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ABSTRACT

This institute was held at Ohio State University, October 21-November 1, 1968 to fulfill two main purposes: (1) to provide an opportunity for personnel in state departments of vocational education to become knowledgeable in the concepts, methods, and practice of Planning, Programming, and Budgeting Systems (PPBS), and (2) to test a package of PPBS training materials designed for use in training state and local vocational educators. The 2-week training institute was attended by 47 participants from 40 states, representing a variety of leadership roles within vocational education. The main instructional topics covered during the institute were: overview of PPBS, the planning process, program budgeting, programing and management control, analysis of educational benefits and costs, data requirements, and political and organizational aspects. Evaluation instruments were used to measure participants' understanding and to obtain recommendations. Related documents are available as ED 032 417 and ED 032 418 found in Research in Education, January 1970. (CH)

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NATIONAL DEVELOPMENT INSTITUTE IN PLANNING--PROGRAMMING--BUDGETING--SYSTEMS

Joseph H. McGivney
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Columbus, Ohio 43210

January 1970

U. S. DEPARTMENT OF
HEALTH, EDUCATION AND WELFARE

Office of Education
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U. S. DEPARTMENT OF
HEALTH, EDUCATION AND WELFARE

Office of Education
Bureau of Research

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SUMMARY

National Development Institute in Planning, Programming, and Budgeting Systems

The purpose of this institute was to provide a means for the development of a cadre of vocational education personnel in state departments of vocational education knowledgeable in the concepts, methods and practice of Planning, Programming, and Budgeting Systems (PPBS) by improving their understanding of the conceptual and methodological bases of PPBS, and to test a package of PPBS training materials which can be used in training state and local vocational educators. The specific goals of the institute were:

1. To familiarize the participants with PPBS and related systems.

2. To develop the PPBS conceptual and methodological abilities and skills of key leadership personnel in state departments of vocational education to a level sufficient to permit them to provide immediate direction in installing PPBS in their states.

3. To motivate participants to continue to study and apply the concepts of PPBS to their states.

4. To provide an opportunity for SDVE administrative personnel to share common problems and to search for solutions.

5. To test and evaluate PPBS training materials currently being developed at The Center for Vocational and Technical Education.

Forty-seven leaders in state departments of vocational education, nominated for participation by their respective state administrators and selected by a screening committee on the basis of existing and/or prospective operational responsibility for planning, programming, and budgeting, were invited to participate in the two-week training institute held at The Ohio State University from October 21, 1968 to November 1, 1968.

The institute was coordinated by The Center for Vocational and Technical Education and involved many resource and faculty personnel trained in PPBS in designing the program, preparing training packages, teaching at the institute, and assisting participants during the workshop sessions. Lecture-discussion and workshop sessions were allotted equal time during the institute. The main instructional topics covered at the institute were:

1. Overview of PPBS
2. The Planning Process
3. Program Budgeting
4. Programming and Management Control
5. Analysis of Educational Benefits and Costs
6. Data Requirements
7. Political and Organizational Aspects

Three pre-post evaluation instruments were used to measure gain in participant knowledge, change in interaction, and the participants' evaluation of the institute. Analysis of these instruments revealed that there was a significant gain in the participants' understanding of PPBS and that the expected number of future communications between participants was substantially greater than the number in the previous year. The participants stated that more institute pre-planning was needed with respect to the case problem and other training materials. They recommended that future institutes be limited to one week and emphasize workshop methods. In reference to PPBS Institutes, the following recommendations are made:

1. The length of future PPBS institutes should be limited to one week.

2. Future PPBS institutes should include realistic case problems and emphasize workshop methods.

3. Future PPBS institutes should deal only with specific aspects of PPBS, not with the totality.

4. Future PPBS institutes should have a greater portion of their budget allocated to developmental activities and consultant fees.

5. Additional institutes in PPBS and related concepts should be conducted for administrative personnel in state departments of vocational education.

INTRODUCTION

Need for Institute

In late February and early March 1967, The Center convened a National Conference on the Emerging Role of the State Department of Education. Considerable attention was focused on the need for state departments to initiate a more rational system for planning, programming and budgeting.

Recent developments sharply underscore the fact that top policy makers on the national, state and local levels are committing their jurisdictions to a planning--programming--budgeting--system (PPBS). In addition to the federal government, the States of New York, Wisconsin, California, Michigan, Vermont and others have or are in the process of adopting the PPB System.

To insure that policy makers are fully informed of the merits of vocational programs, vocational personnel require training in PPBS to have an understanding of the concepts, techniques, advantages and shortcomings of PPBS to use it as an effective tool in planning and allocating resources for vocational education programs. To the extent that state department vocational education (SDVE) personnel do not understand the "rules of the game" as well as the advantages and shortcomings of PPBS, they may find themselves at a disadvantage when competing with other programs for money.

Against this background it was assumed that PPBS would continue to be in the vanguard of strategies useful in decision making at the national, state, and local levels. Because of the recent adoption of PPBS concepts and techniques by policy makers, there are relatively few persons possessing the necessary skills for the successful implementation of a PPB System.

Accordingly, a national PPBS training institute for state department personnel was designed to provide the participants with relevant conceptual and practical knowledge and help alleviate this shortage of skills.

Goals of Institute

The purpose of the institute was to develop a cadre of personnel in state departments of vocational education who would be knowledgeable in the concepts, methods, and practices of Planning--Programming--Budgeting-- Systems. The specific goals of the institute were:

1. To familiarize the participants with PPBS and related systems.

2. To develop the PPBS conceptual and methodological abilities and skills of key leadership personnel in state departments of vocational education to a level

sufficient to permit them to provide immediate direction in installing PPBS in their states.

