Table 3i. P.M. Package Outline

Lesson No. 8 Date Prepared 3/5/71

Lesson Title Control Information and Recognition Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	Introduction A. Re-define and explain the idea of control. B. Review planning and implication in terms of control. C. Describe the necessary elements of control. D. Describe and indicate importance of the re-cycling (feedback) aspect of control.			Tape	H_1	10 min.
2	A. Information needs for control: 1) explain why needed 2) indicate what is needed (time, cost, and performance TCP). B. Obtaining the information by reports: 1) type of reports 2) content of reports 3) format of reports 4) reporting dates			Tape	H_2 $H_{2.1}$	6 min.
3		Given a plan (MIS) the trainee will specify the type and dates that reports be given to the project director.	A list of the reports and the dates needed with an explanation of the selection of the same (R).	Booklet	H_2 $H_{2.1}$	5 min.
4	Comparing report information to plan to determine deviations: A. At the time of a report past, present, and future considerations. 1) note event and activities completed. 2) re-determine TCP for the activities in progress 3) re-estimate TCP for the near future activities.			Tape	H_3 H_4	15 min.

Lesson No. 8

Date Prepared 3/5/71

Lesson Title Control Information and Recognition

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
Con't 4	B. Recognizing deviations: 1) Process the finding to match plan. 2) Compare the finding to the plan. If the difference are within planned bounds there is no deviation, if not a deviation. 3) Listing deviation					
5		Given a plan and several short reports the trainee compares the actual condition to the plan and lists the deviations.	A list of the deviations (R).	Paper	H_3 H_4	10 min.
6		Branching test of ability to develop a interrelationship rational for TCP and establishing a set of values and criteria to judge significant deviation. If successful the trainee skips to step 8 and if not he continues on to step 7.	Answer sheet (A).	Booklet	H_5 $H_{5.1}$ $H_{5.2}$	7 min.
7	Recognizing the significant deviation from project plan. A. Explain the importance of ranking B. Developing a rationale for the interrelationship of TCP in a project (example). C. Establishing a set of values and criteria for judging significance of a deviation.			Booklet	H_5 $H_{5.1}$ $H_{5.2}$	10 min.

Table 3i. con't

Lesson No. 8

Date Prepared 3/5/71

Lesson Title Control of Information and Recognition

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
8		Given some funding agency, LEA, and other general constraints the trainee develops a rationale for the interrelationship of TCP in a project.	A statement for the interrelationship of TCP and an explanation of it was obtained (R).	Booklet	$H_{5.1}$ PP	5 min.
9		Given a rationale for the interrelationship of TCP the trainee develops a criteria for judging the significance of a deviation from plan for a project.	A list of criteria necessary for judging the significance of a deviation and an explanation of the need for including a given element. (R)	Booklet	$H_{5.2}$	5 min.
10		Given a list of deviations from plan and a list of criteria the trainee lists in order of importance the deviations.	Ranked list of deviation and the reasons they were placed in that order (R).	Booklet	H_5	5 min.

Table 3j.
Lesson No. 9

Date Prepared 2/22/71

Lesson Title Control Alternatives and Decisions

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1		Branching test: Of knowledge of the vocabulary, ability to create alternative course of action, and ability to establish a set of criteria to eliminate the more unfeasible alternatives. If the trainee is successful he skips to step 3, if not continues to the following step 2.	Answer sheet (A) Answers will also furnish reinforcement for those successful	Paper	H_6 $H_{6.1}$	5 min.
2	A. Introduce and explain the purpose of developing alternative courses of action to correct significant deviations from plan for a project. Give examples when applicable to facilitate insight. Alternatives areas to consider are: - modifying the trade-off relationships of performance, schedule, and cost within the plan. - modifying the information-report system to more accurately describe the operations - modifying the plan so as to reduce the differences of the plan to the operations - modifying the goal or missions of the project so as to allow accomplishment of the project realizing contract constraints. B. Introduce and explain the purpose for the establishment of a set of criteria for the selection of an alternative to aid in rejecting the more unfeasible alternatives at an earlier state of consideration. Give examples where possible.			Tape	H_6 $H_{6.1}$	15-20 min.

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95

Les on No. 9

Date Prepared 2/22/71

Lesson Title Control Alternatives and Decisions

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
3		Given a deviation from plan (problem) the trainee will develop a list of alternatives.	List of alternatives to the given problem. (R) The trainee checks his list with the given list. If the trainee is not satisfied he consults with a colleague knowledgeable in project management.	Paper	$H_{6.0}$	10 min.
4		Given a list of alternatives and some constraints for a given problem the trainee establishes a set of criteria for the selection of an alternative and rejects several of the alternatives.	List of rejected alternatives and accepted alternatives with an explanation for the rejection and acceptance of each. (R)	Paper	$H_{6.1}$	5 min.
5		Branching Test: of knowledge of the vocabulary, ability to describe on an alternative to be implemented using a set of criteria and the ability to cite the consequences of the alternatives. If successful skip to step and if not continues to the following step 6.	Answer sheet (A) Answers will also furnish reinforcement for those successful	Paper	H_7 $H_{7.1}$ $H_{7.2}$	5 min.

Table 3j. con't
Lesson No. 9

Date Prepared 2/22/71

Lesson Title Control Alternatives and Decisions

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
6	A. More fully explain the purpose for the establishment of a set of criteria to rank a set of alternatives to aid in the selection of one for implementation. B. Introduce and explain the purpose for projecting and citing possible consequences of the more acceptable alternatives and considering these in selecting an alternative for implementation.			Tape	H_7 $H_{7.1}$ $H_{7.2}$	10-15 min.
7		Given a list of alternatives and some of the constraints, the trainee establishes a set of criteria for the ranking and selection of an alternative and ranks the alternatives.	List of ranked alternatives and the reasons for the ranking. If the trainee does not agree he consults with a colleague knowledgeable in project management. (R)	Paper	$H_{7.1}$	10 min
8		Given a list of ranked alternatives, the trainee lists the consequences of selecting the first three alternatives and selects one of them.	List of consequences for the given alternatives. (R)	Paper	H_7 $H_{7.1}$	10 min
9	Elements of the decision making process that should be included in a status report to top management.			Tape	H_8	5 min.
10		The trainee creates a short status report for the decision made in step 8 to be sent to top level management.	List of the elements usually included in a status report (R)	Paper	H_8	10 min.

P.M. Package Outline

Table 3k.
Lesson No. 10

Date Prepared 3/1/71

v Lesson Title Decision Implementation

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1		Branching test: of elements of a plan to implement a decision. If successful the trainee proceeds to step 3, if not he continues to step 2.	Answer sheet (A) Answers will also furnish reinforcement for those successful.	Booklet	H_9	5 min.
2	Elements to be considered in the creation of a plan for the implementation of a decision: a) informing, motivating and directing project personnel. b) informing top management c) making changes in the project information system d) devising the original plan			Tape	H_9	10 min.
3		Given a decision the trainee creates a plan for the implementation of that decision within the project.	List of elements that should have been included in the plan (R).	Booklet	H_9	10 min.
4	A. The implementing of the plan for the desired change in the project. B. Focusing of attention on the changes to see if it is operating as desired. C. Information needed to see if the implementation is successful.			Tape	H_{10}	10 min.
						98

Table 3k. con't

Lesson No. 10

Date Prepared 3/1/71

Lesson Title Decision Implementation

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
5		Given a decision implementation plan the trainee creates an action report for top management as a possible first step for plan implementation.	List of elements that should be included with action report (R).	Booklet	H_{10} H_8	5 min.
6	Review of the control phase with particular attention to the re-cycling process.		(R)	Tape	H_{1-10} $H_{10.1}$	10 min.

Table 31.

Lesson No. 11

Date Prepared 3/15/71

Lesson Title Project Termination

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	I. An Overview of Basic Activities Involved in Project Termination Upon Conclusion of Effort: A. Final Reports B. Personnel Disposition C. Facilities-Equipment Disposition D. Criteria for Retention of Project Criteria E. Project History			Tape w/ slide	I_{1-6}	2 min
2	II. General Characteristics of Final Report Structures. A. Signs of a good report. B. Contents of reports. C. Agency Requirements as constraints. D. Dissemination plan and procedure.			Tape w/ slides Sample report outline in book	I_1 I_2	5 min
3		Student develops outline for final report including plan for dissemination.	Checks against sample report in book and list of guidelines on visuals.	Booklet Worksheet	I_1 I_2	10 min.
3	III. Personnel Disposition as Activity in Project Termination: A. Termination important as recruitment. B. Termination considerations in terms of level and type of personnel. 1) professional personnel 2) technical support personnel 3) clerical personnel			Tape and slides	I_3	10 min

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Table 31. con't

Lesson No. 11

Lesson Title Project Termination

Date Prepared 3/15/71

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
Con't 4	C. Termination in terms of Project Organization D. Alternatives for Personnel Disposition: 1) absorption into internal agency 2) transfer to different project 3) personal files forwarded to new organization or project.					
5		Student is provided with list of personnel types and categories and suggest alternatives for particular types.	Compares his recommendations with suggested ones in booklet. (A)	Booklet and Worksheet	13	10 min
6	IV. Facilities Disposition A. Types of equipment to be re-located. 1) furniture 2) typewriters, dictating equipment. 3) physical space (offices). 4) specialized research equipment B. Permissible Relocation 1) U.S. government equipment 2) LEA equipment C. Development of Plan for Re-Location 1) inventory 2) recommended placement 3) dates of availability 4) approval of plan 5) agencies notified of availability			Tape & visuals	14	10 min
7		Given a list of physical equipment, student makes recommendation for disposition	Developed plan checked against a set of questions covering good plan (A)	Booklet Worksheet	14	10 min

Table 31. con't

Lesson No. 11

Lesson Title Project Termination

Date Prepared 3/15/71

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
8	V. Records Management A. General Principles of Good Record Management B. Specific Constraints upon Record Retention 1) financial audits 2) data for professional verification 3) local rules and regulations 4) funding agency rules and requirements C. Types of Records to be Reviewed 1) appointments 2) travel 3) requisitions 4) purchase orders 5) staff minutes 6) cumputer outputs 7) draft reports 8) contracts 9) progress reports 10) data recordings 11) data cards 12) correspondence			Tape with Slides	I_5	15 min
9		Student given several items. Separates into retained and not-to-be retained. Lists factors for classification - generates set of criteria.	Comparison of generated criteria against recommended set (A).	Booklet	I_5	10 min

Table 31. con't

P.M. Package Outline

Lesson No. 11

Date Prepared 3/15/71

Lesson Title Project Termination

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
10	VI. Project History A. General Function of Project History 1) record of events as they occurred. 2) serve as learning device to avoid future errors. B. Items to be Included in Project History: 1) contract negotiations 2) project origin 3) personnel 4) causes of significant problems 5) remedial actions 6) records and equipment disposition C. Format of Report 1) project objectives 2) time sequence of events 3) list of personnel 4) list of reports and publications 5) recommendations of/or future projects			Tape with Visuals	16	10 min
11		Given a list of possible project activities, sorts into items for inclusion and reporting.	Checks against list presented in booklet.	Booklet Worksheet	16	10 min
12	VII. Summary of Main Points			Tape	1 1-6	2 min

Table 3m. P.M. Package Outline

Lesson No. 12

Date Prepared 3/15/71

Lesson Title Transition to Case or Termination

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	Directions to Student Upon Completion of Last Lesson A. Choice of Case-Simulation B. Final Termination					2 min
2		1. Student chooses to terminate.	Completes cognitive posttest and task inventory. Checks profiles to see progress.			One hour
		2. Student continues to work on case.	Assigned case material (and group if seminar). Completes case, then does cognitive test and P.M. inventory.			20 hours

E. Presentation of Practice and Reinforcement

The incorporation of practice opportunities and the provision of reinforcement for the Project Manager Training Package will be done basically as in the Orientation Package. There are however some differences which require special emphasis.

The larger number of lessons and the desire to secure a greater or stronger acquisition of specific skills and abilities on the part of the learner necessitates that there be many opportunities to practice skills and behaviors within each lesson than in the case of the Orientation Package. It is planned to have a larger variety of exercises in order to both practice particular skills as well as to give a diversity of application. The provision of practice in the individual lessons will be done largely through mini-exercises, immediate reinforcement or feedback will be provided. In those situations, where the correctness of the practice is open to judgment, reinforcement will be provided by the incorporation of solutions which reflect a desired or recommended handling of the problem.

In order to develop a synthesis of the separate skills obtained from the lessons, the case-simulation as described in Section IV will be used as the basic vehicle for this integration. Reinforcement will be handled by presenting the learner with a solution indicating how the problem might have been handled by a person competent in the field.

In developing the practice and reinforcement sequence, the total package will be organized so that the student has had an opportunity to practice and be reinforced on a mini-exercise related to the behavior required to deal with that dimension of the simulation exercise before participating in the case-simulation.

F. Quality Control

In terms of basic dimensions, quality control procedures for the Project Management Training Package are not substantially different from that for the Executive Orientation Package. The difference however is in terms of number of objectives involved as well as the scope of content and duration of individual lessons in the total package. This makes the process of quality control somewhat more difficult to design. Preliminary suggestions for a quality control design for both the learner and total package dimension are presented below.

The Learner

The basic function of the quality control procedure from the learner's viewpoint is essentially developing a methodology for letting the student know how well he is doing and where he needs to receive additional instruction. In addition, he should react to each element of the total package in terms of its helpfulness to him in achieving the objective set forth.

It is proposed that three items be developed in order to insure the quality control. One procedure would be to ask the student to complete again the project management inventory and develop a profile in exactly the same manner as before starting the lesson. He would then be urged to compare the two profiles and notice where discrepencies occurred. He would then be directed to review those sections of the total package which would help him to correct the deficiencies. The second item would be the development and administration of a cognitive achievement test so that content of the individual lessons could be

assessed and revised. The cognitive test would be of an objective form with an answer key provided so that the student could immediately assess his own performance and correct possible deficiencies by reading the appropriate sections. Directions would be incorporated into the general instructions for the manual to cover the situation when materials are used in a workshop or seminar environment. Directors of such seminars would be encouraged to forward the results of such examinations to the appropriate agency so that a summative evaluation could be carried out and subsequent materials revised. This cognitive test would be in addition to the individual pre and post test designed for each lesson. The third item would be the development of a rating form or reaction sheet which would permit the learner to react to individual lessons with regard to appropriateness of examples, illustrations, practice exercises, format, and related items. Such reaction sheets could be forwarded to an appropriate designated agency for consolidation and development of suggestions for revision.

Total package. The essential function of total package quality control would be to provide a mechanism so that the agency distributing the self-instructional materials could secure reactions leading to necessary revisions. Some possibilities such as providing a detachable sheet as in the case of the Executive Orientation, follow-on from the support agency to the students after completion of the exercise to determine utilization of content and skills, or some similar alternative could be considered. It is proposed that the principle vehicle for checking up on the utility of the total package would be essentially that

of the detachable sheet within the package which is completed upon termination of all lessons. This form would provide an opportunity for the individual learner as well as a workshop director to react to such items as the content coverage, the examples used in connection with the content, the mode and methodology of presentation, the practice opportunities within each lesson, and similar cognitive dimensions. A second section would be devoted to affective dimensions associated with the materials. Items dealing with the motivational nature of the content, its function as a stimulant to secure additional project management training, encouragement to read additional materials, and measures of whether or not the material is interesting would be incorporated in this dimension.

Subsequent to the development of the prototype materials, it is suggested that some thought be given to developing a feasible and practical way of determining the utilization of the skills and the value of the total package in an actual situation. A vehicle which would allow for the follow-up of a student completing the package to see if the skills were used and if they did benefit or improve his practice of project management would be highly desirable. Another procedure that might possibly be employed would be to develop some type of continuous follow-up with the student to insure utilization of the skills. This might be done by sending him a monthly problem or topic with which he could apply his skills and serve as a "jogger" to his memory. Such notes or problems could be sent on a monthly basis for a period of six months to a year.

The development of quality control checks and procedures for both the learner and the total package themselves will have to be checked for

quality control from time to time. The suggested forms and scales developed above might not provide the necessary type of student reaction useful to conducting proper revision of the packages. It is suggested therefore that a periodic schedule of review of the packages be developed so that information and feedback received from time to time might be summarized and necessary materials revision be made.

G. Case-Simulation Component

Specifications for the development of the total instructional package as contained in both the contract and the RBS memorandum of November 1970 included a requirement that the Project Manager Training Package be so designed that approximately half of the total time of a 40-hour workshop setting be allocated to participant involvement in some type of case-simulation to apply the skills and concepts learned from the self-instructional materials. This section outlines the preliminary design specifications to meet this requirement.

In the context used here, "case-simulation" means some type of student activity which is larger than the single practice exercise employed in the self-instructional package to practice a particular skill. The basic function of the case-simulation is to place the student in an operational setting where he can begin to synthesize the separate skills and to operate more in the manner which it is conceived that a project director or manager would operate.

The role of the case study approach in the training of management personnel has been well documented by Willings. Several types of case situations including discussion, in-basket, role-playing, simulated management, and group simulated management technique are reviewed. Suggestions for using and preparing case studies are presented. The development of a group simulation project management exercise has been reported upon by Cook and Dillman* and Dillman.* This exercise was

*Desmond L. Cook and Duane Dillman, "Simulation in the Training of Research and Development Project Managers," Educational Technology, 9: 39-43, May, 1969.
Duane H. Dillman, A Simulation Exercise For the Training of Educational Research and Development Program Managers, Ph.D. Dissertation, Ohio State University, 1969.

utilized in a series of project management training seminars conducted under a grant from the U. S. Office of Education. The current version of this case-simulation exercise is titled SIMTAR. It has been employed in a wide variety of settings, including workshop activities carried out under the current contractor for this effort.

1. Consideration of Alternatives

The above discussion points out that there are various alternatives available with regard to the type of case-simulation that might be employed in this component of the total package. In considering alternatives, several preferences were identified which had an influence upon the final specification selection as described below. These several preferences were as follows:

a. The exercise should provide the student with an opportunity to integrate and synthesize performance and knowledge gained in the self-instructional materials.

b. The exercise should be viewed as a stand alone item. The student could choose or not to complete it. However, it should not be possible for a student to complete the exercise unless he had first completed the self-instructional materials.

c. The basic setting for the case-simulation should be that of an LEA and the problems involved should be of the type likely to be or actually encountered in the LEA situation.

d. The exercise should present situations to the trainee which involve problems reflecting vertical organizational levels as well as lateral and communication problems.

In addition to the preferences identified, two major issues appeared

in discussion of alternatives which operated to influence the final design.

Individual versus Group. As previously noted, emphasis in the self-instructional materials package was given to developing a design allowing the student to move at his own rate through the materials. Emphasis was upon individual as contrasted to group activity. A major question arose as to whether or not the case-simulation should be restricted to an individualized approach. Put another way, should the case be developed so that the student could work by himself without the presence of a live operator or instructor? After giving consideration to the general context in which the proposed training materials would be used, which would largely be that of a structured workshop environment, a decision was made that the case-simulation exercise would be group oriented and take place within some kind of instructor or operator present environment. While operating in a group atmosphere, no attempt would be made to play different group roles but the emphasis would be upon a single role that of project manager. In effect, the group would be establishing a consensus with regard to the product or output of their deliberations. For each dimension or aspect of the case-simulation, the necessary products or output to be produced by the group would be carefully specified. This choice was made under the assumption that project proposal development, implementation, and operation in most actual settings, would take place in a group atmosphere as contrasted to an individual working alone.

Continuous versus Discontinuous Case. A second major question focused upon whether or not the case ought to be continuous or discontinuous in nature. Continuous here means that each succeeding part of the

case would build upon a prior step. Discontinuous means that the individual phases would be considered as separate or disaggregated elements. Arguments for the continuous case involved ideas that it would provide continuity and create motivation to follow-through on a problem. Arguments against this option involved the realization that case situation might not be able to be too specific and hence wind up being general in nature. A continuous case might also present a problem not generally related to student's area of interest and thus create a motivation problem. Arguments for the discontinuous case involved ideas focusing upon the ability to better focus upon problems, easier to focus upon products to be produced, easier to manage the student through the learning process, the ability to establish possible "school solutions," and be more likely to hit heterogeneous interests of the trainees by providing a variety of problems. The argument against this option involved the fact that there w ld be a diminished continuity and the likelihood of there not being any integration provided to the student unless he were able to develop it for himself.

Consistent with the general constraints stated in the agreements, the several considerations and issues identified above, plus the general function of the component, three possible alternative formats for the case-simulation were discussed. In developing the alternatives, the number discussed was reduced to a feasible number by not considering such case techniques as role playing, in-basket situations, and the like. Two reasons exist for this action. The first was the limitation of time available for the project staff to become fully acquainted with each type and its advantages and limitations. The second is that the

staff has already had some experience in developing group simulation exercises plus participating in them. It was deemed desirable to capitalize on this experience in exercise development in view of the time limitations. Future revisions of this total package might give more careful consideration to other techniques. The alternatives presented below would fall in the general category of group simulated management techniques as described by Willings. This category was chosen in view of the earlier decision to go with some group procedure. These alternatives have been identified as (a) proposal development, (b) component analysis, (c) problem analysis.

Proposal Development. One possible format would be for the trainee groups to develop a proposal using the skills acquired in the planning phase and then actually implement it in a given situation so that, implementation, operational control problems, and termination could be practiced. Such an approach would provide the student with the most direct experience in the synthesis and application of skills and knowledge. Past experience with SIMTAR exercise, which is devoted to the planning phase alone, has indicated that satisfactory grasp of the principles involved without the actual creation of a proposal document has required approximately four to five half days of instruction time or a total of 20 hours. Even then, opportunities for implementing to gain experience with control have not been possible. While offering the advantage of being creative, this format also has the negative feature of being exceptionally time-consuming particularly in view of the time constraints for the total package. Utilization of this alternative would also create follow up problems in that each group would create a

different proposal hence there would be difficulty in arriving at a commonality of experience for the other phases of project management.

Component Analysis. Recognizing the limitations imposed by the proposal development alternative, a modified alternative would be to allow the group to create a proposal and its major dimensions but then select a particular component or package and explicate it in more detail. This detail might cover the construction of a work flow, the preparation of resource allocation charts, budget, and indicate how they would gear-up to implement this component. As for the control section, the group could develop a reporting format for that particular component and then indicate how the work effort would be terminated at the end of the project. In addition to the actual creation of a plan by the participants, another approach within this alternative would be to present the students with a completed proposal, have a component identified which they would then explicate in more detail. This would permit the development of an operational control problem by the training materials development staff which the group would then be asked to deal with during that phase. The development of this alternative and its implementation would not appear to violate the time constraints yet meet the desired condition of emphasizing skills and providing for creative opportunities.

Problem Analysis. A third alternative would be to present the students with a series of four separate problems, one dealing with each of the four phases. For example, a proposal might be presented to the group and they would be asked to critique that proposal in terms of accepted principles of planning. For the gear-up phase, another different proposal might be presented and the students asked to develop a gear-up

plan. Similar action would be taken for the control and termination phases. Under this alternative, four different problems would be presented to the group each derived from a different proposal or actual situation. This alternative would provide an opportunity to deal with a wide variety of activities representative of projects in the LEA as well as providing diversity in problem substance. This alternative would require that the proposals be carefully selected with regard to the particular phase with which it is designed to be used. Careful structuring of the problem would permit an exercise that would not violate the time constraint.

