name _____ Post _____

SS# _____ Rank _____

Age _____ Sex _____

Racial/Ethnic Background
White (non-hispanic) _____

Black _____

Hispanic _____

Oriental _____

Other _____

How long have
you been in
the Army? _____
years _____
months

What is your MOS? _____

What is your duty position? _____

How long have you been doing this job? _____
years _____
months

How long have you been stationed at this post? _____
years _____
months

Have you taken course(s) taught mainly by computer? yes _____ no _____

Have you taken course(s) taught mainly by audio/visual presentations?
yes _____ no _____

Do you wish to qualify for reenlistment in the Army? yes _____ no _____
don't know _____

Do you have a high school diploma or GED certificate? yes _____ no _____

If no, what is the highest grade in school you completed? _____

Have you had any post high school education? yes _____ no _____

If yes, what kind (vocational/technical school, community college,
college) and how many years completed?

Which of the following BSEP courses have you taken? Reading _____,

Grammar and Writing (Communications) _____, Mathematics _____,

ESL _____.

APPENDIX D
Resource Utilization Survey

First Week _____

Second Week _____

Observer _____

Resource Utilization Survey:
Learning Center Operation

The following data will be recorded by observer from FSU-Hazeltine.

1. Number of troops attending (FTE)	M	T	W	Th	F
Group I PLATO (n = 8)	_____	_____	_____	_____	_____
Group II TICCAT (n = 8)	_____	_____	_____	_____	_____
2. Computer down-times (Please record time in appropriate places).	M	T	W	Th	F
From	_____	_____	_____	_____	_____
To	_____	_____	_____	_____	_____
From	_____	_____	_____	_____	_____
To	_____	_____	_____	_____	_____
From	_____	_____	_____	_____	_____
To	_____	_____	_____	_____	_____
3. Environmental distractions (Please describe below)	M	T	W	Th	F
a) _____	From	_____	_____	_____	_____
	To	_____	_____	_____	_____
b) _____	From	_____	_____	_____	_____
	To	_____	_____	_____	_____
c) _____	From	_____	_____	_____	_____
	To	_____	_____	_____	_____

APPENDIX E
Learning Outcome Form

JSEP Learning Outcome Form

Name _____

Soldier Cohort I II III IV

1. Locator Scores

V _____
M _____

2. Lesson Performances

Lesson	Pretest1	Posttest1	Posttest2	Pass/Fail
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				

A

B

3. Final exam pretest score _____

4. Final exam posttest score _____

5. RCA criterion test pretest score _____

6. RCA criterion test posttest score _____

7. CLOZE test _____