3. To motivate participants to continue to study and apply the concepts of PPBS to their states.

4. To provide an opportunity for SDVE administrative personnel to share common problems and to search for solutions.

5. To test and evaluate PPBS training materials currently being developed at The Center for Vocational and Technical Education.

METHODS

Participant Selection

The criteria for participant selection was based on the following rationale: (1) Since the installation of PPBS requires strong endorsement on the part of the chief administrative officer, it followed that state directors and/or assistant directors receive first priority in the selection process; and (2) Since the responsibility of implementing PPBS would probably fall on the administrative staff, the SDVE personnel presently holding planning and budgeting positions received the next highest priority in the selection of institute participants.

Initial contact with SDVE directors was made by means of the time selection form, Appendix A. This letter informed them of the institute and solicited their opinions with respect to the most desirable time to conduct the institute.

The process of participant selection began with sending SDVE directors a nomination form, Appendix B, and performing the initial selection on the basis of the previously mentioned criteria. Application forms, Appendix C, were sent to the selected nominees and the final selection made when the completed applications were received. The participants were then notified of their status: (1) Acceptance with travel and subsistence, (2) Acceptance without travel and subsistence, (3) Alternate, or (4) Rejection. The listing of institute participants is given in Appendix D.

Institute Content and Schedule

Simultaneous with the partcipant selection process, a series of planning conferences was held to evaluate proposed institute schedules and training materials. Conferences were held on July 12, July 21 and 22, and September 9, 1968. In addition, a meeting of the institute faculty was held on September 25, 1968, to finalize the faculty responsibilities, institute schedule and it's content. These conferences involved persons from The Center for Vocational and Technical Education, The Ohio State University, several state divisions of vocational education, Department of Defense, and other universities.

Based on the recommendations of the planning conferences, the institute contained a mixture of lecture and workshop sessions. As shown in the institute schedule, Appendix E, the mornings were devoted primarily to large group lecture-discussion sessions on the concepts of PPBS. The afternoon sessions were aimed at developing a practical knowledge of PPBS through small group work on the case problem.

The institute faculty was composed of persons with a wide range

of experience in PPBS and academic disciplines. A complete listing of institute consultants is given in Appendix F.

Edited transcripts of presentations by Samuel C. Kelley, Laurence E. Lynn, Laurence E. Olewine, John P. Shea, and B. Dean Bowles, and abstracts of presentations by Otto P. Legg, Frederick K. Hiestand, Allan P. Lichtenberger, and Thomas J. Czerwinski are included in Appendix G. The essence of the contributions by Joseph F. Malinsky, Joseph H. McGivney, and William C. Nelson are being included in the following two Center publications:

McGivney, Joseph H. and Nelson, William C., Planning-Programming-Budgeting-Systems for Educators,

Volume I: An Instructional Outline

Volume II: A Case Problem

(Columbus, Ohio, The Center for Vocational and Technical Education, August, 1969).

In addition to the contributions of the institute faculty, the participants received handout materials, Appendix H, which included theoretical descriptions of PPBS, applications of PPBS, and other references. These materials supplied the participants with an initial reference library which they can supplement at their own convenience.

FINDINGS AND ANALYSIS

Characteristics of Participants

The characteristics of institute participants is shown in Table 1. Seven regions were represented, although nearly fifty percent of the participants were from two regions. During the process of participant selection, an agreement was made with the directors of PPBS Institute held in Oregon to accept participants from the eastern half of the country while the Oregon institute accepted applicants from the western part. This agreement partially explains the regional distribution of participants.

Nearly all the participants were members of their respective state divisions of vocational education. Only fourteen percent were not in this category.

Seventy-seven percent of the participants were state directors or assistant directors, budget or fiscal officers and planning officers of the state division of vocational education. Fiscal and budget officers had the largest single representation with thirty percent of the total group.

Analysis of participants age and employment experience revealed that the majority of participants were from thirty to forty-nine years of age, had from one to nineteen years of educational experience, and two to nine years of non-educational work experience.

Fifty-eight percent of the participants were trained in an educational discipline with eighteen percent in vocational education. None of the participants were trained in the disciplines deemed valuable for PPBS and/or systems analysis such as statistics, economics, mathematics, or computer sciences, although thirty-three percent were trained in administration.

Results of Evaluation Instruments

All evaluation instruments were given to the participants on the first morning of the institute and again at the end of the institute. Not all of the participants completed the post-test, therefore, the total number of responses to pre-tests and post-tests are not equal.

The purpose of the cognitive test, Appendix I, was to assess the gain in knowledge exhibited by the participants. The results of this test are given in Table 2. As measured by the objective test, the participants did gain knowledge of PPBS and related concepts. Specifically, the percentage of correct answers increased from sixty-three to seventy-three percent in the true-false portion and from sixty-five to seventy-eight percent in the multiple choice section. The poor performance of participants on some specific questions was probably due to a lack of question clarity, rather than lack of knowledge as there was insufficient time to properly validate the instrument.

As shown by the pretest results, the participants had a good base of previous knowledge. This underestimation of previous knowledge may have led to the content of the institute being too elementary for many of the participants and to the small degree of change in test scores. Although the improvement in scores was not large, the differences were significant at the ten percent level. The computed t-values for the true-false section and the multiple choice section were 1.85 with twenty-two degrees of freedom and 2.72 with eighteen degrees of freedom, respectively.