2. Case-Simulation Specifications

After discussion by the project staff, a decision was made to employ the format represented by the Problem Analysis alternative. Given this choice, several additional specifications relative to the case-simulation have been set forth. The specifications are listed below with the recognition that additional ones might be incorporated as the actual materials are developed.

a. The case simulation will have two basic parts. One part will contain a description of a hypothetical LEA in order to provide an organizational setting for the problems. The second part will consist of those directions, documents, worksheets, and related items which will work the groups of students through the exercise.

b. The case-simulation will have four distinct problems each identified with a major phase of project management.

c. Each problem or phase exercise will be allocated approximately three to four hours to work out.

d. For each type of exercise, a "school solution" will be developed suggesting how the problem might be developed and handled.

e. An instructors manual devoted to the general intent of the case-simulation along with instructions for use will be developed and included in the package.

f. Proposals and problem situations will be drawn whenever possible from actual LEA situations.

Principles and procedures regarding management simulation exercises as set forth by Willings and Greene and Sisson in Dynamic Management Decision Games* and similar references will be employed in order to assure that the final product represents the most current thinking with regard to how such exercises should be developed. An outline of this component is presented as Figure 5.

*J.R. Greene and R.L. Sisson, Dynamic Management Decision Games. New York: Wiley & Sons, 1959.

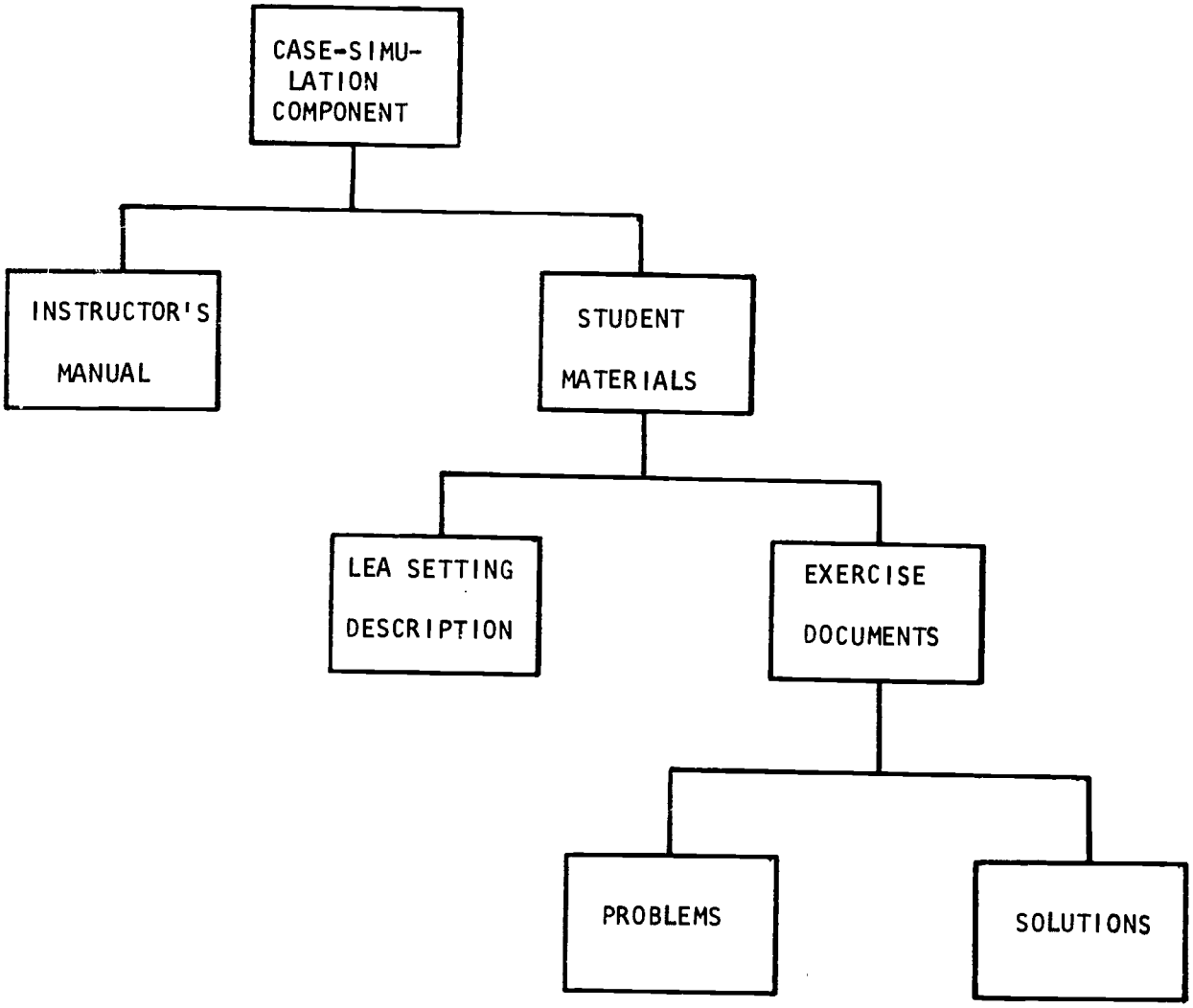


Figure 6. Case-Simulation Component

IV. SAMPLE LESSON: LESSON 1, ORIENTATION PACKAGE

BUILDING CONVICTION

PROJECT MANAGEMENT ORIENTATION COURSE
CONTRACT BY RBS, INC.
PHILADELPHIA

LESSON 1: BUILDING CONVICTION

Introduction to LEA Project Management Capability

The objective of this orientation course is to introduce you to the concept of project management and project management capability. You will learn about the payoff or benefit to the local school when it adopts project management. You will also learn of some limitations for this project management capability. Succeeding lessons of this course will deal with organizational settings, some of the relationships between projects and the functional departments of the school district in carrying out its educational role. A local school can obtain a management capability for dealing with the complexity of federally funded projects and locally funded projects if facilitating organizational pattern and administrative procedures are used. An individually tailored pattern can be designed, adopted and executed. All parties performing contributive functions need to become committed to the successful operation of the new pattern.

Student Activity: Turn on the slide projector and exhibit slides 1 through 7 as indicated by the slide number symbol written into the text.

Project

What is a project?

Slide 1

The concept of a project is defined by certain of its characteristics. Educational projects are those activities in a school setting which:

Slide 2

are goal oriented, that is, the activity is aimed toward some defined goal;

Slide 3

have at the time of planning some uncertainty about the path leading toward the end product;

Slide 4

deliver some definable end product;

Slide 5

have a time schedule that includes a start date and a completion date;

Slide 6

develops the end product within a cost allocation;

Slide 7

and accomplish the goal within a designated performance level. To tighten the concept of project we can contrast it with those activities in a school which are not projects. The established curriculum of a program in a school which continues in operation time after time is not considered a project. A program which does not have a specific completion time and where the costs are not examined against a performance criteria but simply compared to a budgeted amount for operating the program is not a project. Functional activities such as accounting, payroll, cafeteria operation, or the activities of the various teaching departments are not projects.

Student Activity: Turn off slide projector.

A project then, has a specified goal, has uncertainty about how it is to be achieved, will have an end product, has a start date, a completion date, a cost limit and a level of performance for acceptability.

Occasionally, educators ask, "What's so good about a project rationale for viewing our activities?" To answer for the "good" of a project rationale is to answer the question, "Has project management been successful?"

There are many examples in industry or government of projects resulting in successful completion of a complex goal. In such cases, the major contributing factor was the use of project management as a tool. For example, the Polaris Missile Program which placed deterrent missiles aboard submarines of the United States Navy was treated as a special project within the Department of Defense. Admiral Raburn was put in charge of this project which started in 1957. He was given authority to select his staff from any government agency. He was able to cross functional lines of the Federal Government to assemble resources. His planning group established a goal, worked out missions and tasks, developed a time schedule, and planned the activity. They developed a new management tool to manage the total complex activity called PERT, an acronym for Performance Evaluation and Review Technique. This technique subsequently has been adapted to many other disciplines as an excellent management tool. The Polaris Planning Staff continually reviewed the effort, evaluated their progress, and revised the plan. They completed their project in three years instead of six years which was originally allocated.

Another example is the Apollo Project which is a part of the overall NASA Space Program. Sam C. Phillips was put in charge. He assisted in the selection of a staff from among the NASA group and the astronaut team. This

project had as its goal former President Kennedy's objective of putting a man on the moon prior to 1970. This staff planned the various missions, established a time schedule, reviewed, evaluated and modified their plans to accomplish the goal. As we all know this project did succeed in its goal.

Another example is the construction of the world fair sites. Each of these was treated as a project. Specifically these were the 1964 New York World's Fair, the Exposition in Toronto, and Disney's Florida Disney World. The latter is scheduled to open in October 1971. These are examples of activities which are goal oriented, have start and stop dates, programmed costs, schedules, reviews, and management techniques all of which are aimed at the accomplishment of a goal.

A final example is product development in industry. One is Chevrolet's "Vega," a small car entry into the market scheduled for the year 1970. A project manager obtained his staff from the parent company. This project team made plans, established a target date, performance standards, reviewed, evaluated, and they put the product on the market at the target date.

Student Activity: Using an available newspaper or a weekly news magazine, find a project described in a news article as differentiated from a non-project which is without a goal, without a specified stop date and without planned evaluation and performance measures. Consult with a discussion leader or a knowledgeable contemporary on the appropriateness of the article selected.

There are also some good examples of project management in the educational field. Project management here is most often identified with requirements found in federal legislation such as the Elementary and Secondary Education Act of 1965 which became Public Law 89-10. A specific section, Title I (Financial Assistance to Local Education Agencies for the Education

of Children of Low Income Families) specifies a requirement for a plan, periodic evaluation, review and reporting of the activity. There is usually a termination date for the project. Another example is the Northern Virginia Technical College where a grant was provided to assist in developing the steps in planning, constructing, equipping and furnishing the physical plant of the college as well as those intellectual factors relevant to constructing a curriculum, detailing course content, writing a catelog and the securing of a faculty to instruct the first 500 students enrolled. PERT was a planning tool used there. Another example of an education project occurred at the University of Toledo dealing with an educational specification for a comprehensive elementary teacher education program. The work was performed under the sponsorship of the U. S. Department of Health, Education and Welfare. The activity, which included designing educational specifications, was treated precisely as a project, e.g. had a certain goal, developed the specifications in a certain time, and submitted a final report on October 1, 1968. The project was completed within a budgeted cost and at an established level of acceptable performance. A general educational example is the construction of a new building. This activity is a project where one principal or potential principal is assigned as project director and the goal becomes, "the building will be ready for occupancy by a certain date and within certain cost limitations and to a certain standard of acceptance."

Student Activity: Using an educational, professional, or news magazine, find an educational project described therein. Consult with a discussion leader or a contemporary as to the appropriateness of your choice.

Up to this point an attempt has been made to bring you to an awareness level of the definition of an educational project. It is believed that you could now distinguish a project from a non-project in your educational setting.

Management of Projects

The management of a project has additional characteristics and techniques available to those described for a project itself. These characteristics are:

1) Projects have project directors, sometimes called managers, whose job begins in the project planning and ceases with project termination whereas activities which are non-projects have program coordinators, also called supervisors, administrators, or directors whose job exists in spite of the status of particular programs.

Student Activity: Turn on the slide projector and exhibit the slides as indicated

Slide 8

2) The role of a project director involves duties or actions such as:

Slide 9

Planner and integrator of the activity,

Slide 10

The evaluator of the process,

Slide 11

The decision maker of the process,

Slide 12

And the implementor of decisions.

Slide 13

3) The project management missions can be grouped into four phases of operation.

Slide 14

a. The planning phase includes the definition of the project, the detailed planning for work or tasks, determining schedules, cost of materials and manpower.

Slide 15

b. The implementation phase is when the equipment, personnel, and materials are acquired so that the project can begin.

Slide 16

c. The operational control phase consists of those activities and efforts which are aimed at the accomplishment of the project goal; and,

Slide 17

d. Termination includes those activities or efforts dealing with ending of the project subsequent to completion of the goal.

Slide 18

4) There are various project management techniques which are:

Slide 19

a. Time scheduling;

b. Fund allocating;

Slide 20

c. Resource allocating;

d. Planning specific work and scheduling actions;

Slide 21

e. Responsibility delineations;

f. Evaluation and review;

Slide 22

g. Directing others;

h. Controlling.

Student Activity: Turn off slide projector. At this point the attendees are to be given a list of descriptive activities which occur in a school setting. The instructions are, "You are to select those which are projects and those which are non-projects." List A follows:

LIST A

1. The elementary mathematics program as identified by the K through 6 printed workbook material and textbooks.
2. A committee action directed to make a detailed investigation of the need for an electronic computer data processing system forthe school with the recommendation to be reported by July 1.
3. The staff effort focused on planning, making arrangements for, and conducting the second semester adult education program where plans are to be approved by the Superintendent on or before December 1.
4. A committee to investigate and report by September 1, selection of a textbook for the 9th grade science program.
5. The staff activity involved in accounting for expenses within the various appropriation categories.
6. A group composed of administrative staff and citizens of the Advisory Committee who are to develop a program and to conduct voter-orientation meetings for the purpose of getting an approval for a bond or operating levy at the May primary election.
7. The group of coaches successfully conducting the inner-scholastic athletics for the school.
8. The administrative staff assigned responsibility to develop procurement policies and selection criteria for acquisition of buses, these policies to be reported prior to a specific date.
9. The foreign language education program operated by the language teacher at the high school.

Some activities exist in an LEA which are on-going and could be re-oriented as projects. Some of these are: curriculum selection committee, school construction program, the development and initial operation of a gymnastics team or dramatics club. Thus, it is possible to re-orient many school activities as projects. However, there are a few questions that are asked. Why change regular activity into project activity? What benefit would occur to the LEA for this re-orientation? The answers to these questions should be adequately covered in the next few paragraphs.

There are a number of important advantages for using project management as a total or near total activity in an LEA. First, thinking of an activity as a project forces the LEA to ask, "What do I want to obtain? How do I want to get it? What are the possible methods of performance? What is not to be included? What are the milestones?" and finally, "What is to be delivered?" When the LEA focuses upon the answers to these questions they are examining in detail the elements of a program in terms of its goal rather than permitting the perpetuation of activities that may have ceased to meet a need. In this manner the LEA total efforts are focused: (a) on the goal; (b) on plans which detail the time sequence for various activities; (c) on the plans for allocating resources; (d) on specific performance; and (e) on an orderly, timely control of the effort by comparing it with the planned effort. When the total school operation is committed to such an organized focused effort there is likely to be a higher probability of accomplishment of the activity and also a knowledge of the costs for the activity. The accomplishment of planned goals, with cost knowledge, could improve the ability to perform a public relations

function to the community on the school operation. A disadvantage to project style management is the requirement for top level management to delegate authority and decision making to a greater number of subordinates even though the superintendent retains overall responsibility and accountability.

There are some limitations connected with the installation of project management in the LEA. For one, project management cannot be applied to all activities of the LEA because some activities are extremely difficult to identify with a goal, a start and stop time, and an end product. As a consequence both a functional and a project management system would be required which is somewhat more complex than either management type singly. Secondly, it is difficult to obtain well qualified project managers for each project exactly when needed. Thirdly, the success of projects within an LEA is related to the ability of the many managers.

In summary, project management can be used widely within the LEA to direct many activities of the LEA toward an overall goal. Project management could spotlight resource needs for the support of each segment of the LEA. This could also strengthen the evaluation of segments of the LEA in terms of performance. Extensive use of project management would allow for an examination of the deviation of the operations as compared to the plans. It could also pin-point problem areas of those specific segments which are reducing the overall achievement of the educational goal. The gain derived from the management of each project in an LEA could be substantial in terms of clear goal statements, better resource allocation, a significant level of evaluation, timely corrective action for problems and actual observable achievement.

Student Activity: The attendee can select from a given list the LEA activities which would be applicable to project management and would give a possible LEA gain if they were treated as projects. For each project selected tell why it was selected.

Student Activity: Turn on the slide projector and exhibit the slides as indicated

Public Relations Benefit of Project Management

Slide 23

The public education system as exemplified by our respective schools has been under increasingly severe attack.

Slide 24

Our schools have not been very successful in informing the public on the nature of our educational goals. The goals often come out rather fuzzy and ill defined. We end up putting out a community report which tells how many students are enrolled, how many employees we have, how much money we spend per student, how many new classrooms we have built, etc. But these are all input measures. Our schools should not have as a goal occupying students, employing persons, spending money or building classrooms. If we use project management to a rather advanced degree we can focus a little better on goals, we can relate costs to the achievement of those goals and we can use the project reports to substantiate our efforts.

Slide 25

This possibility is realized when the total LEA effort is separated into

the appropriate segments and treated as projects where the cost of each segment is capable of being analyzed. (Each segment has its own specified goal, has a start and stop time, is allocated certain resources, and is periodically reviewed to determine the performance related to the goal.)

Slide 5-G in Expected from Project Management Capability

If this activity is summed across all appropriate segments of the LEA the implication is that the total school system operation is directed in a desired fashion toward an overall goal(s).

Slide 26

The activities which are considered projects (and thus produce end products) would assist in the public relations function with the community because concrete accomplishments would be identified.

Slide 27

A capability of this type would allow for those segments which can be considered projects to have cost effectiveness evaluations. If the capability at a given level of use in a school system proves successful, the school system can use those experienced project managers subsequently to direct more activities or segments of the LEA toward project management.

As a summary, the project management capability for local school offers distinct advantages in focusing the various activities upon (1) clear goal statements, (2) detailed plans concerned with time, resources and performance, and (3) orderly review and control of the effort in comparison to the plan.

FORM A

1. List by number those activities described in LIST A which appear to be appropriate to project management (not all spaces need to be used).

_____ _____

_____ _____

_____ _____

2. List those concepts (elements) of the activities selected as projects which you used in discriminating projects from non-projects, (not all spaces need to be used).

_____ _____

_____ _____

_____ _____

3. List the necessary elements missing from those activities given which you considered as non-projects. (Identify by number a non-project and then proceed; not all lines need to be used).

_____ _____

_____ _____

_____ _____

_____ _____

4. Select one of the projects from LIST A and then state the duties or actions of the person or persons serving the role of project director of that activity (not all spaces need to be used).

_____ _____

_____ _____

_____ _____

Note: Slide A indicates the generally expected response for questions 1, 2, & 3.

LIST B

1. The design and operational procedures for an adult education program for the next school year.
2. The investigation into, including results of a teacher survey, and a design and implementation of a grade card procedure for the next school year.
3. The inner-scholastic athletic program in operation for the next school year.
4. Administrative procedures and plan for the procurement of office and custodial supplies of the next school year.
5. The determination of available job positions, the design plan and operation of teacher recruitment for the next school year.
6. The conceptualization of a plan, writing of a proposal, and submitting it to a funding agency for a teaching innovation in the school for the next school year.
7. The planning, obtaining necessary resources, and actual operation of a team teaching situation in the 7th grade as a pilot project for the next school year.

FORM B

1. List by number those activities described in LIST B which appear to be appropriate to project management (not all spaces need to be used).

_____ _____ _____

_____ _____ _____

_____ _____ _____

2. Write a projected gain to an LEA for each activity selected as a project. (Identify each by number.)

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

_____ _____

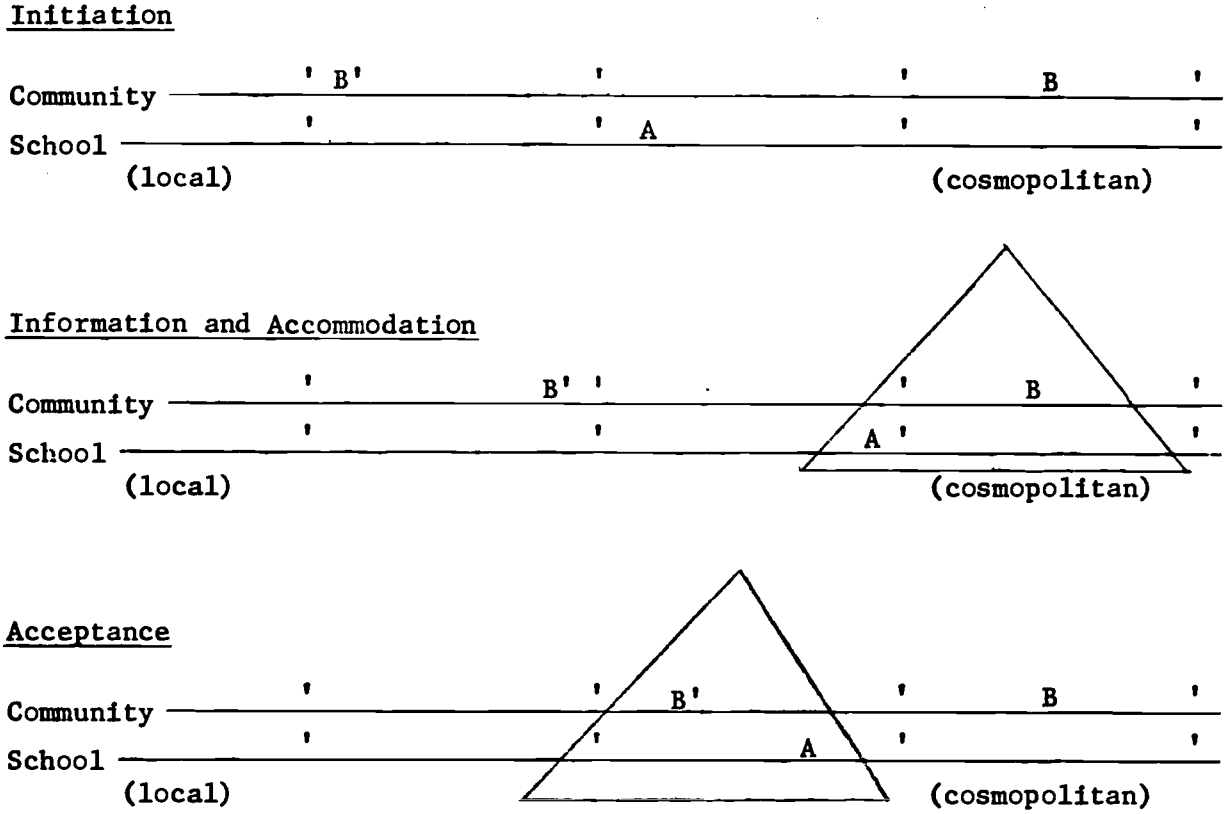
_____ _____

Note: Slide B indicates the generally expected response for question 1.

Figure 10

Dominated School-Community

Zone of Tolerance



KEY

A=Staff and Principal
B=District Level Change Planners
B'=Mass of Public Opinion

Conceptual Framework Revisited

Each of the three conceptual frameworks--community typology, policy process, and zone of tolerance--will be discussed and reanalyzed in the light of the four exploratory case studies presented in this research. Future research directions, both exploratory and verificational, will be indicated. Recommendations to practitioners will follow in an attempt to capsulize the research findings on a practical level.

Community Typology at the School Attendance Level

The McCarty/Ramsey working hypotheses which guided the early selection of schools proved useful in providing sample variance. Data was found in three of the four community types, (Dominated School-Community the exception) to support the Inert-Factional-Pluralistic-Dominated Model.

Evidence can be found in the community power and educational research literature to support different elements of this type of model. However, its uniqueness rests in its application at the school attendance level. Summerfield's[16] four elementary school attendance area case studies each had a different political style, but he used interest group theory to explain the resource allocation patterns which came from the central office. The building principal also for Summerfield was an important part of the analysis. The analysis of consensual elites seems to support some of Summerfield's group theory results; that is, groups form on the basis of needs and issues, but will vary in different socioeconomic settings. Certain adaptations need to occur in bringing the model down to the building level, but overall, it appears a useful one in interpreting interaction in the home-school-community environment given the assumptions of the autonomy of the building principal and the critical role of access to information and policy direction.

Future Research on Community Typology

Exploratory research is needed to investigate the effects of population transiency on school-community participation. Transiency would seem to be a critical variable in predicting community type. Exploratory research is also needed on the intervening variables surrounding the level of issue resolution. Is the level of issue resolution a function of the control over information? What part does the element of trust in the professionals play? And what are the determinants of trust? Verificational research would seem to be possible to take the working hypotheses of this study and broaden their scope and interpretation into some definitive schemes of community typology at the neighborhood or building level.

Policy Process

The efficacy of the four-phased scheme from the case studies seems to indicate that the policy scheme is helpful in understanding the phases of implantation to acceptance if one recognizes the non-linearity of the model. In other words, it would be logical to expect that legitimacy would come after accommodation, but in two of the cases, legitimacy actually preceded accommodation. What appears evident from the 150-180 interviews in the four school-communities, however is that there are discernible patterns of acceptance, rather than legitimation. Acceptance would probably connote more of a general awareness and at least acquiescence rather than the formalistic legitimation.

Two points will be made in a discussion about the role of key actors with advantages, skills, and knowledge in the policy process. First, the successful schools (schools without conflict as a result of the implementation of the program) stressed what the innovation was doing for the individual child rather than to attempt to educate the parents of the "glories" and ramifications of the IGE system. Second, information and access to it was the key variable in each of the four cases, though, there may be some indications that deep-seated values may be an important variable as well.

Concerning the observation that the child served as the focal point of successful implementation rather than the program per se, it is important to stress the manner in which diagnostic curriculum and continuous progress became translated in terms of doing what was best for the child. In effect, educators were able to say to parents, "We're going to take your child from where he/she is and allow your child to progress as far and as fast as he/she can." This tactic worked in Inert Community, Dominated Community, and Pluralist Community, but was not followed with strict adherence in Factional Community. There, the program was stressed in an abstract sense and only later did the school zero in on the benefits which would accrue to the individual child.

The key actors in each of the four cases tended to be positional in nature. This provides some additional data for the hypotheses Goldhammer[17] had posited some ten years ago. Initiation of change was managed in each case through the central office with key school-community support.[18] Nevertheless, the role of the principal was critical for success.

In terms of the use of information and the role of key actors in a political sesne, one realizes that the translation of the program to the

parents came under the critical guidance of the principal. Sarason[19] has aptly described, and Wolcott[20] reinforced, the autonomous role of the principal in terms of what goes on at the building level. In each of the four cases, it was skillful management of information, programs, activities, and resources by the principal which facilitated the successful translation of the shcool program to the parents. It seems very clear from this research that the principal made the successful innovation go in the eyes of the parents. A school may have had an excellent staff, but if the principal is not able to manage the program and present it to the parents in an interesting and meaningful way, it will not be judged a success.

Future Research on Policy Process

The time appears ripe for some "harder" verificational types of research involving attitudinal pre- and post-testing, issue nomination, participant observation to determine what the discriminating factors are in the access to and use of information. What makes one set of educators in one community select the correct language and others fail? Unsuccessful schools should be studied and the principal's roles documented to contrast their problems with other successful schools.

What triggers the need for innovation in parental opinions? Research should build on the social systems framework used in the Williams et al.[21] to link information, values patterns and leadership style into some verificational findings on the interrelationships of the three variables.

It seems important to acknowledge the significant roles which individual parents and board members played in helping translate and guide the implementation of the innovation among the parents. Educational researchers have documented from Robertsdale[22] and Springdale,[23] just to

acknowledge the best known, that interested and knowledgeable parents and non-educator individuals can serve as opinion leaders in the community.

What the data seems to suggest is that successful management of information occurs through a consensual elite. In the four cases examined here, the consensual elite was primarily made up of professional educators and selected change-oriented parents to form a core of opinion leaders in each school-community. The consensual elites were the early believers in the innovation effort, believers that the innovation meant a better education for their child.

Zone of Tolerance

It would be useful to analyze the zone of tolerance definition again in that the "amount of leadership given or yielded to school officials" indicates a direction of information flow as a given of the analysis.

What has not come out in analysis of zone of tolerance to date, however, is the difference in zones discussed using the literature in Moynihan and McGivney's Teachers College Record piece. Not only is it logical to expect that zones may be different for different types of community, but it now can be documented with case study research on the type of community variance which is suggested in the literature and the McCarty/ Ramsey community variance framework.

Something which is not expected in the zone of tolerance is the key role which school parent influentials seem to play in each of the four cases in this research. In each case, including even the Dominated School-Community and Moribund School, the principal and unit leaders instinctively worked with parents who had similar values and attitudes towards the innovation. Surely a self-selection process occurred on the part of the parents. However, it might be useful to look at the public opinion in general

as a bipolar continuum, with one end of the continuum being the die-hard "school as I knew it" type of individuals and the other end of the continuum being the change-oriented parents. Designation of those opinion leaders coupled to the slogan systems which would work best in that setting might be the type of school-community relations needed to successfully present the implementation from the parents' point of view. The suggestion clearly is that a few key individuals would either serve to criticize the program if either (a) they were among the designated opinion leaders, or (b) they didn't agree with the thrust of the innovation. However, once those key opinion leaders had been designated and could serve as lightning rods out in the community, they seemed to be able to move the general mass of opinion over to acceptance.

Katz and Lazarsfeld[24] pioneered the ideas of opinion leaders, and research has filtered through doctoral dissertations in the past ten years to substantiate their findings.[25] What is needed, moreover, is more hard case study data on the exact intervening variables between the school's intuitive or positional selection of these opinion leaders and the opinion leaders. This type of conceptual research could prove of wide benefit for practicing school administrators.

Future Research on the Zone of Tolerance

Two adaptations were made to the zone of tolerance concept. The continua from local to cosmopolitan was divided into four quadrants using the ' configuration. Three different zones of tolerance were presented by recasting the acceptance of the innovation into the policy process phases: initiation, information and accommodation, and acceptance. These changes imply some attitudinal survey instrumentation in future research

attempts on the zone of tolerance.

Analysis should be made of those schools who have either dropped out of IGE or another similar innovation to learn from their failures. What aspects were missing from their implementation histories which the successful schools seemed to have? The problems in gathering data rich enough to supply hard answers to soft questions might lend itself more to participant observation than factum open-ended interviewing types of studies.

Recommendations to the Practitioners

Above all else, these concepts seem to be coming through the seven case studies completed to date (four selected for this study). (1) A successful home-school-community relations program focuses on the child. It is a wrong tactic to take to attempt to explain the benefits and philosophy of a particular program if the child is not made the heart of that analysis. Don't tell parents about the program in the abstract, tell them how it's going to effect their child. (2) Spend the great deal of your inservice time and preschool attention to having a smooth running program. Administrators might consider and build in some student inservice to help them understand the new system, particularly if, on the elementary school level, it involves more student movement than they are normally accustomed to. Children are the greatest ambassadors of their school, and if they come home confused or unhappy, it will not take very long for it to filter back to the school through parents. (3) School officials should identify and involve key school-community influentials early in the innovation history. They should gain skills of building a reputational type of grid so that they can identify and win over the opinion leaders in the school-community environment. (4) Finally, when the educators think they might

have the major problems of the implementation process solved, they should plan a major survey effort to obtain hard based feedback on the program and a documented finding of acceptance or rejection.

Summary

Exploratory case study research should be undertaken when previous research shows a lack of conceptual sets ready to verify in a larger setting. Home-school-community relations literature is certainly lacking, at this point, a set of researchable hypotheses. However, out of research of this type, one can see trends emerging which may build on the concepts discussed in this paper.

The wrong variables may have been isolated for analysis. Memories may have proven poor in the nature of post factum research. Selection of schools could have been better, somehow, to reduce any type of Hawthorne effect or halo effect. However, at least an attempt was made to begin a research dialogue on the critical aspects of home-school-community relations.

FOOTNOTES

1. see Neal Gross, Joseph B. Giacquinta, and Marilyn Bernstein, IMPLEMENTING ORGANIZATIONAL INNOVATIONS (New York: Basic Books, 1971) and Seymour B. Sarason The Culture of School and the Problem of Change (New York: Allyn & Bacon, Inc., 1968).

2. Theodore J. Jenson and Frederick Staub "School-Community Relations" Review of Educational Research, 31, October 1961, pp. 406-413. A related work which might help students enter the literature would be Don Davies CITIZEN PARTICIPATION IN EDUCATION ANNOTATED BIBLIOGRAPHY, (New Haven, Conn: Institute for Responsive Education, 1973).

3. The review will be contained in a technical report forthcoming from the Wisconsin Research and Development Center for Cognitive Learning, 1025 W. Johnson Street, Madison, Wis. In addition, the Center will publish an extensive review of the Home-School-Community Relations literature this year as well as a book of case readings on the implementation of IGE and Home-School-Community Relations programs and activities.

4. Harry L. Summerfield, The Neighborhood-Based Politics of Education, (Columbus, Ohio: Charles E. Merrill Pub. Co., 1971).

5. Marvin J. Fruth, B. Dean Bowles, and Richard H. Moser, Home-School-Community Relations for IGE (Wisconsin Research and Development Center, 1974), p. 4. (mimeographed).

6. David Easton, A FRAMEWORK FOR POLITICAL ANALYSIS (Englewood Cliffs, N.J: Prentice-Hall, Inc., 1965) pp. 111-113 and Frederick M. Wirt and Michael W. Kirst, THE POLITICAL WEB OF AMERICAN SCHOOLS (Boston, Mass: Little, Brown, and Co., 1972) p. 13 and Jay D. Scribner, "A Functional-Systems Framework for Analyzing School Board Action," EDUCATIONAL ADMINISTRATION QUARTERLY 2 (Autumn, 1966) pp 214-215 and William J. Moynihan, MILTON SCHOOL SYSTEM: A STUDY IN THE POLITICS OF EDUCATION (Unpublished Ph.D. Dissertation, Syracuse University, 1973) p. 65.

7. R. M. Cyert and J. G. March, A Behavioral Theory of Firm (Englewood Cliffs, New Jersey: Prentice Hall, Inc., 1963) and Michael Crozier, The Bureaucratic Phenomenon (Chicago: University of Chicago Press, 1964), Chapters 6-8; also see Graham Allison "Conceptual Models and the Cuban Missile Crisis." American Political Science Review, Sept., 1969, Vol. LXIII #3, pp. 689-718; and John Child "Organizational Structure, Environment, and Performance: The Role of Strategic Choice," Sociology 1972, V. 6, pp. 1-23; and Alfred G. Chandler, Strategy and Structure, Cambridge, Mass: MIT Press, 1976; also Chris Argyris "Some Limits of Rational Man Organizational Theory," Public Administration Review, 33, 1973, pp. 253-267.

8. Robert A. Dahl, WHO GOVERNS (New Haven, Conn., Yale U. Press, 1961).

9. Don J. McCarty and Charles E. Ramsey, THE SCHOOL MANAGERS (Westport, Conn.: Greenwood Publishing Corporation, 1971)

10. For other community typologies, see Peter H. Rossi, "Power and Community Structure", Midwest Journal of Political Science, IV, Nov. 1960, pp. 390-401 and Fred D. Carver and Donald O. Crowe, "An Inter-Disciplinary Framework for the Study of Community Power", Educational Administration Quarterly, V. 5, Winter 1969, #1, pp. 50-65.

    Three excellent community power readers appeared in the late 1960's and are recommended. Terry N. Clark, ed. Community Structure and Decision-Making Comparative Analyses; (San Francisco: Chandler Publ Co.,1968 Michael Aiken and Paul E. Mott, editors, The Structure of Community Power, N.Y.: Random House) and Alan Rosenthal, ed. Governing Education.

11. See Gerald Zaltman, Robert Duncan, and Jonny Holbeck INNOVATIONS AND ORGANIZATIONS (N.Y.: John Wiley & Sons, 1973). For examples in educational research see Richard O. Carlson, ADOPTION OF EDUCATIONAL INNOVATIONS (Eugene, Oregon: CASEA Publications, 1965) also Richard O. Carlson CHANGE PROCESSES IN THE PUBLIC SCHOOL (Eugene, Oregon: CASEA Publications, 1965) and W.W. Charters et al THE PROCESS OF PLANNED CHANGE IN THE SCHOOL'S INSTRUCTIONAL PROGRAM (Eugene, Oregon: CASEA Monograph #25, 1973. An exception to this intra-organization focus could be found in Robert F. Agger and Marshall N. Goldstein, WHO WILL RULE THE SCHOOLS: A CULTURAL CLASS CRISIS (Belmont, Calif., Wadsworth Pub. Co., 1971) where they used two large districts as the units of analysis.

12. Joseph McGivney and William Moynihan, "School and Community," TEACHERS COLLEGE RECORD 74, 2 (December, 1972), p. 221.

13. Arthur J. Vidich and Joseph Bensman SMALL TOWN IN MASS SOCIETY (Princeton, N.J.: Princeton University Press, 1968 Edition).

14. Laurence Iannaconne and Frank W. Lutz, POLITICS, POWER AND POLICY: THE GOVERNING OF LOCAL SCHOOL DISTRICTS (Columbus, Ohio: Charles E. Merrill Pub. Co., 1970)

15. Laurence Iannaconne, "The Field Study in Educational Policy Research", Address prepared for the U. of Wisconsin-Madison Conference "Policy Research: Methods and Implications," May 2, 1974. (mimeographed)

16. Harry L. Summerfield, THE NEIGHBORHOOD BASED POLITICS OF EDUCATION.

17. Keith Goldhammer, "Issues and Strategies in the Public Acceptance of Change" an address presented to the "Conference on Educational Issues in a Changing World", Nov. 18, 1965, Maui, Hawaii, ERIC ED 010 224.

18. This coinsides with Lacy's findings in Indiana. See Dennis Gale Lacy "Methods of Introducing Individually Guided Education (IGE) Programs in Selected School Systems in Indiana," unpublished Ed.D. dissertation at Indiana U., 1972.

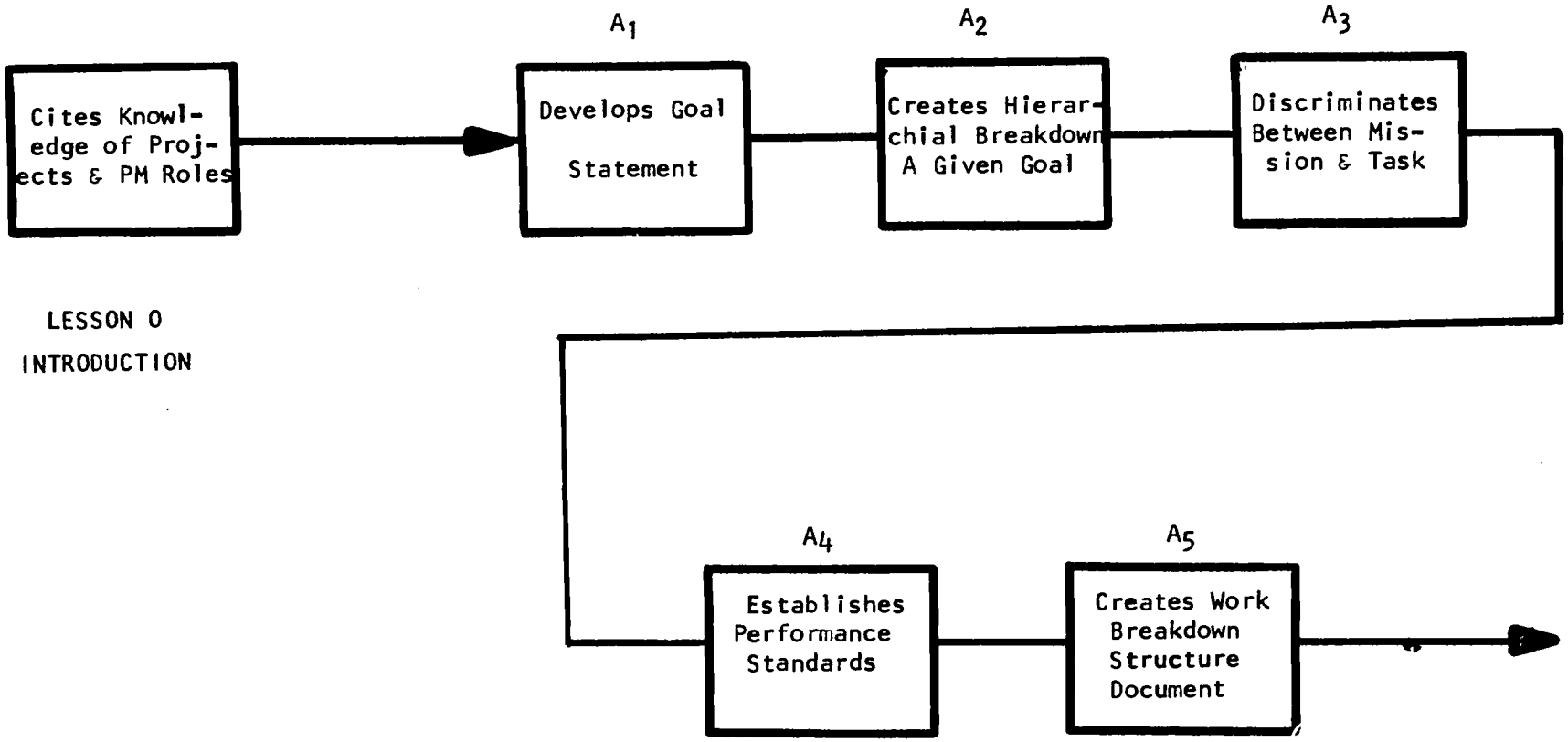
19. Iannaconne and Lutz, POWER, POLITICS AND POLICY: The GOVERNING OF LOCAL SCHOOL DISTRICTS.

20. Vidich and Bensman, SMALL TOWN IN MASS SOCIETY.

21. Richard C. Williams, Charles C. Wall, with Michael Martin and Arthur Berchin, EFFECTING ORGANIZATIONAL RENEWAL IN OUR SCHOOLS, N.Y.: McGraw-Hill Book Co., 1974.

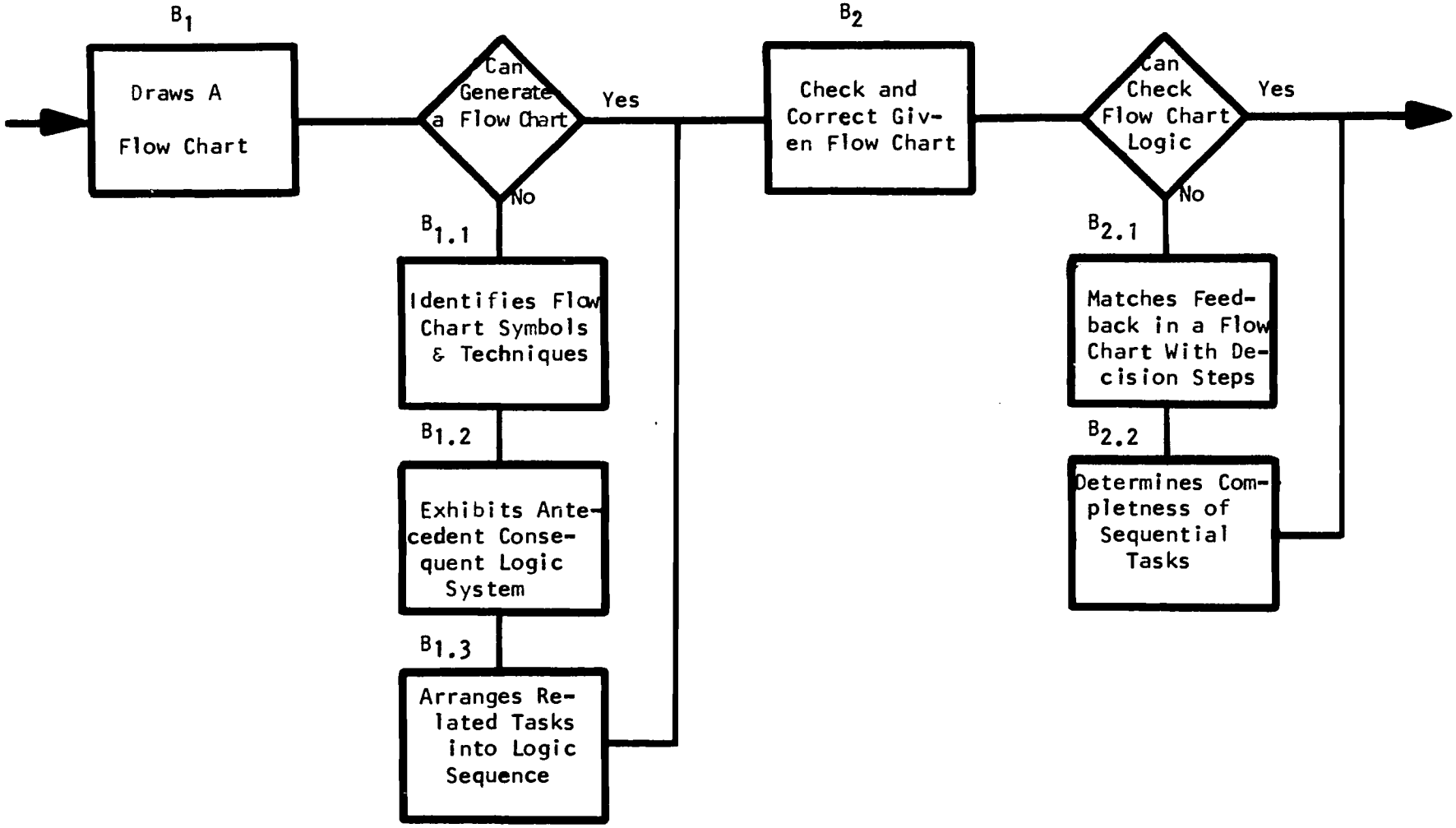
22. Elihu Katz and Paul F. Lazarsfeld, PERSONAL INFLUENCE (N.Y.: The Free Press, 1965).

23. See Bernard Masse "A Comparison of the Relationship of Influentials to Schools in High and Low Financial Support Communities" DAI 26/01/171, and Paul Cameron Holman 'Community School Leaders Functioning as Personal Influence Leaders" DAI 26/08/4416, and also Raymond Steinert "Community Power Structure in Relation to Implementation of Controversial Issue Programs in Nebraska Elementary Schools", unpublished EdD. dissertation at U. of Nebraska, 1971.