TABLE 1. Characteristics of Institute Participants*

Region		Participants (Percent)
I	Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont	13
II	Delaware, New Jersey, New York, Pennsylvania	13
III	Kentucky, Maryland, N. Carolina, Virginia, West Virginia, D.C.	28
IV	Alabama, Florida, Georgia, Missippi, S. Carolina, Tennessee	17
V	Illinois, Indiana, Michigan, Ohio, Wisconsin	21
VII	Arkansas, Louisiana, New Mexico, Oklahoma, Texas	6
IX	Alaska, Arizona, California, Hawaii, Nevada, Oregon, Washington	2
		100

Institution	
University	2
Area Vocational-Technical School	5
State Department of Vocational Education	86
Other	7
	100

Present Position	
SDVE Director or Assistant Director	21
SDVE Fiscal or Budget Officer	30
SDVE Planning Officer	26
SDVE Supervisor	2
SDVE Assistant Supervisor	5
Local School Administration	2
State Central Budget or Planning Agency	2
Other	12
	100

Age (Years)	
Twenty to twenty-nine	7
Thirty to thirty-nine	30
Forty to forty-nine	42
Fifty to fifty-nine	16
Over sixty	5
	100

TABLE 1 (continued)

	Participants (Percent)
Educational Work Experience (Years)	
One to nine	40
Ten to nineteen	30
Twenty to twenty-nine	25
Thirty to thirty-nine	5
	100
Non Educational Work Experience (Years)	
One to nine	67
Ten to nineteen	28
Twenty to twenty-nine	5
	100
Academic Discipline	
Educational Administration	21
Vocational Education (general)	9
Vocational Education (specific areas)	9
Education (all other areas)	19
Business Administration	12
Accounting	5
Psychology-Sociology	9
Political Science	2
Other	14
	100

* Application form is given in Appendix C.

TABLE 2. Results of Objective Tests*

	Percentage Correct	
	Pretest	Post-Test
True-False Section		
1. Centralization	55	90
2. Complete Information	26	44
3. Wages equal benefits	51	54
4. Eliminate subjective opinions	96	98
5. Demard equals quantity	32	39
6. Goal is to save money	89	100
7. Average versus incremental	66	61
8. Benefits versus costs	72	85
9. Effect of interest rate	62	90
10. Scientific management	23	27
11. Politics, priorities and budgets	96	100
12. Existing data is sufficient	85	93
AVERAGE	63	73
Multiple-Choice Section		
1. Data sources	51	68
2. Critical aspect of PPBS	72	76
3. Program Budget Content	85	90
4. Program budget time period	74	98
5. Resource allocation	70	90
6. Budget history	79	100
7. All or partial data	74	80
8. Proper rate of interest	60	73
9. Fixed versus variable costs	68	80
10. Duties of a planner	15	20
AVERAGE	65	78

* Objective test is given in Appendix I.

The purpose of the interaction instrument, Appendix J, was to reveal the degree of communication between participants during the past year and too assess the change in expected number of communications during the next year. Each participant was asked to respond with respect to the frequency of communication with each of the other forty-six participants. Therefore, each participant responded forty-six times and there was a total of 2,116 responses in the pretest. Only forty-five participants completed the post-test yielding a possible total of 1,936 interactions. Presented below in Table 3 are the participant responses to the interaction tests. The participants indicated on the pre-test that only eight percent of the possible communications had occurred during the past year. This means that the average participant had only communicated to approximately four other participants in the previous year. Many of these communications may have occurred among participants within the same state division which implies that the actual level of interstate communication was significantly lower than stated above. As a result of meeting their counterparts during the institute, the expected number of communications increased to thirty percent of the possible number. The average participant expected to contact thirteen other participants at least once during the next year.

Responses of the participants to selected questions from the subjective questionnaire are shown in Table 4. The complete questionnaire is included in Appendix K. As the questions were open-ended, a great variety of responses were made and Table 4 is an attempt to summarize them.

The case problem used in the workshop sessions received generally unfavorable comments with respect to computations and lack of detail, but also appears to have a large potential value in future institutes, if properly refined.

Another frequent response of participants suggested that future institutes in PPBS be limited to one week and not attempt to cover the universe of PPBS. Also, any future PPBS institutes involving this group of participants should emphasize practical problem solving workshops on specific aspects of PPBS such as planning, programming, budgeting, data sources and information systems, and its political aspects.

The participants emphasized that more PPBS was needed in the preparation and organization of the institute with respect to materials, presentations, case problems, and faculty selection. This response indicates a possible need for allocating a greater portion of institute funds to developmental activity and consultant fees when the institutes deal with concepts and techniques which are relatively new and difficult.

The final portion of the evaluation is being undertaken at this time. It consists of a follow-up questionnaire (Appendix L) which is aimed at determining any long-range or permanent effects of the training institute. The results of this evaluation will be sent in as a supplement to this final report.

TABLE 3. Results of Interaction Tests*

Frequency of Communication	Interaction Among Participants During the Last Year: Number	Percent
None	1,947	92
One to three	103	5
Four to seven	11	0
Eight or more	55	3
Possible	2,116	100

	Expected Interactions Among Participants During the Next Year: Number	Percent
None	1,356	70
One to three	415	22
Four to seven	66	3
Eight or more	99	5
Possible	1,936	100

*Interaction instruments are in Appendix J.

TABLE 4. Responses to Selected Subjective Questions*

	Pre-Test	Number of Responses
1 and 2	What do you expect to gain from this Institute? What would you like to receive from this Institute?	
	* A detailed understanding of PPBS	29
	* The ability to implement PPBS	21
	* An exchange of ideas	6
	* Orientation to 1968 Amendments, aid in preparing projected activities	2
		58

	Post-Test	
7.	What did you gain from this Institute?	
	* Knowledge of PPBS: concepts, operation, and limitations	30
	* The exchange of ideas with other participants	12
	* A motivation and references for continued study	7
	* An understanding of planning and its value	5
	* An understanding of benefit-cost analysis	4
	* A realization to political aspects of PPBS	4
	* A realization of the importance of a data bank	4
		66
8.	What specific aspects of this Institute were the most valuable to your work?	

*	Political Aspects of PPBS	11
*	Benefit/Cost Analysis	10
*	Programming and Management Control	7
*	Program Budgeting	7
*	Planning Process	6
*	Workshop Sessions	5
*	Lecture Sessions	4
*	Role of PPBS in USOE	2
*	Data Needs: Local, State and Federal	2
*	State Presentation	1
		55

10. If you were to come to another PPBS Institute, what specific subjects or topics should be emphasized?

*	A realistic, well structured Case Problem	13
*	The planning process and techniques	7
*	Program Budgeting	7
*	Sources of data for PPBS	5
*	The political aspects of PPBS	5
*	Benefit-Cost and Systems Analysis	4
*	An exchange of state ideas	3
		44

11. What are your suggestions for improving the curricula and instructional method for subsequent Institutes in PPBS?

* More PPBS in preparation and organization of Institute with respect to materials, presentations and case problems	ALL
* A more detailed and structured Case Problem	17
* An advance materials package and complete set of lecture materials to be given to participants	16
* Limit Institute to one week	11
* A prepared, knowledgeable leader for small group work sessions	10
* Proper usage and preparation of projectuals	7
* A faculty which includes more practicing PPBS's	4
* One week each for Planning, Programming, Budgeting, and Systems Analysis	1
	66

12. What might be the benefits and costs of conducting PPBS regional workshops?

* Greater participation	11
* Good idea, if three to five days in length	9
* More uniformity and relevance	6
* Good idea	6
	32

* Subjective tests are in Appendix K.

CONCLUSIONS AND RECOMMENDATIONS

PPBS Institute

With respect to the institute goals, the results of the evaluation instruments indicate that the institute achieved goals one through four to a satisfactory degree. These were:

1. To familiarize the participants with PPBS and related systems.

2. To develop the PPBS conceptual and methodological abilities and skills of key leadership personnel in state departments of vocational education to a level sufficient to permit them to provide immediate direction in installing PPBS in their states.

3. To motivate participants to continue to study and apply the concepts of PPBS to their states.

4. To provide an opportunity for SDVE administrative personnel to share common problems and to search for solutions.

While the gains in cognitive knowledge acquired by the participants were significant, it is perhaps more important that a group of forty-seven vocational education administrative personnel was granted the opportunity to meet and discuss mutual problems, the first time for the majority of the participants.

The institute also achieved the fifth goal, which was to test and evaluate PPBS training materials currently being developed at The Center for Vocational and Technical Education. These materials, listed in Appendix M, are scheduled to be published during the Spring, 1970, by The Center.

In reference to PPBS Institutes, the following recommendations were made:

1. The length of future PPBS institutes should be limited to one week.

2. Future PPBS institutes should include realistic case problems and emphasize workshop methods.

3. Future PPBS institutes should deal only with specific aspects of PPBS, not with the totality.

4. Future PPBS institutes should have a greater portion of their budget allocated to developmental activities and consultant fees.

SDVE Institutes

Based on the responses to the interaction pre-test, there appears to have been a lack of institutes or workshops where administrative personnel, budgeting, and planning officers and assistant directors, have the opportunity to meet and exchange mutual problems and solutions. To strengthen the competency of these decision-makers in state divisions, both regional and national conferences in the areas of decision making techniques and processes, information systems, politics of education, and other current problems would be valuable.

APPENDIX A--TIME SELECTION FORM

Date

Name
State Director of Vocational Education
Address
City, State

Dear _____:

We are planning to conduct a two week seminar in Planning, Programming and Budgeting Systems (PPBS) in late summer or early fall. The program we are developing is aimed at improving the conceptual, technical and operational skills and abilities of vocational education state department personnel who have primary responsibility for program budgeting, planning, fiscal control of vocational education activities at the state level.

It is our belief that most states place heavy time demand on their fiscal and budgetary staff during the summer and early fall because the school and fiscal year ends on or about June 30, and hence state and federal aids must be paid, enrollments tabulated, preparation of future budgets undertaken and completed, etc.

Against this background, we ask for your assistance in helping us more adequately schedule for the two week training session in PPBS. Please let us know which of the following two week periods would be most desirable in permitting your fiscal and budgetary staff to attend the proposed institute. Please rank the two week periods in terms of the most desirable (1) second most desirable (2), etc.

August 19--August 30 _____
September 2--September 13 _____
September 16--September 27 _____
September 30--October 11 _____
October 14--October 25 _____
October 28--November 8 _____
Other two week period _____

Your assistance will be greatly appreciated.

Sincerely,

Joseph H. McGivney
Project Director and
Assistant Professor

JHM: js

APPENDIX B--NOMINATION FORM

NATIONAL PPBS INSTITUTE

NAME OF STATE

The Institute to be held by The Center for Vocational and Technical Education (at The Ohio State University in Columbus) will be held October 21 - November 1, 1968.

Please indicate your nominations for the above Institute in the following allotted space.

1. (State Director - 3 Days Only)
(NAME, ADDRESS AND TITLE)

2. (Program Planning Officer)
(NAME, ADDRESS AND TITLE)

3. (Fiscal Management-Budgeting Officer)
(NAME, ADDRESS AND TITLE)

4. (Other)
(NAME, ADDRESS AND TITLE)

5. (Other)
(NAME, ADDRESS AND TITLE)

6. (Other)
(NAME, ADDRESS AND TITLE)

7. (Other)
(NAME, ADDRESS AND TITLE)

RETURN ONE COPY OF THIS FORM TO THE OHIO STATE UNIVERSITY NOT LATER THAN JULY 23, 1968.