Page 1 of Figure 5

Figure 5. Behavioral Objectives Sequence Flow Chart for Project Managers Training Package

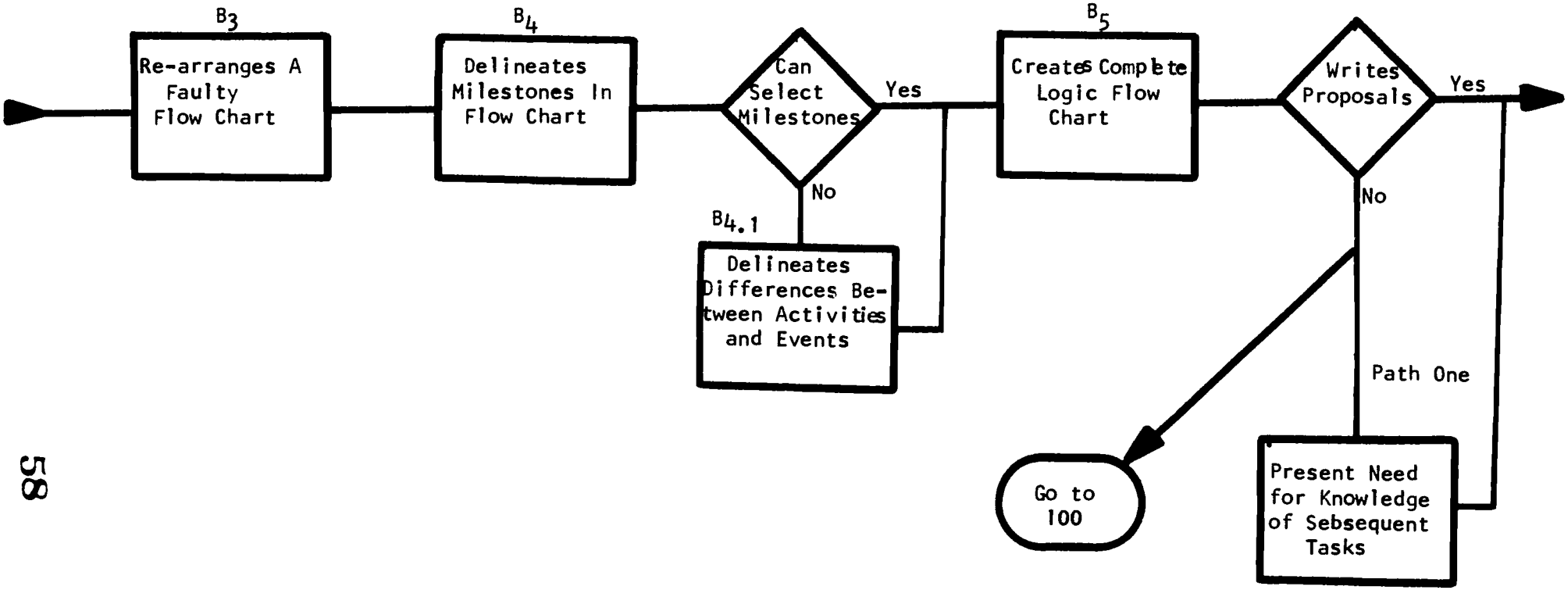


LESSON 2

$B_1 - B_5$

WORK FLOW

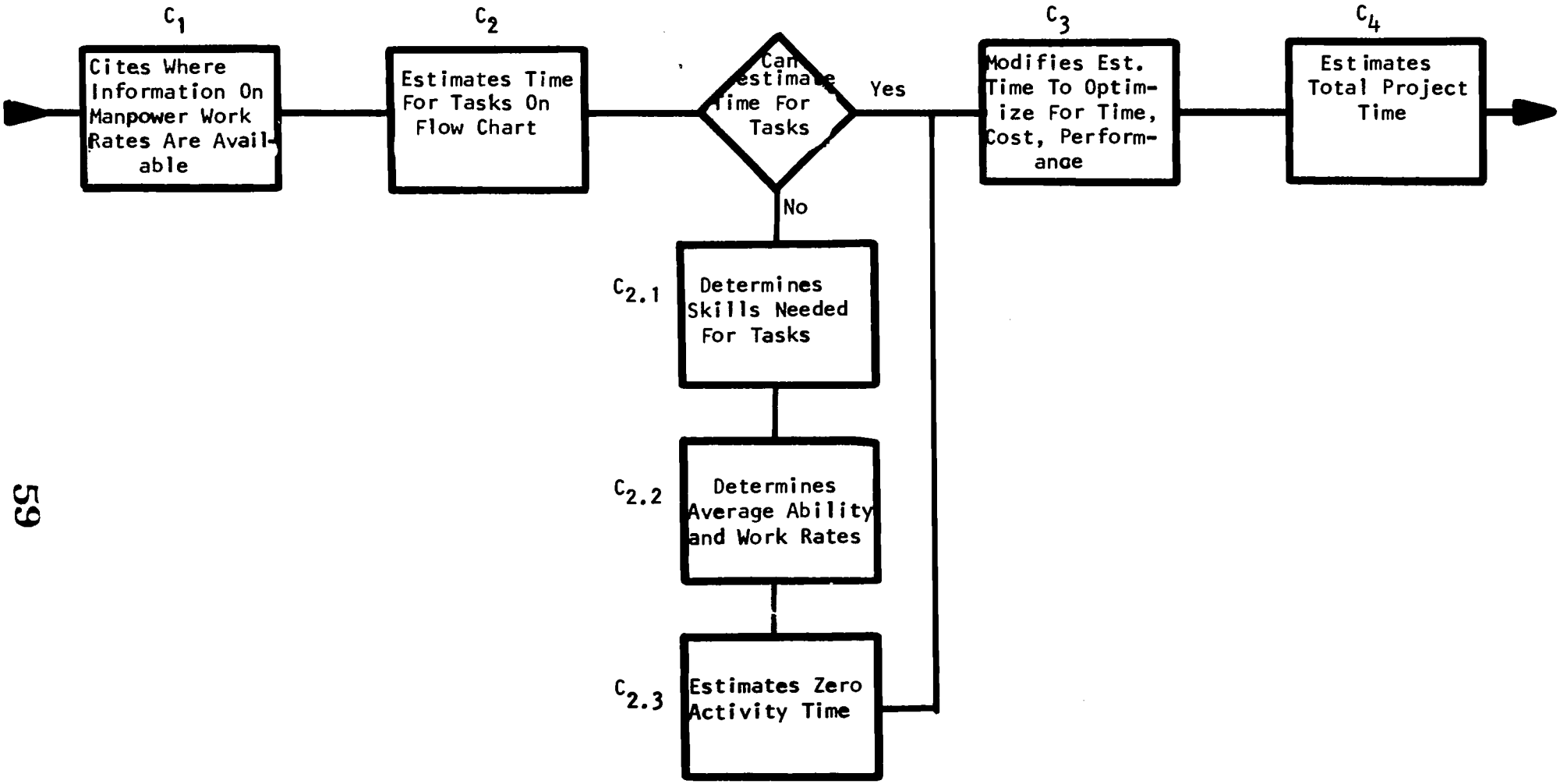
Page 2 of Figure 5



LESSON 2 (con't)

$B_1 - B_5$

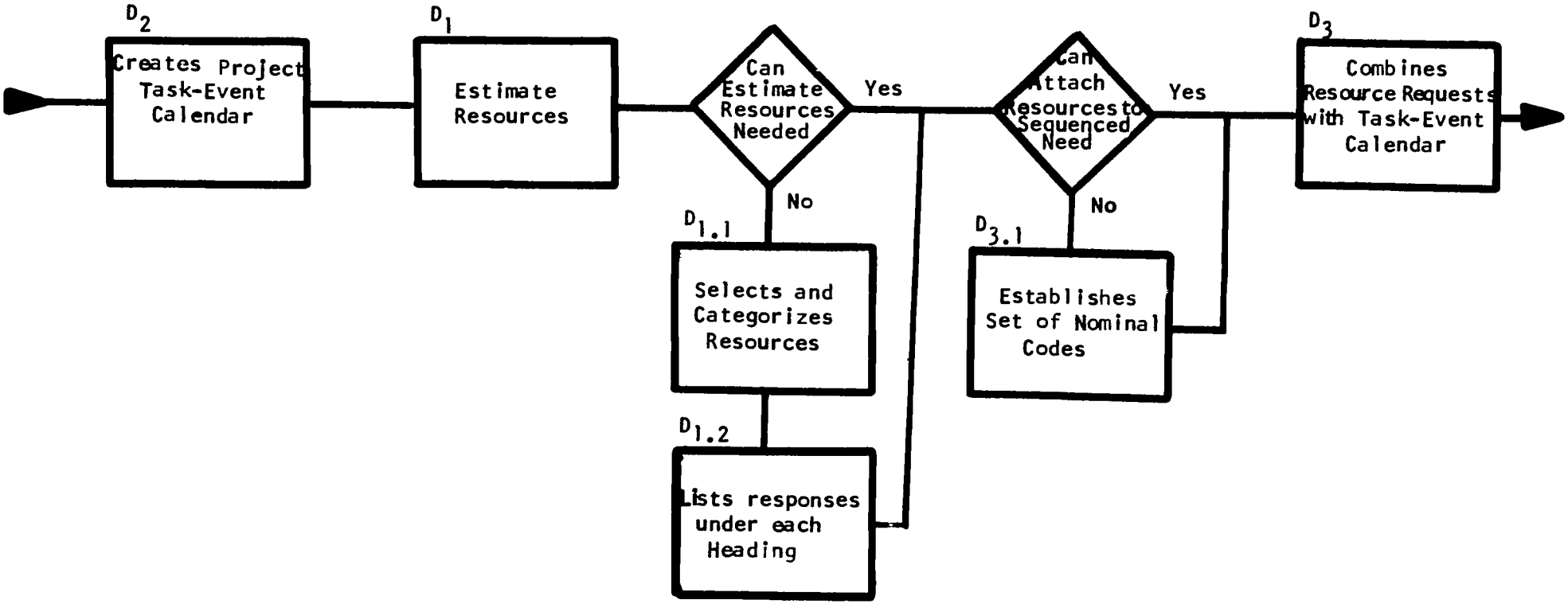
Page 3 of Figure 5



LESSON 3 TIME ESTIMATING

$C_1 - C_4$

Page 4 of Figure 5

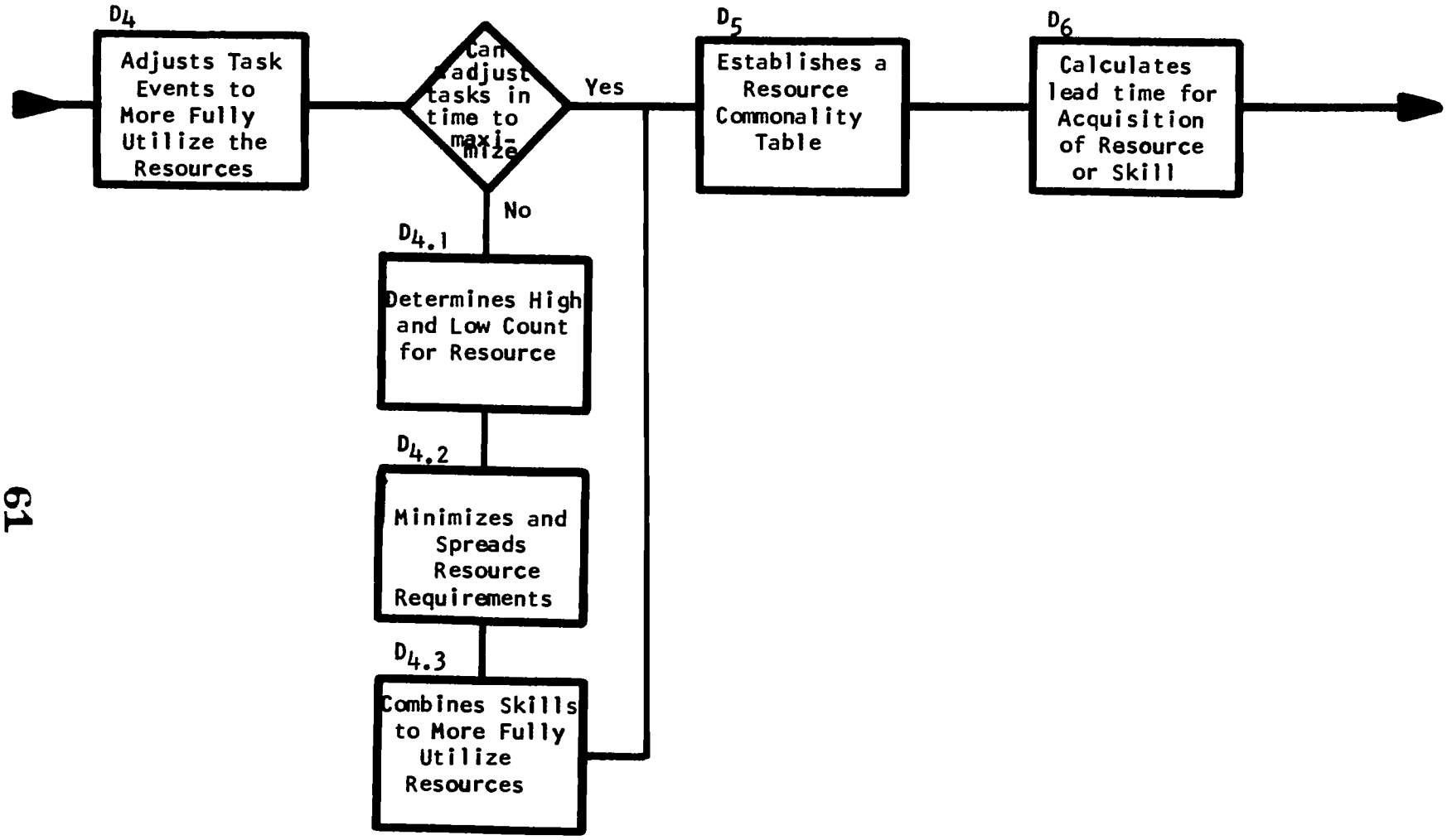


LESSON 4 (cont'd.)

D_1-D_6

RESOURCE ESTIMATION

Page 5 of Figure 5

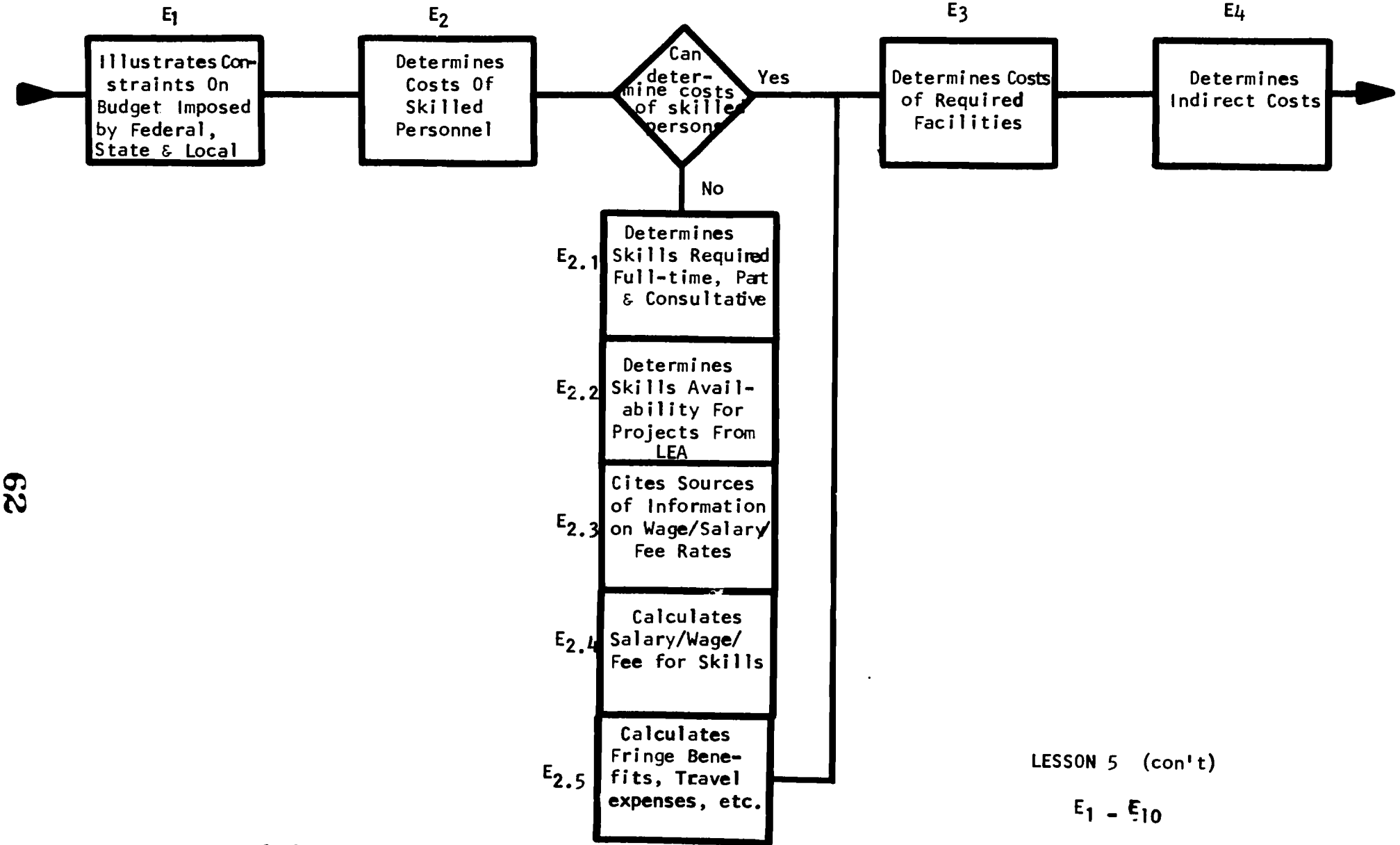


LESSON 4

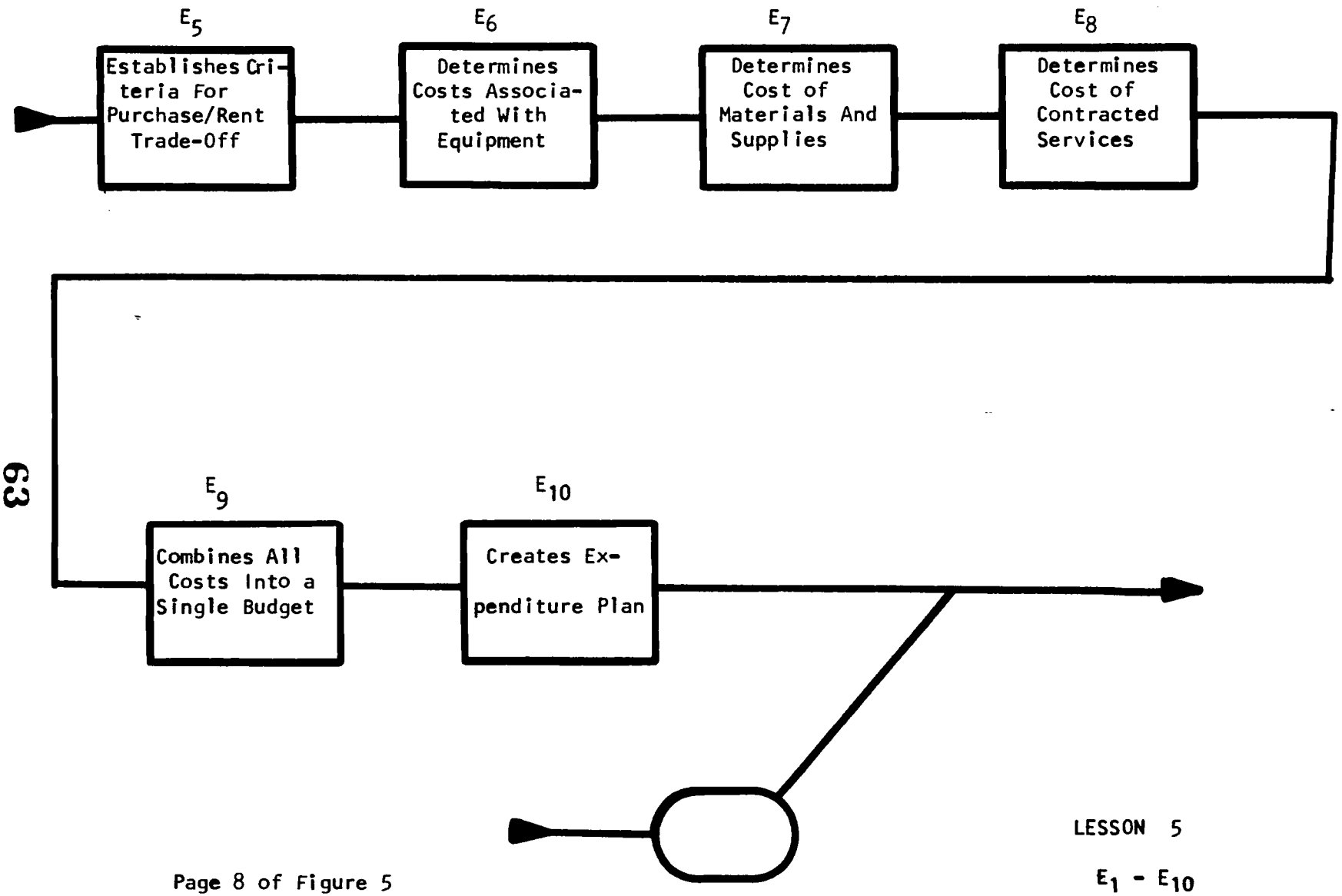
D_1-D_6

Page 6 of Figure 5

RESOURCE ESTIMATION



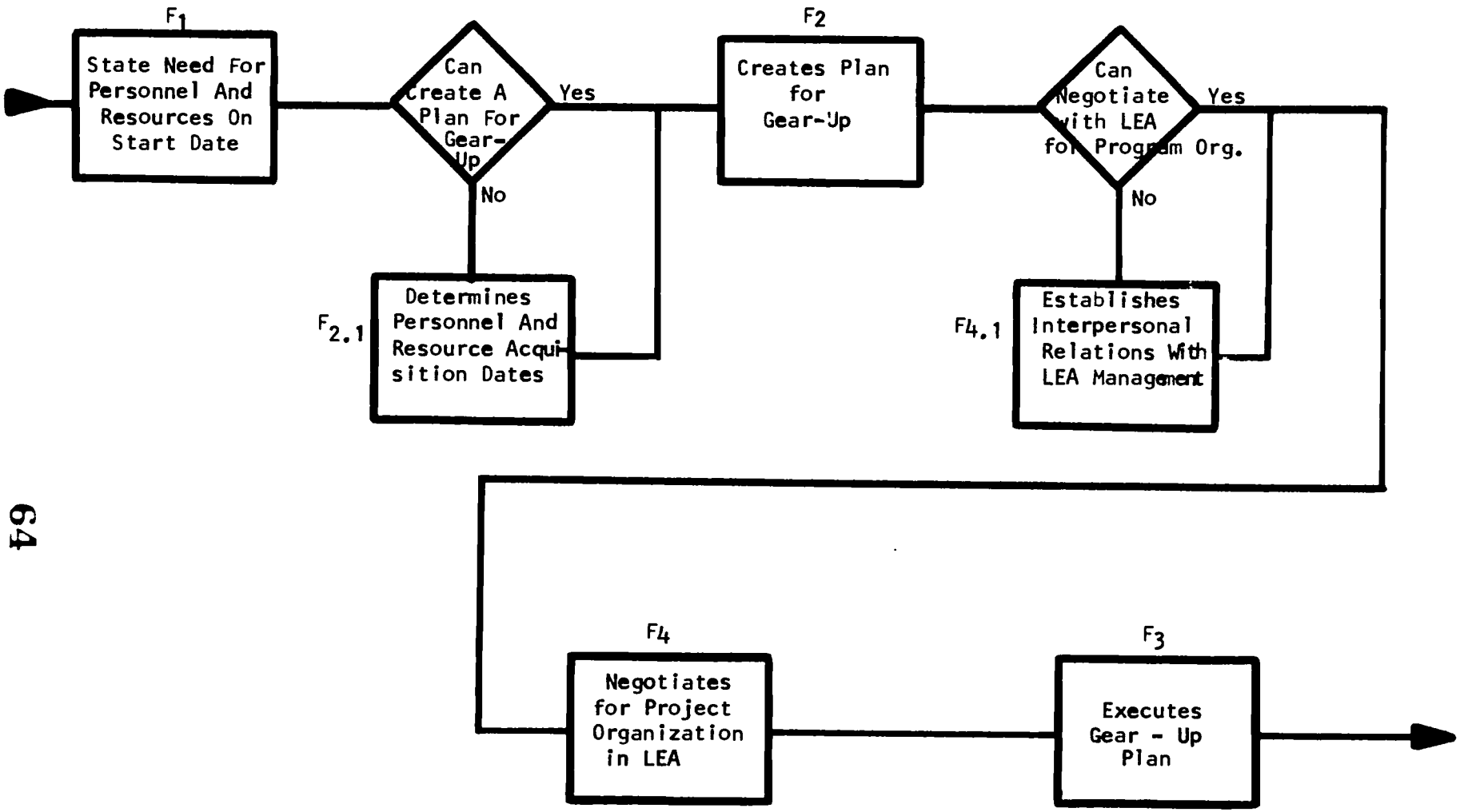
Page 7 of Figure 5



Page 8 of Figure 5

LESSON 5

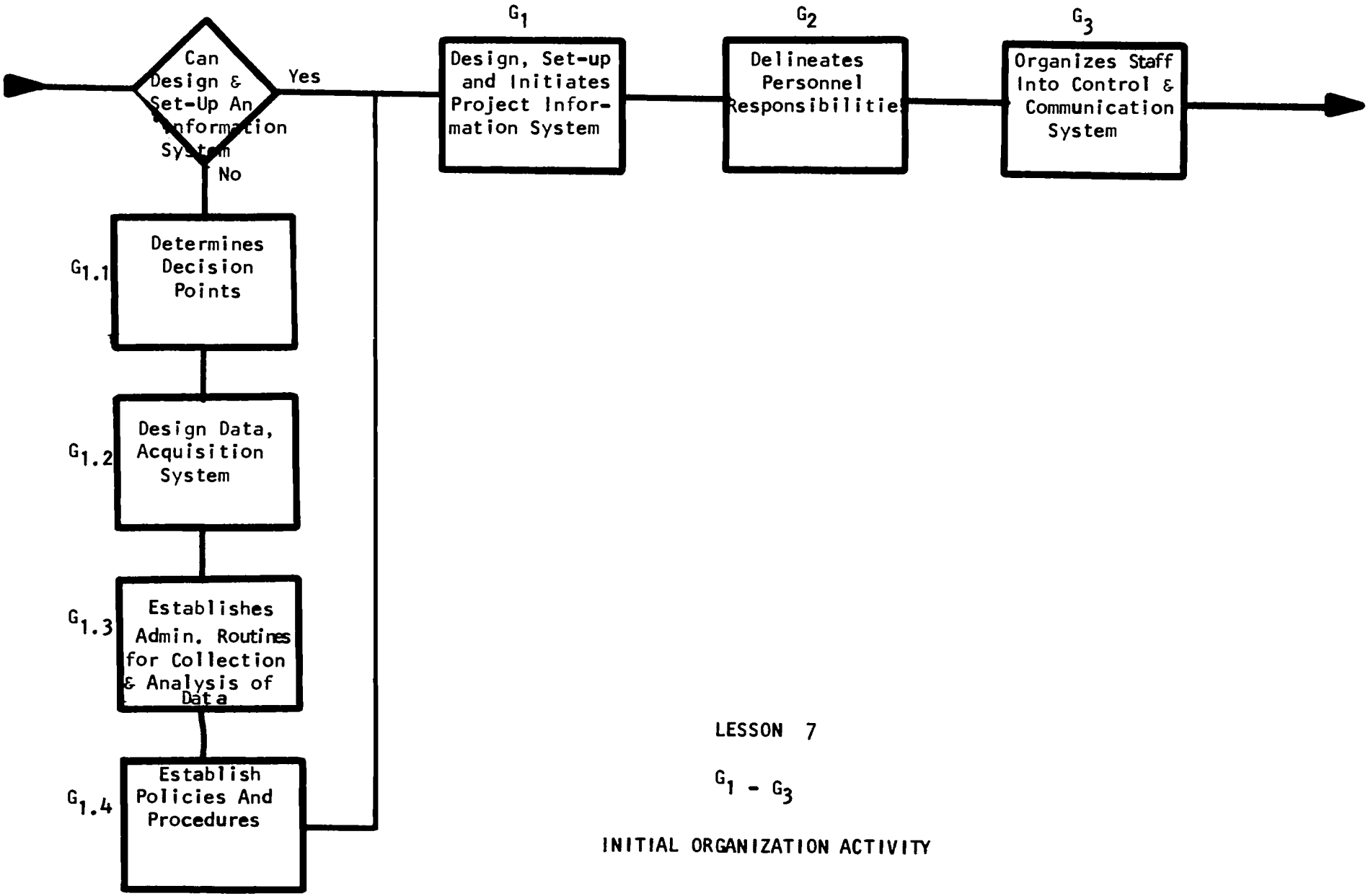
$E_1 - E_{10}$



Page 9 of Figure 5

LESSON 6 IMPLEMENTATION AND GEAR-UP

$F_1 - F_4$

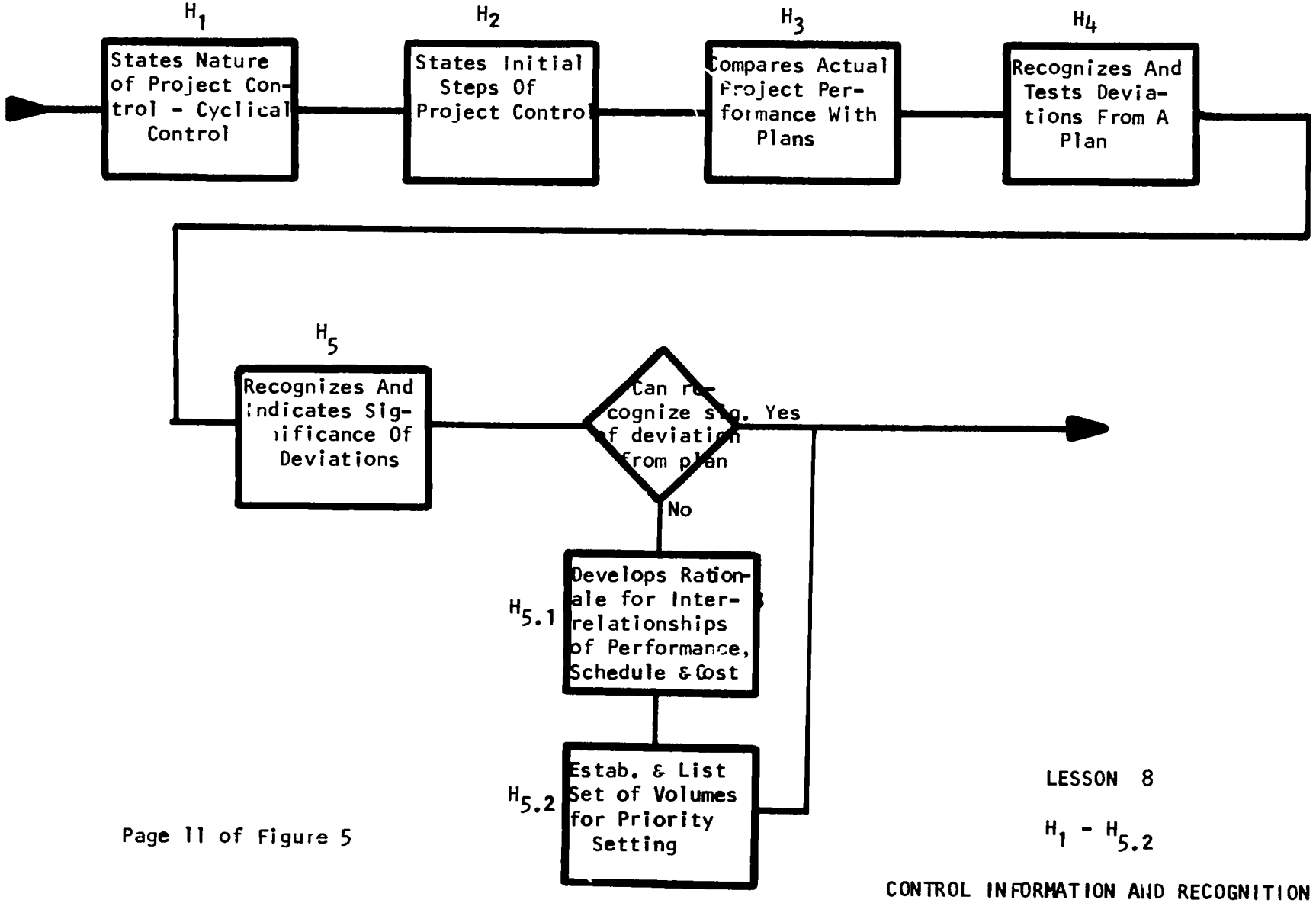


Page 10 of Figure 5

LESSON 7

$G_1 - G_3$

INITIAL ORGANIZATION ACTIVITY

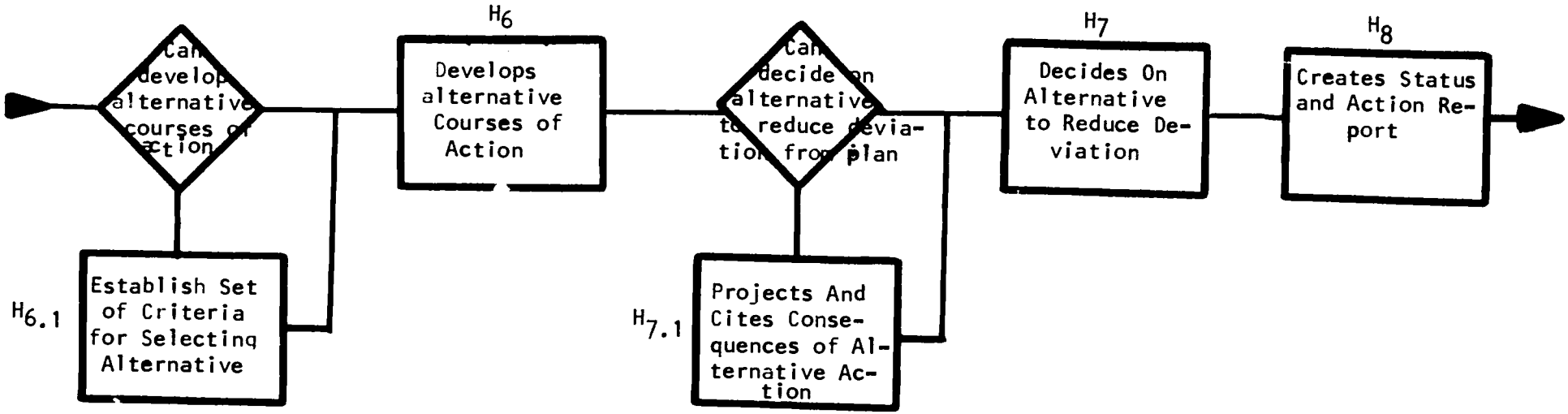


Page 11 of Figure 5

LESSON 8

$H_1 - H_{5.2}$

CONTROL INFORMATION AND RECOGNITION

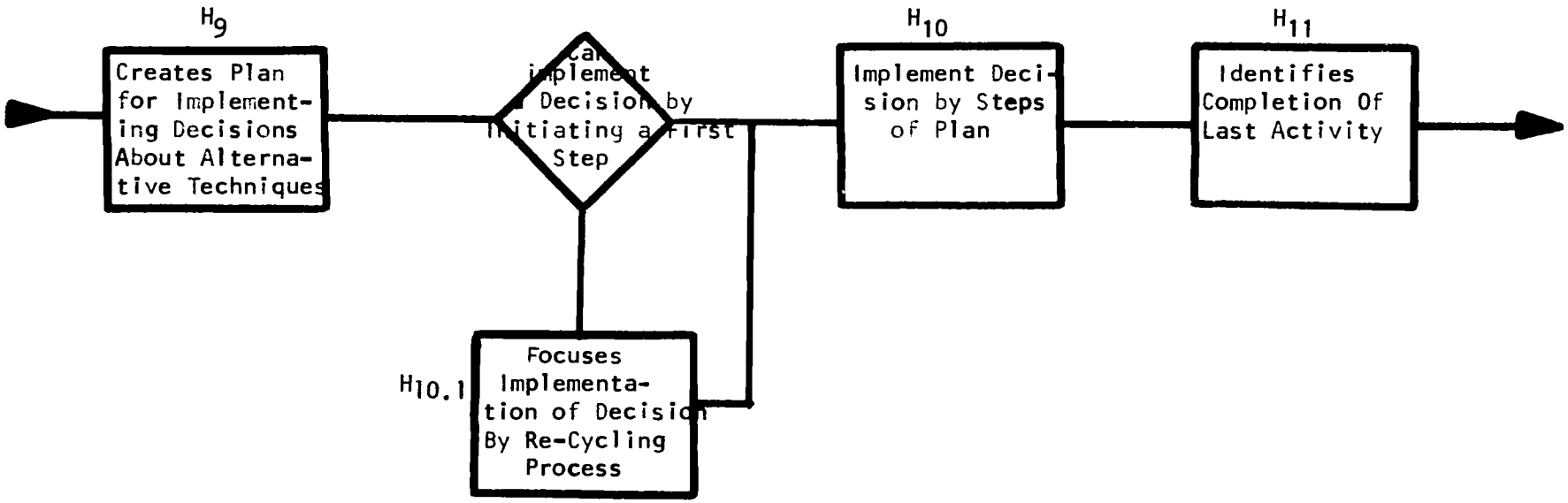


LESSON 9

$H_6 - H_8$

Page 12 of Figure 5

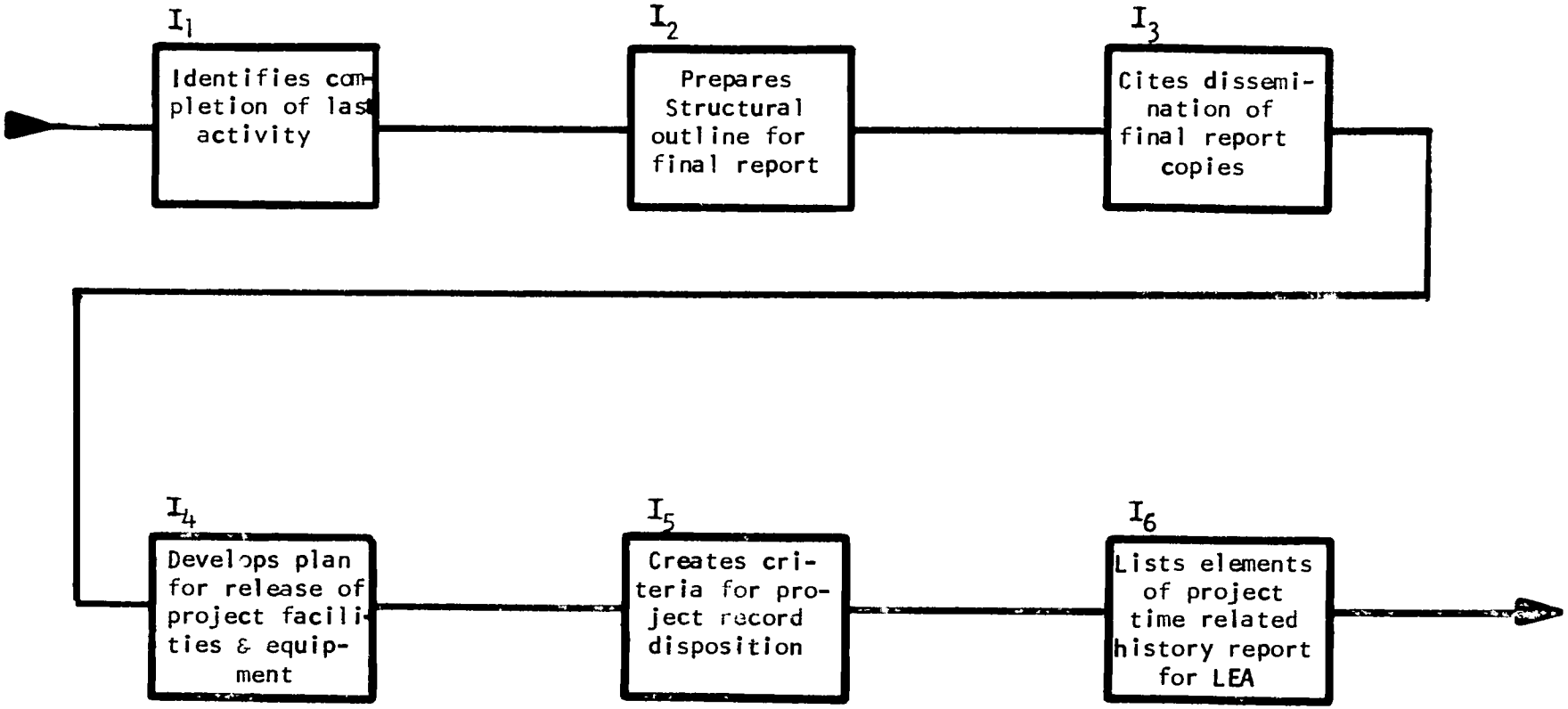
CONTROL ALTERNATIVES AND DECISIONS



Page 13 of Figure 5

LESSON 10 DECISION IMPLEMENTATION

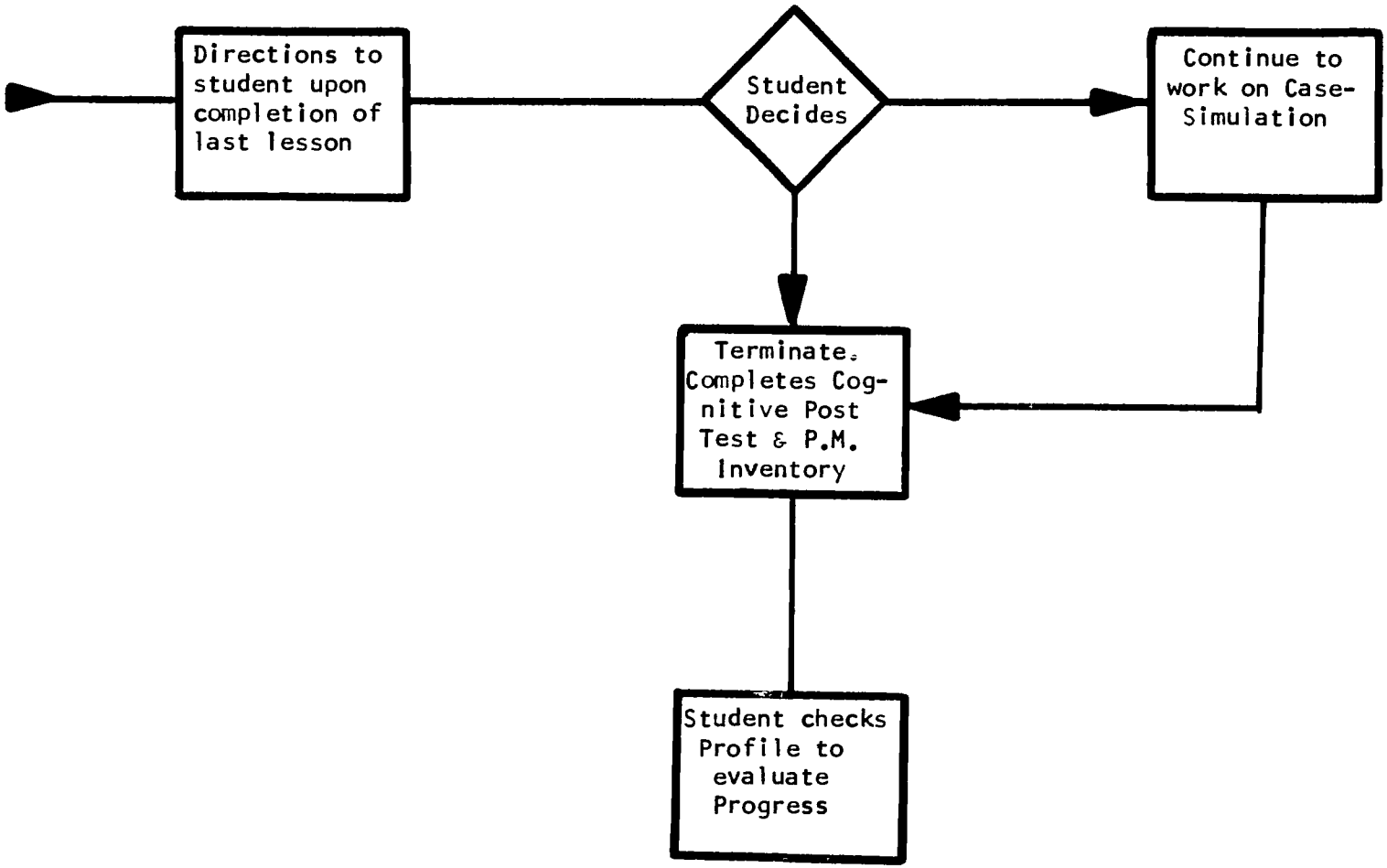
$H_9 - H_{11}$



LESSON 11 PROJECT TERMINATION

Page 14 of Figure 5

I_1-I_6



Page 15 of Figure 5

LESSON 12

1) Control Information and Recognition, 2) Control Alternatives and Decisions, 3) Decision Implementation. The lesson outlines of this phase are located in Tables 3i through 3k.

The fourth and last phase is the Termination of the project and is outlined in Table 3b.

By inspecting the outlines one can readily see that there is a great deal of branching within each lesson. With the PMI and the branching within the lessons the package provides a great deal of individualization.

After the trainee completes his particular set of the lessons he is ready to proceed to the simulation-case studies. He may elect to skip this section if he wishes but he misses an opportunity to apply what he has learned. The simulation will be described in a later section of this Memorandum.

The trainee then takes the PMI again to provide him with feedback on his success. He also takes the cognitive posttest and this information will be used for quality control. He then fills out a quality control form to indicate the quality of the package and notes any improvements that may be needed. Quality control will be covered in a later section of this Memorandum.

D. Presentation of Knowledge

The principles of knowledge presentation and the lesson format to be utilized in the two packages being prepared as part of the current total effort were originally discussed in the section presenting the Executive Orientation Package. Those basic considerations will not be repeated here. In general, the same basic format for lessons developed

for the Orientation Package has been employed for the Project Managers Training Package.

The general structure for knowledge presentation takes the form or configuration outlined in Section C above. A total of 11 lessons have been developed following that structure. In addition, two other lessons have been created. One is focused upon introducing the learner to the concept of project management and precedes the first of the eleven lessons noted. A final lesson has been incorporated to direct the student upon termination of the last lesson. It indicates the options he has with regard to the case-simulation and posttesting activities. The lesson outlines showing presentation of knowledge are included in this report as Tables 3a through 3m.