APPENDIX C--APPLICATION FORM

NATIONAL DEVELOPMENT INSTITUTE IN PLANNING,
PROGRAMMING, AND BUDGETING SYSTEMS (PPBS)

1. Name of Applicant: Mr.
Mrs.
2. Age_____ Miss_____
(Last) (First) (Middle)

3. Home Address:

Street_____ City_____
State_____ Zip Code_____ Telephone_____

4. Name of Institution or Agency Where You are Presently Employed:

_____

5. Institution Classification: (Check)

( ) University (Graduate)
( ) University of College (4 year)
( ) Community or Junior College (2 year)
( ) Technical Institute
( ) Area Vocational-Technical
( ) Technical High School
( ) High School-Comprehensive
( ) State Department of Education, Vocational Division
( ) Other
Please Specify_____

6. Business Address:

Street_____ City_____
State_____ Zip Code_____ Telephone_____

7. Present Position Functional Title:_____

8. Present Position Classification:_____

( ) State Administration (Superintendent)
( ) State Administration (Director - V.E.)
( ) State Administration (Fiscal and Budget)
( ) State Administration (Planning)
( ) State Supervisor
( ) Assistant State Supervisor
( ) Local School Administration (Superintendent of Assistant Superintendent)
( ) Teacher
( ) State Central Budget or Planning Agency
( ) Other

9. Present Position Duties:_____

_____

_____

_____

_____

_____

_____

10. Professional Education Employment Record. List experience in the field of education. (List most recent experience first and give the last four positions only).

Position	Institution	City	State	No. of Years

11. Non-educational Employment Record. List experience in business, indistry, government, military service, etc. (List most recent experience first).

Position	Institution	City	State	No. of Years

12. Formal Education. Include Ph.D., Masters, Bachelors, and Associate degrees. (List most recent degree first)

Institution	Degree	Year Received	Major Field

13. Briefly describe and explain your experiences (on the job, formal education, etc.), if any, with PPBS, Cost Benefit, Program Budgeting, Systems Analysis, etc., since 1965.

14. Date_____Applicant's Signature_____

Send application to: Admissions Committee
National Development Institute in Planning, Programming and Budgeting Systems (PPBS)
The Center for Vocational and Technical Education
The Ohio State University
1900 Kenny Road
Columbus, Ohio 43210

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APPENDIX E--INSTITUTE SCHEDULE

SUNDAY, OCTOBER 20, 1968

p.m.

3:00 - 10:00	Registration at The Archer House, Residence Halls, 2130 Neil Avenue, The Ohio State University, Columbus, Ohio

MONDAY, OCTOBER 21, 1968

a.m.

8:00	Registration at The Ohio Union
8:30	Orientation and Pretest Joseph H. McGivney
9:30	Coffee Break
9:45	Welcome to The Ohio State University John E. Corbally, Jr.
10:00	Welcome to The Center for Vocational and Technical Education Robert E. Taylor
10:15	Implications of the 1968 Vocational Education Legislation Otto P. Legg
10:45	Overview of PPBS Joseph H. McGivney
11:30	Lunch

p.m.

12:30	Overview (continued) Joseph H. McGivney
2:00	Coffee Break
2:30	Organization of Groups and Introduction of Case Problem Joseph F. Malinski
6:00 - 8:00	Hospitality Hour at The Ohio Stater Inn sponsored by Brodhead-Garrett Company

TUESDAY, OCTOBER 22, 1968

a.m.

8:00	The Benefits and Costs of Education William C. Nelson
9:30	Coffee Break
10:00	The Planning Process Samuel C. Kelley
11:30	Lunch

p.m.

12:30	Discussion of Case Problem, Step I Joseph F. Malinski
2:00	Coffee Break
2:30	Group Work on Case Problem, Step II Joseph F. Malinski
6:30	Banquet at The Ohio Union -- Defense Department Experience with PPBS Laurence E. Lynn

WEDNESDAY, OCTOBER 23, 1968

a.m.

8:00	Principles of Program Budgeting: Objectives - Means - Time Joseph H. McGivney
9:30	Coffee Break
10:00	Program Budgeting: A Wisconsin Case Frederick K. Hiestand
11:30	Lunch

p.m.

12:30	Administrative and Political Aspects of PPBS (Directors only) Joseph H. McGivney
12:30	The Planning Process and Introduction to Step III of Case Problem Samuel C. Kelley
2:00	Coffee Break

2:30	Post-Test (Directors only)
2:30	Group Work on Case Problem, Step III Joseph F. Malinski

THURSDAY, OCTOBER 24, 1968

a.m.

8:00	Programming and Management Control Laurence E. Olewine
9:30	Coffee Break
10:00	Programming and Management Control (continued) Laurence E. Olewine
11:30	Lunch

p.m.

12:30	Discussion of Case Problem, Step III Joseph F. Malinski
2:00	Coffee Break
2:30	Group Work on Case Problem, Step IV

FRIDAY, OCTOBER 25, 1968

a.m.

8:00	Data Needs: Local, State, and Federal Requirements Allan R. Lichtenberger
9:30	Coffee Break
10:00	Role of PPBS in The U.S. Office of Education Otto P. Legg
11:30	Lunch

p.m.

12:30	State Presentations Thomas J. Czerwinski
2:00	Coffee Break
2:30	Discussion of Case Problem, Step IV Joseph F. Malinski

MONDAY, OCTOBER 28, 1968

a.m.

8:00	Measurement of Educational Benefits and Costs John R. Shea
9:30	Coffee Break
10:00	Measurement of Educational Benefits and Costs (continued) John R. Shea
11:30	Lunch

p.m.

12:30	Group Work on Benefit-Cost Problem
2:00	Coffee Break
2:30	Group Work on Case Problem, Step V

TUESDAY, OCTOBER 29, 1968

a.m.

8:00	Discussion of Benefit-Cost Problem William C. Nelson
9:30	Coffee Break
10:00	Discussion of Benefit-Cost Problem (continued) William C. Nelson
11:30	Lunch

p.m.

12:30	Discussion of Case Problem, Step V Joseph F. Malinski
2:00	Coffee Break
2:30	Group Work on Case Problem, Step VI

WEDNESDAY, OCTOBER 30, 1968

a.m.

8:00	Data Requirements for Program Budgeting Joseph H. McGivney

9:30	Coffee Break
10:00	Data Requirements for Program Budgeting (continued) Joseph H. McGivney
11:30	Lunch

p.m.

12:30	Discussion of Case Problem, Step VI Joseph F. Malinski
2:00	Coffee Break
2:30	Group Work on Case Problem, Step VII

THURSDAY, OCTOBER 31, 1968

a.m.

8:00	Political Aspects of PPBS B. Dean Bowles
9:30	Coffee Break
10:00	Administrative and Organizational Aspects of PPBS Joseph H. McGivney
11:30	Lunch

p.m.

12:30	Discussion of Case Problem Step VII
2:00	Coffee Break
2:30	Post-Test and Final Group Work on Case Problem

FRIDAY, NOVEMBER 1, 1968

a.m.

8:00	Discussion and Final Reports of Case Problem Joseph F. Malinski
9:30	Coffee Break
10:00	Review of PPBS Joseph H. McGivney
11:30	Lunch

p.m.

12:30 PPBS: What's Next?
Faculty

APPENDIX F--INSTITUTE FACULTY

Professor B. Dean Bowles
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502 State Street
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Dr. John E. Corbally, Jr.
Vice President for Academic
Affairs and Provost of Ohio
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Mr. Frederick K. Hiestand, Chief
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Dr. Otto P. Legg
Director of Planning and Senior
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Planning Section
Planning and Evaluation Branch
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Deputy Assistant Secretary
of Defense for Economics and
Resource Analysis
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Mr. Joseph F. Malinski
Director
Program Planning and Development
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Director
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Oregon State System of Higher
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Dr. Joseph H. McGivney
Project Director and
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Project Associate
Programming, Planning, and
Budgeting Systems Institute
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Mr. Laurence E. Olewine
Director
Finance, Management, Education
and Information
Office of Assistant Secretary of
Defense (Comptroller)
The Pentagon
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Mr. Michale Timpane
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Organization and Administrative
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Division of Comprehensive and
Vocational Education Research
Bureau of Research
U.S. Office Education
Department of Health, Education
and Welfare
Washington, D.C. 20202

APPENDIX G--ABSTRACTS AND TRANSCRIPTS
OF PRESENTATIONS

Program Budgeting in Vocational, Technical and Adult Education District 13, Green Bay, Wisconsin

Abstract of Presentation by Mr. Thomas J. Czerwinski

The 1969 Budget of District 13 includes both a program budget and a line-item budget for several reasons. First, the board of directors were more comfortable seeing both the old and new methods simultaneously. Second, budgeting has three basic functions: (1) planning; (2) management decision-making; and (3) control and accounting. The line-item budget is still the best device for control and accounting where as the program budget facilitates the functions of planning and management decision-making.

The 1969 program budget included five levels of detail and identified each element by a five digit number presented in the following format:

Program Title	Allotment Code	1968 Estimate	To Continue Present Operations	Improve Quality of Instruction	Inno-vations	Total
	00000	$	$	$	$	$

Program budgeting was viewed as a management strategy to achieve the purposes of the district administration. One example of this is the movement of the expenditures for student counseling to three different elements: (1) student guidance and recruitment; (2) career planning and placement; (3) counseling and student activities. In this way, all the functions of

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Mr. Thomas J. Czerwinski is Assistant Director for Research and Development, District 13, Green Bay, Wisconsin.

counseling are emphasized, not just one.

In the 1969 budget, the multi-year aspects, manpower projections, and detailed output data were not included due to time constraints. These factors are scheduled to be included in the 1970 budget together with an evaluation of past performance.

In summary, an indicator of usefulness of program budgeting to management is illustrated by the fact that this budget was approved without any cuts in funds. PPBS can help vocational education compete with universities and academic high schools for public resources in addition to doing a better job of serving our clientele.

Program Budgeting: A Wisconsin Case

Abstract of a Presentation by Mr. Fred Hiestand

There were four major reasons for adoption of program budgeting in Wisconsin. First, both the Governor and legislature were very interested in PPBS due to the difficulties of understanding the line-item budget in terms of services provided by government. Private advisory and pressure groups, composed largely of businessmen, also favored a change in budgeting practices. Wisconsin had tested program budgeting in two departments prior to 1961 and the results were favorable. The department of administration was the fourth factor favoring the adoption of PPBS.

Other aspects discussed were the guidelines in the initial development, problems encountered, solutions to the probelms, adjustments made in the second PPBS cycle, and other formats for program budgeting. Most of these factors have been mentioned in the following references:

1. U. S. Congress, Joint Economic Committee, The Planning-Programming-Budgeting System: Progress and Potential, Hearings, Washington, D. C., 1967. Includes:
   a. "Statement of Warren D. Exo"
   b. "Program Budgeting in Wisconsin" by John W. Reynolds and W. G. Hollender
   c. "Wisconsin Report: State Budget Reform Aids Understanding of Expense" by John Wyngaard
2. State of Wisconsin, A Prospective Integrated Planning-

Mr. Fred Hiestand is Chief of the Educational Analysis Unit, Bureau of the Budget, Department of Administration, Madison, Wisconsin.