The media employed is largely of the tape/slide mode for presentation coupled with appropriate exercises for practice and application of skills as required in the behavioral objectives. In several lessons, branching procedures have been incorporated as deemed desirable in order to permit a more flexible movement through the content.

The case-simulation described below should not be viewed basically as a vehicle for the presentation of knowledge as is true in the case of the lessons. Its prime function is to provide the student with an opportunity to integrate and synthesize the skills, ideas, and concepts learned from the lessons. It might better be considered as a form of practice and reinforcement but at a higher level than the mini-exercises contained in the individual lessons.

Table 3a.

Lesson No. 0

Date Prepared 2/17/71

Lesson Title Introduction/Project Definition

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
0	Introduction to Project Management A. Project is: goal directed, uncertain path time and resource allocation, produces end product, has performance level. B. Project Management 1. Organization structure which encourages and supports projects. 2. Uses project managers a. project manager is integrator, planner, evaluator, decision-maker, implementor. b. responsibility of project managers: to accomplish project goals within time, cost and performance plans. c. duties of: time scheduling funds allocating resource allocating plans and actions responsibility delineations evaluating and reviewing directing controlling 3. Example of Project Management Lockeed Aircraft "C54" project as quoted by Toffler, Future Shock. C. The Organization of Projects Missions involved in project management as grouped in four phases.	Attendees will be given a list of activities and will select those which meet the requirements of a project.	Slides 1-7 Slides 8-12 Slides 18-22 Slides 13-17	Booklet Slides Tape Presentation Slides Total		10 min 6 min 16 min

Table 3b. P.M. Package Outline

Lesson No. 1

Date Prepared 2/17/71

Lesson Title Project Definition

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Objectives	Est. Time
1	Project Definition A. Description of what the project is about, i.e. goal of the project. 1) goal determined by group effort of people at different levels in organization (this involvement enhances the likelihood of positive assistance during project operation). 2) Precision is important. - divides what is to be achieved from that which isn't. - is the foundation upon which all subsequent project work is built. - inadequate definition usually results in unnecessary problems. - helps develop consensus of thought on the subject. 3) Quote "about one half of planning time should be devoted to goal statement preparation." B. Example of project definition. Given the description of an activity a goal statement will be developed.			Booklet Tape	A_1	10 min.
2		The attendee will be given a description of an educationa activity that is to be treated as a project and will write an overall goal statement for the project.	The attendee will be given 3 overall goal statements which are all considered appropriate for the activity. (A)	Booklet	A_1	8 min.

Lesson No. 1

Lesson Title Project Definition

Date Prepared 2/17/71

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Objectives	Est. Time
3	A. Overall goal is broken down into sub-goals, called missions. Also missions are broken down into sub-missions called tasks. Where necessary tasks are broken down into sub-tasks. B. The goal breakdown is analogous to: 1) system analysis techniques Overall System Sub system A Sub system B Sub system B_1, B_2 --- B_n Sub system N 2) Functional Delineations where a system is described by its various functions. Project Function A Function B Function C 3. p. 60-78 Cook's book.	The attendee is given an overall goal statement and is to break the goal down into from 3 to 8 missions which are sub-goals.	The attendee will be given 3 goal breakdown solutions to the exercise. (A)	Booklet Slides Tape	A_2	20 min.
4.	A. The difference between mission and task is determined by an orientation for the person performing the activity. 1) A mission is group effort using a considerable amount of project resources. 2) A task is a small amount of effort and involves limited project resources.	The attendee is given a list of activities which includes an overall goal statement, a set of mission statements, and a set of task statements. The attendee is to discriminate the missions from the tasks.	The attendee will be given a suggested solution to the exercise. (A)	Booklet Slides	A_3	15 min.

Table 3b. con't

Lesson No. 1

Date Prepared 3/8/71

Lesson Title Project Definition

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
5	A. Performance is specified for each task listed in the work breakdown structure. One should: 1. focus on a product for each task 2. treat each task separate from others as much as possible. 3. prepare a work package. B. Conditions surrounding the accomplishment of the task are listed as: 1. time constraints 2. environmental factors			Booklet Tape	A_4	5 min
6	Requirement for a work breakdown structure document which has: 1. hierarchial goal to task chart. 2. work packages for each task detailing work, performance and conditions.	The attendee will be given a goal statement and situational description and is to create a work breakdown document.	The attendee will be given three suggested solutions to the exercise (A)	Booklet	A_5	20 min

Table 3c. P.M. Package Outline

Lesson No. 2

Date Prepared 2/18/71

Lesson Title Work Flow

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	Define Work Flow 1) Use a set of construction principles to draw. 2) Has functions: a) shows visually the logic of the planner. b) forces the formation of a plan. c) serves as communications between planners, between workers and planners, and among workers. d) serves as a device for marking project progress. (a control device)			Booklet	B_1	3 min
2		The attendee will be given a work breakdown structure of a specified activity and will draw a project flow chart which puts the tasks in logical work sequence.	The attendee will be given a suggested work flow solution to the exercise (A).	Booklet	B_1	8 min
3	Decision Point. Provided the attendee feels confident about his ability to draw work flow using a project definition and work breakdown he should branch to Sequence 7. Otherwise, he should continue with Sequence 4.					0
4	A. Work Flow Diagrams types and examples: 1) event oriented. 2) activity oriented 3) see attached description.			Booklet	$B_{1.1}$	30 min

Table 3c.

Lesson No. 2

Date Prepared 2/18/71

Lesson Title Work Flow

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
Con't 4	B. Activity Oriented Flow Chart Symbols: 1) activity or process box. 2) line arrow for input/output. 3) start and stop symbols 4) decision diamonds with two states. C. Flow Chart Techniques D. Event Oriented Network Symbols 1) line arrow for the activity 2) circle (nodes) for completion of events. 3) completion time along the activity lines. E. Network techniques. F. References (1) Cook, Educational Project Management, 1971, p. 81-104. (2) Cook & Trzebiatowski, Elementary Concepts, Principles and Procedures for Systems Flow Charting, 1970.	The attendee will be given a list of activities in order and will convert the activities into work flow diagrams, one a network diagram for events and the other an activity flow chart diagram.	The attendee will be given a suggested work flow and network diagram for the exercise (A).			
5	Antecedent-Consequent Logic A. Description of stimulus-response. B. Examples of: 1) chemical reaction 2) psycho-motor reflexes 3) assembly of a "parts provided" item.	The attendee will be givenaa mixed list of antecedents and consequences and will match corresponding pairs.	The attendee will be given a suggested set of matched items (A).	Bookle Tape	$B_{1.2}$	10 min
6	Logical Arrangement of Related Tasks A. Use antecedent-consequent logic B. Determine task to task order relationship. - The input of subsequent task is the output of a previous task.	The attendee will be given a unsequenced list of tasks all of which are related to a specified activity and will arrange the list into sequenced order using antecedent -consequent logic.	The attendee will be given a suggested sequence for the tasks of the exercise (A).	Booklet Tape	$B_{1.3}$	10 min

Table 3c. con't
Lesson No. 2

Date Prepared 2/19/71

Lesson Title Work Flow

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
7		The attendee will be given an incomplete flow chart of a specified moderately complex activity and he will trace an example of work effort through the flow chart so as to identify and add missing processes, input, output or feedback, or decision points (Face Validity Test).	The attendee will be given a flow chart which contains the suggested solution to the exercise (A).	Booklet	B_2	8 min
8	Decision Point. Provided the attendee feels confident about his ability to check the completeness of a work flow chart which has been previously prepared he should branch to segment 10. Otherwise, he should continue with sequence 9.			Booklet	B_2	0
9	A. Concept of Feedback 1) related to a decision 2) results in multiple inputs to a process box. B. Concept of output of one process becoming the input of the next sequence-process. C. References, (1) Miller, David W. & Starr, Martin, The Structure of Human Decisions, 1967, pp. 14-20.	The attendee is given a set of flow chart segments which have certain components such as decision points, feedback loops and process box, and he is to check F for those segments which have feedback and I for those which are sequenced with output/input as differentiated from those which have incorrect components.	The attendee will be given a suggested solution to the exercise (A).	Booklet	$B_{2.1}$ $B_{2.2}$	8 min
						74

Table 3c con't.

Lesson No. 2

Lesson Title Work Flow

Date Prepared 2/19/71

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
10	A. Upon encountering faulty flow charts that: 1) do not accomplish the stated end product. 2) have broken flow as evidenced by more than one stop point. 3) that lack decision points where the context implies branching. B. Then, one or more of the following are indicated: 1) add tasks (steps) to the flow 2) remove tasks (steps) to the flow 3) add decisions to the flow 4) remove decisions from the flow 5) connect process boxes with information or input/output lines.	The attendee is given a faulty flow chart of a specified complex activity and he is to correct the flow chart so that it directs work-task effort so as to produce an end product which fulfills the requirements of the project definition (goal).	The attendee is given a suggested solution to the exercise. (A) The attendee is presented with a tape discussion of the various considerations to be given to each of the identified faults in the exercise flow chart (R) (A).	Booklet Tape Total	B_3	20 min 15 min 35 min
11	A. Concept of Milestones 1) Major tasks of crucial importance to accomplishment of task. 2) Often gathering point of several task outputs or divergent point of outputs. 3) often identified as interim reports or project conferences, etc. B. Identify milestones - flag a process box that is to be a milestone when the task is completed. C. Event is the fact of completion of a task (or process). D. References, (1) Cook, Educational Project Management, 1971, p. 87.	The attendee is given a completed flow chart and he is to identify with a flag five process boxes as milestones events.	The attendee is given a suggested solution to the exercise.	Booklet Tape	B_4 $B_{4.1}$	10 min

Table 3c con't

P.M. Package Outline

Lesson No. 2

Date Prepared 2/19/71

Lesson Title Work Flow

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
12		The attendee is given a moderately simple project definition and he is to create (1) a work breakdown structure of at least three levels and 10 elements of lowest level; (2) a logical flow chart which has as last output the end product of the goal and has at least 12 symbols of process or decisions; (3) an identification of at least three milestone events.	The attendee will be given three suggested solutions to the exercise (A). The attendee will be presented with a tape discussion of the various considerations appropriate to the exercise effort in creating a work breakdown structure, a flow chart, and selection of milestones.	Booklet Tape Total	B_5	20 mi 15 mi 35 mi

Table 3d.

Lesson No. 3

Lesson Title Time Estimating

Date Prepared 2/18/71

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	A. Resource Materials on File, Project Manager needs manpower study manuals, work efficiency study reports, standard skilled task time manuals. B. Reference:			Booklet Tape	C_1	3 min
2	Project manager requires own or consultant's skill in estimating time for the accomplishment of tasks: 1. experienced based estimate 2. reference book calculation 3. intelligent guess But includes: 1. some degree of uncertainty. 2. two kinds of time estimating deterministic and probabilistic. 3. the time varies as a function of a particular task or activity.	The attendee will be given a list of tasks and will estimate the type skilled persons needed and the length of time required to perform the tasks.	The attendee will be given a suggested solution to the exercise. (A)	Booklet Tape	C_2	12 min
3	Decision Point. Provided the attendee feels confident about his ability to estimate type of skilled persons needed and the time required for various tasks he should branch to sequence 6. Otherwise, he should continue with sequence 4.					0

77

Table 3d con't.
Lesson No. 3

Date Prepared 2/18/71

Lesson Title Time Estimating

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
4	Job roles normally encountered in educational projects and attending skills, work rates, etc. Secretary, typist/clerk statisticians researcher evaluators subject area instructor/specialists etc.	The attendee will be given a list of tasks and a list of job roles, he will designate the skilled persons needed for each task.	The attendee will be given a suggested solution to the exercise (A)	Booklet	$C_{2.1}$	10 min.
5	Skilled persons job performance measures. Average work ability by roles Average work rate by roles	Attendee will be given a set of tasks and is to list the skilled persons needed for the tasks and the length of time needed to accomplish each.	The attendee will be given a suggested solution to the exercise. (A)	Booklet	$C_{2.2}$	15 min
6	Tasks can be completed in a faster time frame with high utilization of skilled persons or slower time frame with low utilization. The time for task accomplishment is flexible with varying utilization of skilled persons and resources. A "best" task time is one which conserves resources input to the next related task.	Attendee will be given a set of related tasks and the work-flow diagram for the tasks. He will modify the estimated time for task accomplishment so that the interrelated tasks are treated to efficient use of skilled persons time.	The attendee will be given a suggested solution to the exercise. (A)	Booklet	C_3	15 min
7	A. Total project time is some combination of: 1. adding times for all tasks in the project given a maximum time. 2. adding times for those tasks which fall along the longest path in the work flow diagram. This determines the critical path.	Attendee will be given a work flow diagram with "best" task times given. He will determine the total project: 1. maximum possible time 2. critical path time, and 3. estimated time.	The attendee will be given a suggested solution to the exercise. (A)	Booklet	C_4	12 min

Lesson No. 3 Date Prepared 2/18/71

Lesson Title Time Estimating Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
7 continued	3. estimates total project time using own or a consultant's experience. B. PERT techniques for total project time, can be used for determining an optimistic, most likely, and pessimistic time. C. Reference: Cook, Educational Project Management, 1971, p. 107-110. PERT time techniques, p. 110-118 time adjustment, p. 118-121					79

Table 3e.

Lesson No. 4

Date Prepared 2/18/71

Lesson Title Resource Estimation

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	A. Resource estimating is linked with scheduling, through process of assigning resources to tasks planned B. The schedule for task accomplishment is put in visual form using a GNATT type chart (task-event calendar). The ends of the task symbol stands for the start and complete events.	Attendee is given a goal statement, a set of tasks and a work flow sequence. He is to put the tasks on a calendar.	The attendee is given a suggested solution to the exercise (A).	Booklet Tape	D_2	5 min
2	A list is determined which for each task estimates; - skills needed and length of time - facilities needed - equipment needed - materials and supplies needed - specialized services (computer, printing, consultants) needed.	Attendee is given a set of tasks and he is to prepare a list of estimated resources needed for each task.	The attendee is given a suggested solution to the exercise. (A)	Booklet Tape	D_1	2 min
3	Decision Point. Provided the attendee feels confident about his ability to list the total estimated resources needed for given tasks he should branch to sequence 5. Otherwise, he should continue with sequence 4.					
4	A. Types of resources and examples of each: 1. Skilled persons salary, wages, etc. 2. Equipment 3. Facilities 4. Materials and supplies 5. Specialized services.	Attendee is given a list of specific resources and will put each under the given broad headings. He is also asked to identify a few additional specific resources under each heading.	Attendee is given a suggested solution to the exercise. (A)	Booklet	$D_{1.1}$ $D_{1.2}$	8 min

Table 3e. con't

Lesson No. 4

Date Prepared 2/18/71

Lesson Title Resource Estimation

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
5	Resources can be coded to allow for visual matching of the tasks and events with the needed resources. 1. color codes 2. number or letter codes When a calendar contains the tasks coded both for start and stop event times and resources it is known as a task-event-resource calendar.	Attendee is given a task-event calendar and a set of resources needed for each task. He is to devise a code for the resources and integrate the coded resources with the task-event-resource calendar.	Attendee is given a suggested solution to the exercise (A).	Booklet Tape Visuals	D_3 $D_{3.1}$	15 min
6	The task-event-resource calendar can be used to modify the start and stop times of certain time adjustible tasks so as to accomplish a uniform rate of resource use.	The attendee is given a task-event-resource calendar and a logic workflow diagram. He is to adjust some tasks to accomplish a somewhat uniform rate of resource use.	Attendee is given a suggested solution to the exercise (A).	Booklet Visuals	D_4	12 min.
7	Decision Point. Provided the attendee feels confident about his ability to adjust task events so as to obtain a somewhat uniform rate of resource utilization he is to branch to sequence . Otherwise, he should continue with sequence 8.			Booklet		0
8	Some skilled persons are capable of performing several job specifications. Where possible, these several job specifications can be combined to a single skilled person so as to utilize a single resource need. The task-event-calendar can be recoded to account for this flexibility.			Tape		8 min

Table 3e. con't
Lesson No. 4

Date Prepared 2/18/71

Lesson Title Resource Estimation

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
9	The high and low count of particular resource usage can be obtained by counting the resource vertically down the task-event-resource calendar and by strips across the calendar.			Booklet Tape	$D_{4.1}$	10 min
10	The high counts of resource items can be used to examine the related tasks to determine whether some tasks can be shifted in time to low counts of the same resource items. Adjustment of this type can reduce the total quantity of the particular resource needed.			Booklet Tape	$D_{4.2}$	12 min
11		The attendee is given a task-event-resource calendar and a logic work flow diagram. He is to adjust various skilled persons into one job and is to adjust some tasks to accomplish a somewhat uniform rate of resource use.	Attendee is given a suggested solution to the exercise (A)	Booklet Visuals	D_4	20 min
12	Resource Commonality table is a cummulative listing of the various types of resources needed and the frequency of need.	The attendee is given a task-event-resource calendar that is somewhat uniform in resource use. He is to determine the total needed resources by types and number.	Attendee is given a suggested solution to the exercise (A).	Booklet Visuals	D_5	20 min
13	Determine lead time for resource acquisition: 1. need shopping catalog for equipment materials. 2. personnel directors procedures 3. organizations 4. task-event-resource calendar	The attendee is given a task-event-resource calendar and commonality table and is to apply lead time to the earliest time for each specific resource. He should make the procurement chart to indicate the total plan for procurement.	Attendee is given a suggested solution to the exercise (A).	Booklet	D_6	15 min

Table 3f.

Lesson No. 5

Date Prepared 3/9/71

Lesson Title Cost Estimates and Budget

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	Project Financial constraints imposed by laws, guidelines, expenditure rates, etc. a. federal b. state c. local			Booklet Tape	E_1	5 min
2	Personnel costs Using the commonality table for resources and current wage/salary scales determine costs for total project personnel, travel and fringe benefits.	The attendee is given a project commonality table and a wage/salary scale and he is to cost out the project personnel costs travel and fringe benefits.	The attendee is given a suggested solution to the exercise (A).	Booklet Tape	E_2	10 min
3	Decision Point Provided the attendee feels confident about his ability to determine project personnel costs he should branch to sequence number . Otherwise, he should continue with sequence number 4.			Booklet		0
4	Project personnel list The skilled persons indicated by the task-event-resource calendar can be placed on a list as: full time for a year, full time for part of a year, part time, and days of consultants.			Booklet Tape	$E_{2.1}$	3 min
5	Local Educational Agency personnel as skilled persons for project use. Using local personnel roster full time in the summer , and part time personnel for the project could be identified for employment.			Booklet Tape	$E_{2.2}$	3 min

Table 3f. con't
Lesson No. 5

Date Prepared 3/9/71

Lesson Title Cost Estimates and Budget

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
6	Reference manuals on consultant services available and current wage/salary rates and fringe benefits scales can be obtained from: 1. Government Printing Office 2. business libraries 3. State Unemployment Offices			Booklet Tape Visuals	$E_{2.2}$	3 min
7	Personnel Costs Using the commonality table, task-event-resource calendar, and the wage/salary rate schedule the personnel costs can be determined for the project effort. Also, the travel and fringe benefits are calculated to support the project personnel.	The attendee is given a commonality table, a task-event-resource calendar and wage/salary and benefit schedules. He is to determine project costs for personnel, travel and fringe benefits.	The attendee is given a suggested solution to the exercise (A).	Booklet Visuals	$E_{2.4}$ $E_{2.5}$	20 min
8	Project Facilities 1. Using the resource commonality table the required project facilities are determined. 2. The availability of local facilities are investigated and associated costs determined. 3. When necessary private facilities are identified and associated costs determined.			Booklet Tape Visuals	E_3	6 min
9	Indirect Costs Projects supported by a local agency occupy space and incure indirect expense. Payment to the supporting agency can be in the form of a specific amount or a percent of personnel costs.			Booklet Tape	E_4	4 min

Table 3f. con't

Lesson No. 5

Date Prepared 3/9/71

Lesson Title Cost Estimates and Budget

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
10	Equipment selection methods. The equipment required for a project can be rented or purchased depending on the nature of: 1. comparable costs 2. follow-on project possibilities 3. governmental and local regulations There is a requirement to establish criteria for the decision to buy or rent needed equipment using catalogs.	The attendee is given information on equipment and is to establish a set of criteria for a decision on buying or renting the needed equipment.	The attendee is given three suggested solutions to the exercise.	Booklet Tape Visuals	E_5	15 min
11	Equipment Costs The cost associated with equipment needed for the project can be determined using the equipment resource requirements, the selection criteria, and equipment catalogs.			Booklet Tape Visuals	E_6	4 min
12	Materials and supplies cost. The costs associated with the materials and supplies needed for the project can be determined using purchase catalogs and the resource commonality table.			Booklet Tape Visuals	E_7	4 min
13	Contracted services cost. The costs associated with computer services, printing, and consultants can be determined by using the resource commonality table, a statement of LEA availability, and reference catalogs.			Booklet Tape Visuals	E_8	4 min

Lesson No. 5

Date Prepared 3/9/71

Lesson Title Cost Estimates and Budget

Prepared by Charles McLean

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
14	Budget Preparation. The total budget is prepared by combining the costs of the various categorical costs.	The attendee is given a resource commonality table, a personnel cost list, an equipment criteria statement, and price catalogs. He is to determine the project's indirect costs, equipment costs, materials/supplies costs and contracted services costs and is to prepare a total project budget.	The attendee is given a suggested solution to the exercise (A).	Booklet Visuals	E_9	30 min
15	Expenditure Plan A. The budget allocates expenditures by category. B. The expenditure plan allocates, expenditures over time utilizing some of the following: - along functional lines - by tasks or missions - by time periods (weeks, months, etc). - by time periods and within a task or mission. C. Regulations by government or local agency Constraint expenditure plan. - a top dollar limit on equipment purchase per month, or last month of a project. D. Savings of time and money with bulk purchases. E. Advantages to personnel or project for certain methods of pay expenditure.			Booklet Tape Visuals	E_{10}	15 min

Table 3g. P.M. Package Outline

Lesson No. 6 Date Prepared 2/17/71

Lesson Title Implementation and Gear-up Prepared by Paul August

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	Delineate things to consider for implementation or gear-up plan of a project in the LEA. 1) review proposal and contract. 2) identify differences between the proposal and funded Go ahead: a) objective change b) schedule change c) manpower requirements change d) funding change e) performance requirements change f) other changes 3) Resolve differences between proposal and contract, using available resources.			Tape Summary Visuals	F_1	10-15 min.
2		Given a project proposal and contract situation - create a gear-up plan. Identifying: 1) required manpower 2) source of manpower 3) when manpower is needed 4) establish resources requirements and lead time to first activity date. 5) establish method of procuring equipment (buy, rent, or lease).	Compare plan with one that is given - identifying some necessary elements of a gear-up plan (if score is low go to Sequence 3) (A)	Booklet Writes	F_2	20-30 min.
3	Summarize various elements requiring coordination for implementation and gear-up.			Tape Visuals	$F_{2.1}$	5 min.