Integrated Planning-Programming-Budgeting System for Wisconsin State Government, Madison, Wisconsin, 1967.

3. State of Wisconsin, Management Review: Wisconsin Vocational, Technical and Adult Education, Madison, Wisconsin, 1968.

4. State of Wisconsin, Data Processing in Wisconsin State Government: A Five Year Plan, 1967-1972, Madison, Wisconsin, 1967.

5. McGown, Wayne F., How to Apply Program-Planning-Budgeting in Your State, Madison, Wisconsin, Bureau of Management, 1966.

Implications of the 1968 Vocational Education Legislation

Abstract of a Presentation by Dr. Otto P. Legg

The Vocational Education amendments of 1968 set out several new directions, opportunities, and requirements for state departments of vocational education.

The 1968 amendments place a strong emphasis on meeting the manpower needs for new and emerging occupations and on meeting the needs of the various disadvantaged groups in our society. Educational programs must fit both student interests and the future manpower requirements to be considered successful. To implement these aspects, funds have been specifically authorized for programs aimed at the disadvantaged and states are required to consider employment conditions in their reports to the federal government. In addition to the requirement of manpower studies, the act also calls for national and state advisory boards.

New opportunities for leadership training and research are granted in the amendments. Funds are authorized for research and experimental programs in vocational education. Grants and fellowships for inservice training institutes, interstate exchange programs, and graduate training of vocational education personnel are provided for.

"These amendments will complicate things for awhile, but they lead toward goals which we strive for: (1) a fuller and richer life for more students, and (2) more rapid industrial and economic development."

Dr. Otto P. Legg is Director of Planning and Senior Program Officer of the Planning Section, Division of Vocational and Technical Education, U. S. Office of Education, Department of Health, Education, and Welfare, Washington, D.C.

Role of PPBS in The U. S.

Office of Education

Abstract of a Presentation by Dr. Otto P. Legg.

PPBS is not being forced upon state divisions, but these training institutes are merely attempting to inform the states about the concepts and procedures of PPBS. We, at the federal level, are in the process of converting the Department of Defense model to education. The U. S. Office of Education is not necessarily ahead of the states in this procedure, in fact, we may be behind some state divisions.

The organizational structure and the program structure within the Department of Health, Education, and Welfare (H.E.W.) are not identical at the present time. PPBS can be adopted without changing the organizational structure. The program structure for H.E.W. as given in Planning-Programming-Budgeting: Guidance for Program and Financial Plan, H.E.W., 1968, outlines the program levels: (1) categories; (2) goals; (3) objectives; and (4) character.

The Bureau of the Budget Bulletin No. 68-9, April 12, 1968, identifies and defines the present components of the federal PPB system. The annual PPB cycle for completion and submission of the program memoranda (PM), special analytical studies (SAS), and the program and financial plan (PFP) is illustrated in this bulletin.

Data Needs: Local, State, AND Federal Requirements

Abstract of a Presentation by Mr. Allan R. Lichtenberger

PPBS is a way of looking at what we are trying to do. It is a significant step forward in the governmental decision-making process, but we must have a great respect for the remaining work. We are just in the initial stages of conceptualizing and defining PPBS with respect to education. In the past, we accounted for expenditures in school systems fairly well while another group of people were talking about purposes and goals of education. Now, PPBS is combining the two functions.

Standardization of terminology is a prerequisite to successful implementation of PPBS. This process began with the "Report of the Committee on Educational Records and Reports" in 1912. The process has continued and been refined through the State Educational Records and Reports Series: Handbooks I - VI.

Informative and accurate data is a second necessity for the introduction of PPBS. Once goals are specified, indices of results and input items are needed to relate actual accomplishments to the desired ends. The major source of this data is always the local school system. Also needed is a model or picture of the school system to analyze the relationships between variables and to specify the necessary data and to eliminate the unnecessary.

The final requirement for the successful practice of PPBS is the

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inclusion of the entire school staff in the process. Teachers should be given formal responsibility in planning instructional programs, in analysis and evaluation, and in feedback of information to the planning phase.

THE POLITICAL ASPECTS OF PPBS

by

B. Dean Bowles

At least one prominent American historian has concluded that "fadism" is a recurrent theme of our educational history. Moreover, the prophets and disciples of each new educational "renaissance" file a disclaimer that their message is not the gospel in every preface and introduction; the bulk of their text betrays them however. Witness, for example, that the "subject-centered" curriculum gave way to the "child-centered curriculum". Both of these have now fallen to the "professional-centered" curriculum (e.g., team-taught, flexible-modular scheduling), and yet nothing has really changed. In the operation of our schools' "democratic" administration yielded to a crew of "catalysts" and "statesmen," and now we have a curious mixture of "change agents" and sensitivity-training cultists on the cutting edge of education.* If the schools are administered differenly for all this, it is one of the better kept secrets in our age. Now in the area of school finance and the budget we have taken old cost accounting, planning, and goal setting -- everyone admits the elements were always there -- and made a system out of it called PPBS -- "It's just a new way of thinking about old elements" -- to serve as a panacea to our social and fiscal crises. These remarks smack of the

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*Pertaining to change in education, the story goes that George Washington could return today and find his entire surroundings changed, strange, and unusual -- except the school, and that would be constant, familiar, unchanged.

skoptical, facetious, and sarcastic, and such is not my intention. I only intended to momentarily shift the mood set during these several days from that of an accepting communicant at the altar of economic rationality to that of a critical appraiser of the political aspects of PPBS.