Lesson No. 6

Date Prepared 2/17/71

Lesson Title Implementation and Gear-up

Prepared by Paul August

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
4		Re-test student armed with sequence 3 information. Create an implementation and gear-up plan using the same given situation as in Sequence 2.	Student to check his plan with one given (R)	Booklet	F_2	10 min.
5		Student identifies knowledge of LEA functional organization and problems faced in implementating a project. 1) resistence to change 2) integration of project with functional organization. 3) Lack of information about the benefits and need for the project. 4) lack of proper implementation plan 5) lack of knowledge to use of tools available. 6) lack of time to sell the project.	Student to identify at least half of the problems listed as a check against his list. If the student fails to display the required knowledge, he proceeds to seq. 6. If student does display sufficient knowledge he proceeds to seq. 7. (A)	Booklet Writes	$F_{4.1}$	10 min.
6	Knowledge presented of ways in which a project can be presented and some elements of project management necessary to be negotiated with the LEA functional structure. 1) Formal written presentation sent to all involved. 2) Give face-to-gace presentation to all involved individually. 3) Give face-to-face presentation to all involved in a group meeting.					88

Table 3g. con't
Lesson No. 6

Date Prepared 2/17/71

Lesson Title Implementation and Gear-up

Prepared by Paul August

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
Con't 6	Elements to be negotiated with functional organization: 1) personnel - special skills, etc. 2) facilities 3) equipment			Tape & Summary	F_4	10-15 min.
7	Re-cap the items which will help facilitate the implementation of a project into the LEA. 1) selling project need to all functional participants by 2) identifying detailed implementation plan. 3) communicating plans to all individuals involved. 4) delineating clearly objectives to be achieved. 5) identifying schedule and form of feedback required of all participants.			Tape & Summary	F_3	15 min.

Table 3h.

Lesson No. 7

Date Prepared 2/17/71

Lesson Title Initial Organization Activity

Prepared by Paul August

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1		Student self-determines knowledge. Can identify elements or requirements of a management information system: 1) Form a given project setting Identifies decision points necessary for an orderly flow of project effort. 2) Identifies necessary data to be included in data base. 3) Identifies procedures and criteria for administering information system.	Compares with answers, if inadequately responds, goes to Sequence 2. If completed satisfactorally, student proceeds to Sequence 5. (A)	Booklet Writes	$G_{1.1}$ $G_{1.2}$ $G_{1.3}$	15 min.
2	Project Information System A. Data Base 1) Need for information in decision making. 2) Information requirements to be considered when designing information system. 3) Data base concept. 4) Information flow control. 5) Fundamental information available. 6) Filtered information available. 7) Timeliness important. 8) Accuracy of data 9) Understandable data-analyzed. 10) Universal nature of system.			Tape & Summary Visuals	G_1 $G_{1.1}$	10-15 min.
3	B. Data Forms Design 1) Schedule - bar chart, Gantt chart, work flow, PERT/CPM. 2) Cost - budget allocation, accum. curve, bar chart. 3) Performance reports			Tape & Summary Visuals	$G_{1.2}$	10-15 min.

Table 3h. con't

P.M. Package Outline

Lesson No. 7

Date Prepared 2/17/71

Lesson Title Initial Organization Activity

Prepared by Paul August

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
4	C. Policies and Procedures 1) Performance specification 2) Evaluation criteria 3) Organization/responsibility Guide 4) Procurement procedures 5) Report requirements 6) Administrative procedures 7) Organization chart			Tape & Summary Visuals	$G_{1.3}$ $G_{1.4}$	10-15 min.
5		Test student knowledge of Sequence 2, 3, and 4 - multiple choice questions.	Check against answers. If incorrect, review Sequences 2, 3, and 4 (A).	Booklet Written	G_1 $G_{1.1}$ $G_{1.2}$ $G_{1.3}$	10 min.
6	Present considerations necessary for delineating personnel responsibilities. 1) communications lines (reporting requirements). 2) responsibilities identified (management responsibility guide) 3) authority delineated 4) breakdown of effort 5) organizational chart development and need for.			Tape Visuals	G_2 G_3	
7		Given a project plan - specific work roles are identified by assigning responsibilities for specific tasks. An organization chart is developed showing reporting and working relationships.	Compare with example (A)	Booklet Written Visuals	G_2 G_3	15-20 min.

Lesson No. 8 Date Prepared 3/5/71

Lesson Title Control Information and Recognition Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	Introduction A. Re-define and explain the idea of control. B. Review planning and implication in terms of control. C. Describe the necessary elements of control. D. Describe and indicate importance of the re-cycling (feedback) aspect of control.			Tape	H_1	10 min.
2	A. Information needs for control: 1) explain why needed 2) indicate what is needed (time, cost, and performance TCP). B. Obtaining the information by reports: 1) type of reports 2) content of reports 3) format of reports 4) reporting dates			Tape	H_2 $H_{2.1}$	6 min.
3		Given a plan (MIS) the trainee will specify the type and dates that reports be given to the project director.	A list of the reports and the dates needed with an explanation of the selection of the same (R).	Booklet	H_2 $H_{2.1}$	5 min.
4	Comparing report information to plan to determine deviations: A. At the time of a report past, present, and future considerations. 1) note event and activities completed. 2) re-determine TCP for the activities in progress 3) re-estimate TCP for the near future activities.			Tape	H_3 H_4	15 min.

Lesson No. 8

Date Prepared 3/5/71

Lesson Title Control Information and Recognition

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
Con't 4	B. Recognizing deviations: 1) Process the finding to match plan. 2) Compare the finding to the plan. If the difference are within planned bounds there is no deviation, if not a deviation. 3) Listing deviation					
5		Given a plan and several short reports the trainee compares the actual condition to the plan and lists the deviations.	A list of the deviations (R).	Paper	H_3 H_4	10 min.
6		Branching test of ability to develop a interrelationship rational for TCP and establishing a set of values and criteria to judge significant deviation. If successful the trainee skips to step 8 and if not he continues on to step 7.	Answer sheet (A).	Booklet	H_5 $H_{5.1}$ $H_{5.2}$	7 min.
7	Recognizing the significant deviation from project plan. A. Explain the importance of ranking B. Developing a rationale for the interrelationship of TCP in a project (example). C. Establishing a set of values and criteria for judging significance of a deviation.			Booklet	H_5 $H_{5.1}$ $H_{5.2}$	10 min.

Table 3i. con't

Lesson No. 8

Lesson Title Control of Information and Recognition

Date Prepared 3/5/71

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
8		Given some funding agency, LEA, and other general constraints the trainee develops a rationale for the interrelationship of TCP in a project.	A statement for the interrelationship of TCP and an explanation of it was obtained (R).	Booklet	$H_{5.1}$ PP	5 min.
9		Given a rationale for the interrelationship of TCP the trainee develops a criteria for judging the significance of a deviation from plan for a project.	A list of criteria necessary for judging the significance of a deviation and an explanation of the need for including a given element. (R)	Booklet	$H_{5.2}$	5 min.
10		Given a list of deviations from plan and a list of criteria the trainee lists in order of importance the deviations.	Ranked list of deviation and the reasons they were placed in that order (R).	Booklet	H_5	5 min.

Table 3j.

Lesson No. 9

Date Prepared 2/22/71

Lesson Title Control Alternatives and Decisions

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1		Branching test: Of knowledge of the vocabulary, ability to create alternative course of action, and ability to establish a set of criteria to eliminate the more unfeasible alternatives. If the trainee is successful he skips to step 3, if not continues to the following step 2.	Answer sheet (A) Answers will also furnish reinforcement for those successful	Paper	H_6 $H_{6.1}$	5 min.
2	A. Introduce and explain the purpose of developing alternative courses of action to correct significant deviations from plan for a project. Give examples when applicable to facilitate insight. Alternatives areas to consider are: - modifying the trade-off relationships of performance, schedule, and cost within the plan. - modifying the information-report system to more accurately describe the operations - modifying the plan so as to reduce the differences of the plan to the operations - modifying the goal or missions of the project so as to allow accomplishment of the project realizing contract constraints. B. Introduce and explain the purpose for the establishment of a set of criteria for the selection of an alternative to aid in rejecting the more unfeasible alternatives at an earlier state of consideration. Give examples where possible.			Tape	H_6 $H_{6.1}$	15-20 min.

100

95

Lesson No. 9

Date Prepared 2/22/71

Lesson Title Control Alternatives and Decisions

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
3		Given a deviation from plan (problem) the trainee will develop a list of alternatives.	List of alternatives to the given problem. (R) The trainee checks his list with the given list. If the trainee is not satisfied he consults with a colleague knowledgeable in project management.	Paper	$H_{6.0}$	10 min.
4		Given a list of alternatives and some constraints for a given problem the trainee establishes a set of criteria for the selection of an alternative and rejects several of the alternatives.	List of rejected alternatives and accepted alternatives with an explanation for the rejection and acceptance of each. (R)	Paper	$H_{6.1}$	5 min
5		Branching Test: of knowledge of the vocabulary, ability to describe on an alternative to be implemented using a set of criteria and the ability to cite the consequences of the alternatives. If successful skip to step and if not continues to the following step 6.	Answer sheet (A) Answers will also furnish reinforcement for those successful	Paper	H_7 $H_{7.1}$ $H_{7.2}$	5 min

Table 3j. con't
Lesson No. 9

Date Prepared 2/22/71

Lesson Title Control Alternatives and Decisions

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
6	A. More fully explain the purpose for the establishment of a set of criteria to rank a set of alternatives to aid in the selection of one for implementation. B. Introduce and explain the purpose for projecting and citing possible consequences of the more acceptable alternatives and considering these in selecting an alternative for implementation.			Tape	H_7 $H_{7.1}$ $H_{7.2}$	10-15 min.
7		Given a list of alternatives and some of the constraints, the trainee establishes a set of criteria for the ranking and selection of an alternative and ranks the alternatives.	List of ranked alternatives and the reasons for the ranking. If the trainee does not agree he consults with a colleague knowledgeable in project management. (R)	Paper	$H_{7.1}$	10 min
8		Given a list of ranked alternatives, the trainee lists the consequences of selecting the first three alternatives and selects one of them.	List of consequences for the given alternatives. (R)	Paper	H_7 $H_{7.1}$	10 min
9	Elements of the decision making process that should be included in a status report to top management.			Tape	H_8	5 min.
10		The trainee creates a short status report for the decision made in step 8 to be sent to top level management.	List of the elements usually included in a status report (R)	Paper	H_8	10 min.

P.M. Package Outline

Table 3k.
Lesson No. 10

Date Prepared 3/1/71

v Lesson Title Decision Implementation

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1		Branching test: of elements of a plan to implement a decision. If successful the trainee proceeds to step 3, if not he continues to step 2.	Answer sheet (A) Answers will also furnish reinforcement for those successful.	Booklet	H_9	5 min.
2	Elements to be considered in the creation of a plan for the implementation of a decision: a) informing, motivating and directing project personnel. b) informing top management c) making changes in the project information system d) devising the original plan			Tape	H_9	10 min.
3		Given a decision the trainee creates a plan for the implementation of that decision within the project.	List of elements that should have been included in the plan (R).	Booklet	H_9	10 min.
4	A. The implementing of the plan for the desired change in the project. B. Focusing of attention on the changes to see if it is operating as desired. C. Information needed to see if the implementation is successful.			Tape	H_{10}	10 min.
						98

Table 3k. con't

Lesson No. 10

Date Prepared 3/1/71

Lesson Title Decision Implementation

Prepared by Peter Stoycheff

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
5		Given a decision implementation plan the trainee creates an action report for top management as a possible first step for plan implementation.	List of elements that should be included with action report (R).	Booklet	H_{10} H_8	5 min.
6	Review of the control phase with particular attention to the re-cycling process.		(R)	Tape	H_{1-10} $H_{10.1}$	10 min.

Table 31.

Lesson No. 11

Date Prepared 3/15/71

Lesson Title Project Termination

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	I. An Overview of Basic Activities Involved in Project Termination Upon Conclusion of Effort: A. Final Reports B. Personnel Disposition C. Facilities-Equipment Disposition D. Criteria for Retention of Project Criteria E. Project History			Tape w/ slide	I_{1-6}	2 min
2	II. General Characteristics of Final Report Structures. A. Signs of a good report. B. Contents of reports. C. Agency Requirements as constraints. D. Dissemination plan and procedure.			Tape w/ slides Sample report outline in book	I_1 I_2	5 min
3		Student develops outline for final report including plan for dissemination.	Checks against sample report in book and list of guidelines on visuals.	Booklet Worksheet	I_1 I_2	10 min.
3	III. Personnel Disposition as Activity in Project Termination: A. Termination important as recruitment. B. Termination considerations in terms of level and type of personnel. 1) professional personnel 2) technical support personnel 3) clerical personnel			Tape and slides	I_3	10 min

Lesson No. 11

Lesson Title Project Termination

Date Prepared 3/15/71

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
Con't 4	C. Termination in terms of Project Organization D. Alternatives for Personnel Disposition: 1) absorption into internal agency 2) transfer to different project 3) personal files forwarded to new organization or project.					
5		Student is provided with list of personnel types and categories and suggest alternatives for particular types.	Compares his recommendations with suggested ones in booklet. (A)	Booklet and Worksheet	13	10 min
6	IV. Facilities Disposition A. Types of equipment to be re-located. 1) furniture 2) typewriters, dictating equipment. 3) physical space (offices). 4) specialized research equipment B. Permissible Relocation 1) U.S. government equipment 2) LEA equipment C. Development of Plan for Re-Location 1) inventory 2) recommended placement 3) dates of availability 4) approval of plan 5) agencies notified of availability			Tape & visuals	14	10 min
7		Given a list of physical equipment, student makes recommendation for disposition	Developed plan checked against a set of questions covering good plan (A)	Booklet Worksheet	14	10 min
						101

Table 31. con't

Lesson No. 11

Lesson Title Project Termination

Date Prepared 3/15/71

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
8	V. Records Management A. General Principles of Good Record Management B. Specific Constraints upon Record Retention 1) financial audits 2) data for professional verification 3) local rules and regulations 4) funding agency rules and requirements C. Types of Records to be Reviewed 1) appointments 2) travel 3) requisitions 4) purchase orders 5) staff minutes 6) cumputer outputs 7) draft reports 8) contracts 9) progress reports 10) data recordings 11) data cards 12) correspondence			Tape with Slides	I_5	15 min
9		Student given several items. Separates into retained and not-to-be retained. Lists factors for classification - generates set of criteria.	Comparison of generated criteria against recommended set (A).	Booklet	I_5	10 min

Table 31. con't

P.M. Package Outline

Lesson No. 11

Date Prepared 3/15/71

Lesson Title Project Termination

Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
10	VI. Project History A. General Function of Project History 1) record of events as they occurred. 2) serve as learning device to avoid future errors. B. Items to be Included in Project History: 1) contract negotiations 2) project origin 3) personnel 4) causes of significant problems 5) remedial actions 6) records and equipment disposition C. Format of Report 1) project objectives 2) time sequence of events 3) list of personnel 4) list of reports and publications 5) recommendations of/or future projects			Tape with Visuals	16	10 min
11		Given a list of possible project activities, sorts into items for inclusion and reporting.	Checks against list presented in booklet.	Booklet Worksheet	16	10 min
12	VII. Summary of Main Points			Tape	1-6	2 min

Table 3m. P.M. Package Outline Page 1 of 1

Lesson No. 12 Date Prepared 3/15/71

Lesson Title Transition to Case or Termination Prepared by Desmond Cook

Seq. No.	Subject Matter	Practice of Performance and Knowledge	Reinforcement (R) or Assessment (A) to be Provided	Media	Obj.	Est. Time
1	Directions to Student Upon Completion of Last Lesson A. Choice of Case-Simulation B. Final Termination					2 min
2		1. Student chooses to terminate.	Completes cognitive posttest and task inventory. Checks profiles to see progress.			One hour
		2. Student continues to work on case.	Assigned case material (and group if seminar). Completes case, then does cognitive test and P.M. inventory.			20 hours

E. Presentation of Practice and Reinforcement

The incorporation of practice opportunities and the provision of reinforcement for the Project Manager Training Package will be done basically as in the Orientation Package. There are however some differences which require special emphasis.

The larger number of lessons and the desire to secure a greater or stronger acquisition of specific skills and abilities on the part of the learner necessitates that there be many opportunities to practice skills and behaviors within each lesson than in the case of the Orientation Package. It is planned to have a larger variety of exercises in order to both practice particular skills as well as to give a diversity of application. The provision of practice in the individual lessons will be done largely through mini-exercises, immediate reinforcement or feedback will be provided. In those situations, where the correctness of the practice is open to judgment, reinforcement will be provided by the incorporation of solutions which reflect a desired or recommended handling of the problem.

In order to develop a synthesis of the separate skills obtained from the lessons, the case-simulation as described in Section IV will be used as the basic vehicle for this integration. Reinforcement will be handled by presenting the learner with a solution indicating how the problem might have been handled by a person competent in the field.

In developing the practice and reinforcement sequence, the total package will be organized so that the student has had an opportunity to practice and be reinforced on a mini-exercise related to the behavior required to deal with that dimension of the simulation exercise before participating in the case-simulation.

F. Quality Control

In terms of basic dimensions, quality control procedures for the Project Management Training Package are not substantially different from that for the Executive Orientation Package. The difference however is in terms of number of objectives involved as well as the scope of content and duration of individual lessons in the total package. This makes the process of quality control somewhat more difficult to design. Preliminary suggestions for a quality control design for both the learner and total package dimension are presented below.

The Learner

The basic function of the quality control procedure from the learner's viewpoint is essentially developing a methodology for letting the student know how well he is doing and where he needs to receive additional instruction. In addition, he should react to each element of the total package in terms of its helpfulness to him in achieving the objective set forth.

It is proposed that three items be developed in order to insure the quality control. One procedure would be to ask the student to complete again the project management inventory and develop a profile in exactly the same manner as before starting the lesson. He would then be urged to compare the two profiles and notice where discrepencies occurred. He would then be directed to review those sections of the total package which would help him to correct the deficiencies. The second item would be the development and administration of a cognitive achievement test so that content of the individual lessons could be

assessed and revised. The cognitive test would be of an objective form with an answer key provided so that the student could immediately assess his own performance and correct possible deficiencies by reading the appropriate sections. Directions would be incorporated into the general instructions for the manual to cover the situation when materials are used in a workshop or seminar environment. Directors of such seminars would be encouraged to forward the results of such examinations to the appropriate agency so that a summative evaluation could be carried out and subsequent materials revised. This cognitive test would be in addition to the individual pre and post test designed for each lesson. The third item would be the development of a rating form or reaction sheet which would permit the learner to react to individual lessons with regard to appropriateness of examples, illustrations, practice exercises, format, and related items. Such reaction sheets could be forwarded to an appropriate designated agency for consolidation and development of suggestions for revision.

Total package. The essential function of total package quality control would be to provide a mechanism so that the agency distributing the self-instructional materials could secure reactions leading to necessary revisions. Some possibilities such as providing a detachable sheet as in the case of the Executive Orientation, follow-on from the support agency to the students after completion of the exercise to determine utilization of content and skills, or some similar alternative could be considered. It is proposed that the principle vehicle for checking up on the utility of the total package would be essentially that

of the detachable sheet within the package which is completed upon termination of all lessons. This form would provide an opportunity for the individual learner as well as a workshop director to react to such items as the content coverage, the examples used in connection with the content, the mode and methodology of presentation, the practice opportunities within each lesson, and similar cognitive dimensions. A second section would be devoted to affective dimensions associated with the materials. Items dealing with the motivational nature of the content, its function as a stimulant to secure additional project management training, encouragement to read additional materials, and measures of whether or not the material is interesting would be incorporated in this dimension.

Subsequent to the development of the prototype materials, it is suggested that some thought be given to developing a feasible and practical way of determining the utilization of the skills and the value of the total package in an actual situation. A vehicle which would allow for the follow-up of a student completing the package to see if the skills were used and if they did benefit or improve his practice of project management would be highly desirable. Another procedure that might possibly be employed would be to develop some type of continuous follow-up with the student to insure utilization of the skills. This might be done by sending him a monthly problem or topic with which he could apply his skills and serve as a "jogger" to his memory. Such notes or problems could be sent on a monthly basis for a period of six months to a year.

The development of quality control checks and procedures for both the learner and the total package themselves will have to be checked for

quality control from time to time. The suggested forms and scales developed above might not provide the necessary type of student reaction useful to conducting proper revision of the packages. It is suggested therefore that a periodic schedule of review of the packages be developed so that information and feedback received from time to time might be summarized and necessary materials revision be made.

G. Case-Simulation Component

Specifications for the development of the total instructional package as contained in both the contract and the RBS memorandum of November 1970 included a requirement that the Project Manager Training Package be so designed that approximately half of the total time of a 40-hour workshop setting be allocated to participant involvement in some type of case-simulation to apply the skills and concepts learned from the self-instructional materials. This section outlines the preliminary design specifications to meet this requirement.

In the context used here, "case-simulation" means some type of student activity which is larger than the single practice exercise employed in the self-instructional package to practice a particular skill. The basic function of the case-simulation is to place the student in an operational setting where he can begin to synthesize the separate skills and to operate more in the manner which it is conceived that a project director or manager would operate.

The role of the case study approach in the training of management personnel has been well documented by Willings. Several types of case situations including discussion, in-basket, role-playing, simulated management, and group simulated management technique are reviewed. Suggestions for using and preparing case studies are presented. The development of a group simulation project management exercise has been reported upon by Cook and Dillman* and Dillman.* This exercise was

*Desmond L. Cook and Duane Dillman, "Simulation in the Training of Research and Development Project Managers," Educational Technology, 9: 39-43, May, 1969.
Duane H. Dillman, A Simulation Exercise For the Training of Educational Research and Development Program Managers, Ph.D. Dissertation, Ohio State University, 1969.

utilized in a series of project management training seminars conducted under a grant from the U. S. Office of Education. The current version of this case-simulation exercise is titled SIMTAR. It has been employed in a wide variety of settings, including workshop activities carried out under the current contractor for this effort.

1. Consideration of Alternatives

The above discussion points out that there are various alternatives available with regard to the type of case-simulation that might be employed in this component of the total package. In considering alternatives, several preferences were identified which had an influence upon the final specification selection as described below. These several preferences were as follows:

a. The exercise should provide the student with an opportunity to integrate and synthesize performance and knowledge gained in the self-instructional materials.

b. The exercise should be viewed as a stand alone item. The student could choose or not to complete it. However, it should not be possible for a student to complete the exercise unless he had first completed the self-instructional materials.

c. The basic setting for the case-simulation should be that of an LEA and the problems involved should be of the type likely to be or actually encountered in the LEA situation.

d. The exercise should present situations to the trainee which involve problems reflecting vertical organizational levels as well as lateral and communication problems.

In addition to the preferences identified, two major issues appeared

in discussion of alternatives which operated to influence the final design.

Individual versus Group. As previously noted, emphasis in the self-instructional materials package was given to developing a design allowing the student to move at his own rate through the materials. Emphasis was upon individual as contrasted to group activity. A major question arose as to whether or not the case-simulation should be restricted to an individualized approach. Put another way, should the case be developed so that the student could work by himself without the presence of a live operator or instructor? After giving consideration to the general context in which the proposed training materials would be used, which would largely be that of a structured workshop environment, a decision was made that the case-simulation exercise would be group oriented and take place within some kind of instructor or operator present environment. While operating in a group atmosphere, no attempt would be made to play different group roles but the emphasis would be upon a single role that of project manager. In effect, the group would be establishing a consensus with regard to the product or output of their deliberations. For each dimension or aspect of the case-simulation, the necessary products or output to be produced by the group would be carefully specified. This choice was made under the assumption that project proposal development, implementation, and operation in most actual settings, would take place in a group atmosphere as contrasted to an individual working alone.

Continuous versus Discontinuous Case. A second major question focused upon whether or not the case ought to be continuous or discontinuous in nature. Continuous here means that each succeeding part of the

case would build upon a prior step. Discontinuous means that the individual phases would be considered as separate or disaggregated elements. Arguments for the continuous case involved ideas that it would provide continuity and create motivation to follow-through on a problem. Arguments against this option involved the realization that case situation might not be able to be too specific and hence wind up being general in nature. A continuous case might also present a problem not generally related to student's area of interest and thus create a motivation problem. Arguments for the discontinuous case involved ideas focusing upon the ability to better focus upon problems, easier to focus upon products to be produced, easier to manage the student through the learning process, the ability to establish possible "school solutions," and be more likely to hit heterogeneous interests of the trainees by providing a variety of problems. The argument against this option involved the fact that there would be a diminished continuity and the likelihood of there not being any integration provided to the student unless he were able to develop it for himself.

Consistent with the general constraints stated in the agreements, the several considerations and issues identified above, plus the general function of the component, three possible alternative formats for the case-simulation were discussed. In developing the alternatives, the number discussed was reduced to a feasible number by not considering such case techniques as role playing, in-basket situations, and the like. Two reasons exist for this action. The first was the limitation of time available for the project staff to become fully acquainted with each type and its advantages and limitations. The second is that the

staff has already had some experience in developing group simulation exercises plus participating in them. It was deemed desirable to capitalize on this experience in exercise development in view of the time limitations. Future revisions of this total package might give more careful consideration to other techniques. The alternatives presented below would fall in the general category of group simulated management techniques as described by Willings. This category was chosen in view of the earlier decision to go with some group procedure. These alternatives have been identified as (a) proposal development, (b) component analysis, (c) problem analysis.

Proposal Development. One possible format would be for the trainee groups to develop a proposal using the skills acquired in the planning phase and then actually implement it in a given situation so that, implementation, operational control problems, and termination could be practiced. Such an approach would provide the student with the most direct experience in the synthesis and application of skills and knowledge. Past experience with SIMTAR exercise, which is devoted to the planning phase alone, has indicated that satisfactory grasp of the principles involved without the actual creation of a proposal document has required approximately four to five half days of instruction time or a total of 20 hours. Even then, opportunities for implementing to gain experience with control have not been possible. While offering the advantage of being creative, this format also has the negative feature of being exceptionally time-consuming particularly in view of the time constraints for the total package. Utilization of this alternative would also create follow up problems in that each group would create a

different proposal hence there would be difficulty in arriving at a commonality of experience for the other phases of project management.

Component Analysis. Recognizing the limitations imposed by the proposal development alternative, a modified alternative would be to allow the group to create a proposal and its major dimensions but then select a particular component or package and explicate it in more detail. This detail might cover the construction of a work flow, the preparation of resource allocation charts, budget, and indicate how they would gear-up to implement this component. As for the control section, the group could develop a reporting format for that particular component and then indicate how the work effort would be terminated at the end of the project. In addition to the actual creation of a plan by the participants, another approach within this alternative would be to present the students with a completed proposal, have a component identified which they would then explicate in more detail. This would permit the development of an operational control problem by the training materials development staff which the group would then be asked to deal with during that phase. The development of this alternative and its implementation would not appear to violate the time constraints yet meet the desired condition of emphasizing skills and providing for creative opportunities.

Problem Analysis. A third alternative would be to present the students with a series of four separate problems, one dealing with each of the four phases. For example, a proposal might be presented to the group and they would be asked to critique that proposal in terms of accepted principles of planning. For the gear-up phase, another different proposal might be presented and the students asked to develop a gear-up

plan. Similar action would be taken for the control and termination phases. Under this alternative, four different problems would be presented to the group each derived from a different proposal or actual situation. This alternative would provide an opportunity to deal with a wide variety of activities representative of projects in the LEA as well as providing diversity in problem substance. This alternative would require that the proposals be carefully selected with regard to the particular phase with which it is designed to be used. Careful structuring of the problem would permit an exercise that would not violate the time constraint.

2. Case-Simulation Specifications

After discussion by the project staff, a decision was made to employ the format represented by the Problem Analysis alternative. Given this choice, several additional specifications relative to the case-simulation have been set forth. The specifications are listed below with the recognition that additional ones might be incorporated as the actual materials are developed.

a. The case simulation will have two basic parts. One part will contain a description of a hypothetical LEA in order to provide an organizational setting for the problems. The second part will consist of those directions, documents, worksheets, and related items which will work the groups of students through the exercise.

b. The case-simulation will have four distinct problems each identified with a major phase of project management.

c. Each problem or phase exercise will be allocated approximately three to four hours to work out.

d. For each type of exercise, a "school solution" will be developed suggesting how the problem might be developed and handled.

e. An instructors manual devoted to the general intent of the case-simulation along with instructions for use will be developed and included in the package.

f. Proposals and problem situations will be drawn whenever possible from actual LEA situations.

Principles and procedures regarding management simulation exercises as set forth by Willings and Greene and Sisson in Dynamic Management Decision Games* and similar references will be employed in order to assure that the final product represents the most current thinking with regard to how such exercises should be developed. An outline of this component is presented as Figure 5.

*J.R. Greene and R.L. Sisson, Dynamic Management Decision Games. New York: Wiley & Sons, 1959.

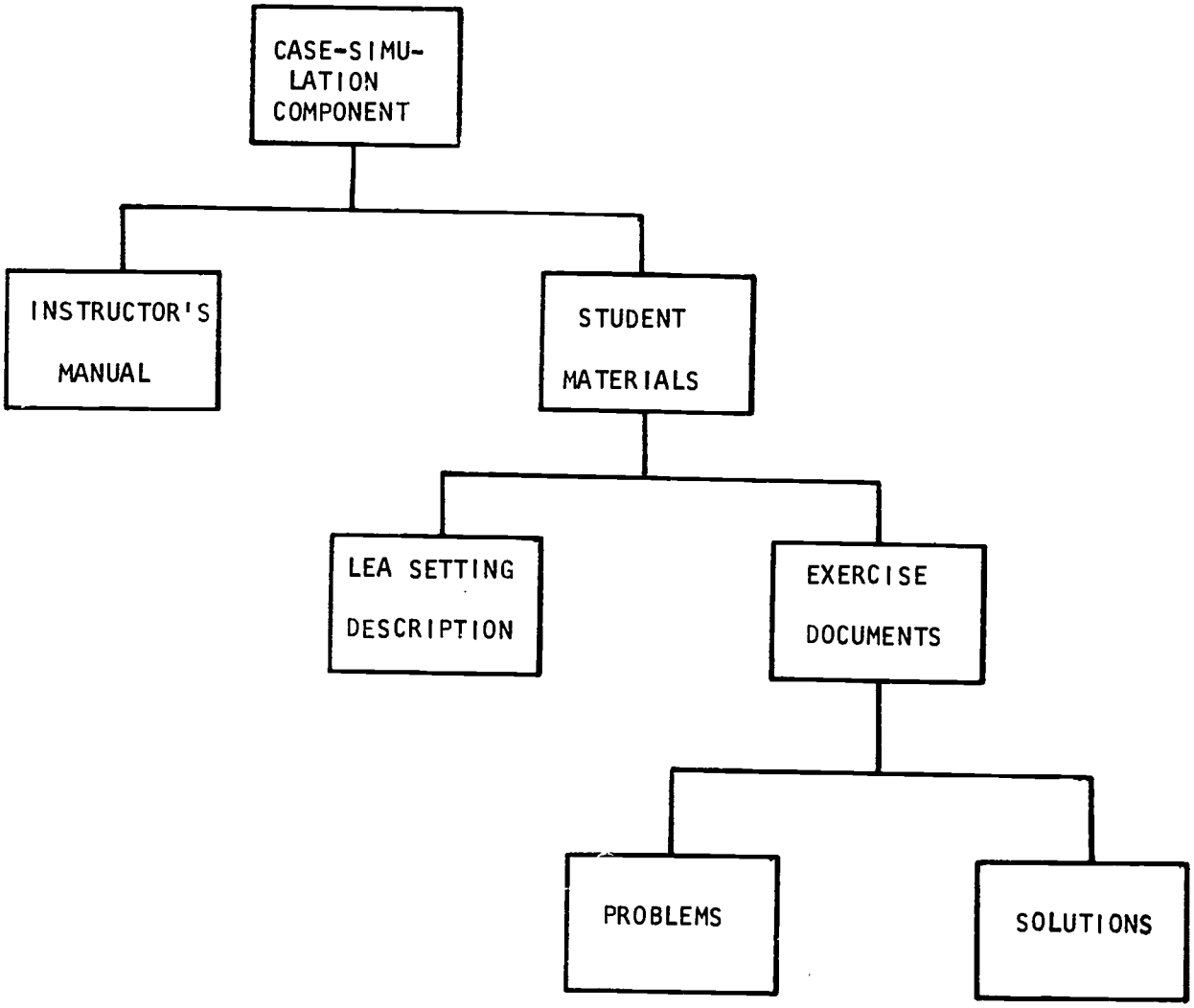


Figure 6. Case-Simulation Component

IV. SAMPLE LESSON: LESSON 1, ORIENTATION PACKAGE

BUILDING CONVICTION

PROJECT MANAGEMENT ORIENTATION COURSE
CONTRACT BY RBS, INC.
PHILADELPHIA

LESSON 1: BUILDING CONVICTION

Introduction to LEA Project Management Capability

The objective of this orientation course is to introduce you to the concept of project management and project management capability. You will learn about the payoff or benefit to the local school when it adopts project management. You will also learn of some limitations for this project management capability. Succeeding lessons of this course will deal with organizational settings, some of the relationships between projects and the functional departments of the school district in carrying out its educational role. A local school can obtain a management capability for dealing with the complexity of federally funded projects and locally funded projects if facilitating organizational pattern and administrative procedures are used. An individually tailored pattern can be designed, adopted and executed. All parties performing contributive functions need to become committed to the successful operation of the new pattern.

Student Activity: Turn on the slide projector and exhibit slides 1 through 7 as indicated by the slide number symbol written into the text.

Project

What is a project?

Slide 1

The concept of a project is defined by certain of its characteristics. Educational projects are those activities in a school setting which:

Slide 2

are goal oriented, that is, the activity is aimed toward some defined goal;

Slide 3

have at the time of planning some uncertainty about the path leading toward the end product;

Slide 4

deliver some definable end product;

Slide 5

have a time schedule that includes a start date and a completion date;

Slide 6

develops the end product within a cost allocation;

Slide 7

and accomplish the goal within a designated performance level. To tighten the concept of project we can contrast it with those activities in a school which are not projects. The established curriculum of a program in a school which continues in operation time after time is not considered a project. A program which does not have a specific completion time and where the costs are not examined against a performance criteria but simply compared to a budgeted amount for operating the program is not a project. Functional activities such as accounting, payroll, cafeteria operation, or the activities of the various teaching departments are not projects.

Student Activity: Turn off slide projector.

A project then, has a specified goal, has uncertainty about how it is to be achieved, will have an end product, has a start date, a completion date, a cost limit and a level of performance for acceptability.

Occasionally, educators ask, "What's so good about a project rationale for viewing our activities?" To answer for the "good" of a project rationale is to answer the question, "Has project management been successful?"

There are many examples in industry or government of projects resulting in successful completion of a complex goal. In such cases, the major contributing factor was the use of project management as a tool. For example, the Polaris Missile Program which placed deterrent missiles aboard submarines of the United States Navy was treated as a special project within the Department of Defense. Admiral Raburn was put in charge of this project which started in 1957. He was given authority to select his staff from any government agency. He was able to cross functional lines of the Federal Government to assemble resources. His planning group established a goal, worked out missions and tasks, developed a time schedule, and planned the activity. They developed a new management tool to manage the total complex activity called PERT, an acronym for Performance Evaluation and Review Technique. This technique subsequently has been adapted to many other disciplines as an excellent management tool. The Polaris Planning Staff continually reviewed the effort, evaluated their progress, and revised the plan. They completed their project in three years instead of six years which was originally allocated.

Another example is the Apollo Project which is a part of the overall NASA Space Program. Sam C. Phillips was put in charge. He assisted in the selection of a staff from among the NASA group and the astronaut team. This

project had as its goal former President Kennedy's objective of putting a man on the moon prior to 1970. This staff planned the various missions, established a time schedule, reviewed, evaluated and modified their plans to accomplish the goal. As we all know this project did succeed in its goal.

Another example is the construction of the world fair sites. Each of these was treated as a project. Specifically these were the 1964 New York World's Fair, the Exposition in Toronto, and Disney's Florida Disney World. The latter is scheduled to open in October 1971. These are examples of activities which are goal oriented, have start and stop dates, programmed costs, schedules, reviews, and management techniques all of which are aimed at the accomplishment of a goal.

A final example is product development in industry. One is Chevrolet's "Vega," a small car entry into the market scheduled for the year 1970. A project manager obtained his staff from the parent company. This project team made plans, established a target date, performance standards, reviewed, evaluated, and they put the product on the market at the target date.

Student Activity: Using an available newspaper or a weekly news magazine, find a project described in a news article as differentiated from a non-project which is without a goal, without a specified stop date and without planned evaluation and performance measures. Consult with a discussion leader or a knowledgeable contemporary on the appropriateness of the article selected.

There are also some good examples of project management in the educational field. Project management here is most often identified with requirements found in federal legislation such as the Elementary and Secondary Education Act of 1965 which became Public Law 89-10. A specific section, Title I (Financial Assistance to Local Education Agencies for the Education

of Children of Low Income Families) specifies a requirement for a plan, periodic evaluation, review and reporting of the activity. There is usually a termination date for the project. Another example is the Northern Virginia Technical College where a grant was provided to assist in developing the steps in planning, constructing, equipping and furnishing the physical plant of the college as well as those intellectual factors relevant to constructing a curriculum, detailing course content, writing a catelog and the securing of a faculty to instruct the first 500 students enrolled. PERT was a planning tool used there. Another example of an education project occurred at the University of Toledo dealing with an educational specification for a comprehensive elementary teacher education program. The work was performed under the sponsorship of the U. S. Department of Health, Education and Welfare. The activity, which included designing educational specifications, was treated precisely as a project, e.g. had a certain goal, developed the specifications in a certain time, and submitted a final report on October 1, 1968. The project was completed within a budgeted cost and at an established level of acceptable performance. A general educational example is the construction of a new building. This activity is a project where one principal or potential principal is assigned as project director and the goal becomes, "the building will be ready for occupancy by a certain date and within certain cost limitations and to a certain standard of acceptance."

Student Activity: Using an educational, professional, or news magazine, find an educational project described therein. Consult with a discussion leader or a contemporary as to the appropriateness of your choice.

Up to this point an attempt has been made to bring you to an awareness level of the definition of an educational project. It is believed that you could now distinguish a project from a non-project in your educational setting.

Management of Projects

The management of a project has additional characteristics and techniques available to those described for a project itself. These characteristics are:

1) Projects have project directors, sometimes called managers, whose job begins in the project planning and ceases with project termination whereas activities which are non-projects have program coordinators, also called supervisors, administrators, or directors whose job exists in spite of the status of particular programs.

Student Activity: Turn on the slide projector and exhibit the slides as indicated

Slide 8

2) The role of a project director involves duties or actions such as:

Slide 9

Planner and integrator of the activity,

Slide 10

The evaluator of the process,

Slide 11

The decision maker of the process,

Slide 12

And the implementor of decisions.

Slide 13

3) The project management missions can be grouped into four phases of operation.

Slide 14

a. The planning phase includes the definition of the project, the detailed planning for work or tasks, determining schedules, cost of materials and manpower.

Slide 15

b. The implementation phase is when the equipment, personnel, and materials are acquired so that the project can begin.

Slide 16

c. The operational control phase consists of those activities and efforts which are aimed at the accomplishment of the project goal; and,

Slide 17

d. Termination includes those activities or efforts dealing with ending of the project subsequent to completion of the goal.

Slide 18

4) There are various project management techniques which are:

Slide 19

a. Time scheduling;

b. Fund allocating;

Slide 20

c. Resource allocating;

d. Planning specific work and scheduling actions;

Slide 21

e. Responsibility delineations;

f. Evaluation and review;

Slide 22

g. Directing others;

h. Controlling.

Student Activity: Turn off slide projector. At this point the attendees are to be given a list of descriptive activities which occur in a school setting. The instructions are, "You are to select those which are projects and those which are non-projects." List A follows:

LIST A

1. The elementary mathematics program as identified by the K through 6 printed workbook material and textbooks.
2. A committee action directed to make a detailed investigation of the need for an electronic computer data processing system forthe school with the recommendation to be reported by July 1.
3. The staff effort focused on planning, making arrangements for, and conducting the second semester adult education program where plans are to be approved by the Superintendent on or before December 1.
4. A committee to investigate and report by September 1, selection of a textbook for the 9th grade science program.
5. The staff activity involved in accounting for expenses within the various appropriation categories.
6. A group composed of administrative staff and citizens of the Advisory Committee who are to develop a program and to conduct voter-orientation meetings for the purpose of getting an approval for a bond or operating levy at the May primary election.
7. The group of coaches successfully conducting the inner-scholastic athletics for the school.
8. The administrative staff assigned responsibility to develop procurement policies and selection criteria for acquisition of buses, these policies to be reported prior to a specific date.
9. The foreign language education program operated by the language teacher at the high school.

Some activities exist in an LEA which are on-going and could be re-oriented as projects. Some of these are: curriculum selection committee, school construction program, the development and initial operation of a gymnastics team or dramatics club. Thus, it is possible to re-orient many school activities as projects. However, there are a few questions that are asked. Why change regular activity into project activity? What benefit would occur to the LEA for this re-orientation? The answers to these questions should be adequately covered in the next few paragraphs.

There are a number of important advantages for using project management as a total or near total activity in an LEA. First, thinking of an activity as a project forces the LEA to ask, "What do I want to obtain? How do I want to get it? What are the possible methods of performance? What is not to be included? What are the milestones?" and finally, "What is to be delivered?" When the LEA focuses upon the answers to these questions they are examining in detail the elements of a program in terms of its goal rather than permitting the perpetuation of activities that may have ceased to meet a need. In this manner the LEA total efforts are focused: (a) on the goal; (b) on plans which detail the time sequence for various activities; (c) on the plans for allocating resources; (d) on specific performance; and (e) on an orderly, timely control of the effort by comparing it with the planned effort. When the total school operation is committed to such an organized focused effort there is likely to be a higher probability of accomplishment of the activity and also a knowledge of the costs for the activity. The accomplishment of planned goals, with cost knowledge, could improve the ability to perform a public relations

function to the community on the school operation. A disadvantage to project style management is the requirement for top level management to delegate authority and decision making to a greater number of subordinates even though the superintendent retains overall responsibility and accountability.

There are some limitations connected with the installation of project management in the LEA. For one, project management cannot be applied to all activities of the LEA because some activities are extremely difficult to identify with a goal, a start and stop time, and an end product. As a consequence both a functional and a project management system would be required which is somewhat more complex than either management type singly. Secondly, it is difficult to obtain well qualified project managers for each project exactly when needed. Thirdly, the success of projects within an LEA is related to the ability of the many managers.

In summary, project management can be used widely within the LEA to direct many activities of the LEA toward an overall goal. Project management could spotlight resource needs for the support of each segment of the LEA. This could also strengthen the evaluation of segments of the LEA in terms of performance. Extensive use of project management would allow for an examination of the deviation of the operations as compared to the plans. It could also pin-point problem areas of those specific segments which are reducing the overall achievement of the educational goal. The gain derived from the management of each project in an LEA could be substantial in terms of clear goal statements, better resource allocation, a significant level of evaluation, timely corrective action for problems and actual observable achievement.

Student Activity: The attendee can select from a given list the LEA activities which would be applicable to project management and would give a possible LEA gain if they were treated as projects. For each project selected tell why it was selected.

Student Activity: Turn on the slide projector and exhibit the slides as indicated

Public Relations Benefit of Project Management

Slide 23

The public education system as exemplified by our respective schools has been under increasingly severe attack.

Slide 24

Our schools have not been very successful in informing the public on the nature of our educational goals. The goals often come out rather fuzzy and ill defined. We end up putting out a community report which tells how many students are enrolled, how many employees we have, how much money we spend per student, how many new classrooms we have built, etc. But these are all input measures. Our schools should not have as a goal occupying students, employing persons, spending money or building classrooms. If we use project management to a rather advanced degree we can focus a little better on goals, we can relate costs to the achievement of those goals and we can use the project reports to substantiate our efforts.

Slide 25

This possibility is realized when the total LEA effort is separated into

the appropriate segments and treated as projects where the cost of each segment is capable of being analyzed. (Each segment has its own specified goal, has a start and stop time, is allocated certain resources, and is periodically reviewed to determine the performance related to the goal.)

Slide 5-G in Expected from Project Management Capability

If this activity is summed across all appropriate segments of the LEA the implication is that the total school system operation is directed in a desired fashion toward an overall goal(s).

Slide 26

The activities which are considered projects (and thus produce end products) would assist in the public relations function with the community because concrete accomplishments would be identified.

Slide 27

A capability of this type would allow for those segments which can be considered projects to have cost effectiveness evaluations. If the capability at a given level of use in a school system proves successful, the school system can use those experienced project managers subsequently to direct more activities or segments of the LEA toward project management.

As a summary, the project management capability for local school offers distinct advantages in focusing the various activities upon (1) clear goal statements, (2) detailed plans concerned with time, resources and performance, and (3) orderly review and control of the effort in comparison to the plan.

FORM A

1. List by number those activities described in LIST A which appear to be appropriate to project management (not all spaces need to be used).

_____ _____

_____ _____

_____ _____

2. List those concepts (elements) of the activities selected as projects which you used in discriminating projects from non-projects, (not all spaces need to be used).

_____ _____

_____ _____

_____ _____

3. List the necessary elements missing from those activities given which you considered as non-projects. (Identify by number a non-project and then proceed; not all lines need to be used).

_____ _____

_____ _____

_____ _____

_____ _____

4. Select one of the projects from LIST A and then state the duties or actions of the person or persons serving the role of project director of that activity (not all spaces need to be used).

_____ _____

_____ _____

_____ _____

Note: Slide A indicates the generally expected response for questions 1, 2, & 3.

LIST B

1. The design and operational procedures for an adult education program for the next school year.
2. The investigation into, including results of a teacher survey, and a design and implementation of a grade card procedure for the next school year.
3. The inner-scholastic athletic program in operation for the next school year.
4. Administrative procedures and plan for the procurement of office and custodial supplies of the next school year.
5. The determination of available job positions, the design plan and operation of teacher recruitment for the next school year.
6. The conceptualization of a plan, writing of a proposal, and submitting it to a funding agency for a teaching innovation in the school for the next school year.
7. The planning, obtaining necessary resources, and actual operation of a team teaching situation in the 7th grade as a pilot project for the next school year.

FORM B

1. List by number those activities described in LIST B which appear to be appropriate to project management (not all spaces need to be used).

_____ _____ _____

_____ _____ _____

_____ _____ _____

2. Write a projected gain to an LEA for each activity selected as a project. (Identify each by number.)

_____ _____

_____

_____ _____

_____

_____ _____

_____

_____ _____

_____

_____ _____

_____

Note: Slide B indicates the generally expected response for question 1.