In making the shift in mood and in my ensuing discussion of the political aspects of PPBS not only will I not disturb the principal tenets of PPBS, but I will happily accept them as both germane and relevant. Since PPBS has been the undivided object of your attention and study for many days, I'll neither delineate nor direct my remarks to the internal features of PPBS but rather focus on the relationship of PPBS to its external political, policymaking environment.

Before I proceed allow me to set aside another roadblock to our understanding. Ten years ago many of us would have accepted the myth that politics and education did not and should not mix. Not so today! The mix of politics and education is well known and manifestly practiced by both professional educators and interested laymen. Confusion arises when we regress into our professional jargon and call politics by another name. Allow me to illustrate. When a superintendent interacts with others, gathers pertinent information, withholds economic rewards, and exercises his legal authority to fire an incompetent teacher, that is professional duty. However, when the school board interacts with people in the community, obtains intelligence, withdraws funds, and votes 4-to-3 to terminate an incompetent superintendent, that is politics. Politics is really more than this. I believe we can agree that politics is not only a functioning but also a necessary and vital part of education, for it is the process

whereby a society allocates

1. its power and authority to govern and administer;
2. its scarce financial, material, and human resources; and
3. a preference from among competing and often divergent values.

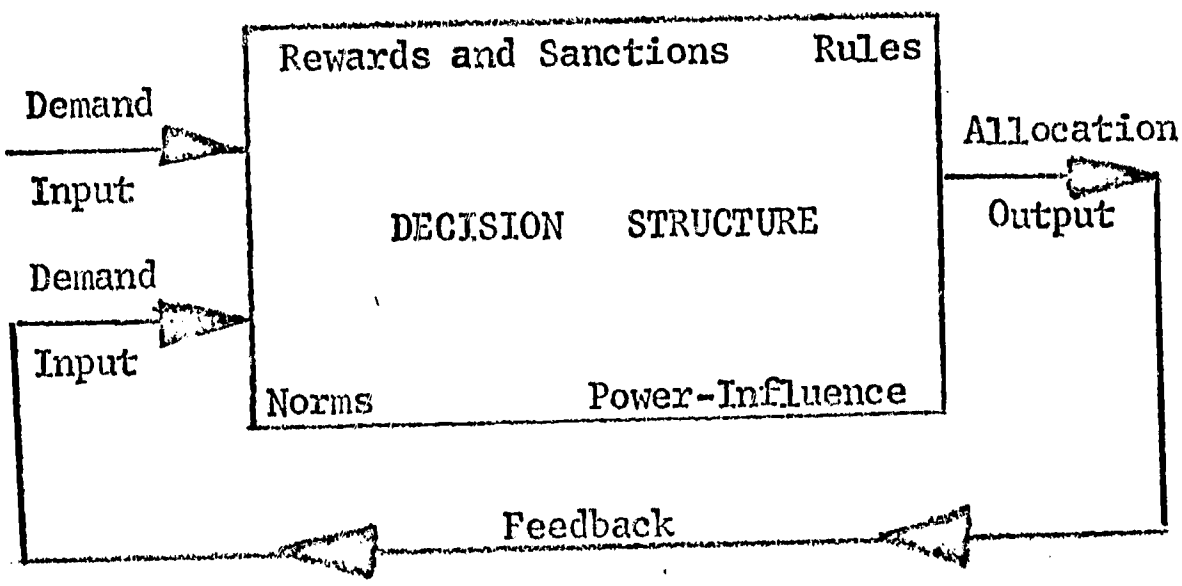
In Lasswell's words it is "who gets what, where, when, and how." In specific terms meaningful for vocational and technical education, politics is whether power is allocated to allow for a separate board of vocational and technical education or whether the government of vocational and technical education is buried three or four levels in the bureaucracy of a Department of Public Instruction. Politics is whether resources are available for full, discretionary program development or whether vocational carpentry is cost-accounted out for benefit of an academic program. Politics is whether vocational program values are geared to the needs of inner city employment problems or whether they function to perpetuate the virtually lilly-white, skilled construction trade guilds through the apprenticeship programs.

I'll now return to the central question, namely: the political aspects of PPBS.

PPBS is designed as a decision-making mechanism for the optimal allocation of scarce resources, and when utilized in the formulation of public policy, PPBS inevitably gets caught up in politics . . . and the political system. There are elements in the political system which are ignored by the proponents of PPBS and/or which inhibit the utility of

PPBS as a decision-making tool. It is to these factors that I will now turn.

The most salient feature of PPBS is its emphasis on output. That is to say, PPBS's proponents suggest that less sophisticated budgeting systems focus almost exclusively on input while PPBS will assess the amount of "bang for the buck." While that is undoubtedly true, PPBS tends to examine only the economic or resource input or demands on the political system. It logically follows that assessment is likewise only in economic or resource allocation terms. On the other hand, PPBS virtually ignores demands and allocations which are primarily value-laden or which redistribute political power. (Reference to the political, policymaking system schematic would be appropriate at this point.) While it is



obvious that the three types of demands and allocations -- power, resources, and value -- are frequently inter-dependent, power and value issues are often paramount in the eyes of the political participants, Indeed, the allocation of certain values (e.g., open housing) and of political power (e.g., creation of an independent vocational-technical system in Wisconsin) has a far greater impact on people, public policy, and the political system than the resource distribution involved.

Certainly PPBS can make an economic case for or against open housing or a separate vocational system -- we have paid a dear price for segregation and vocational education has lost resources when cast under the same political umbrella as general education -- but in such cases resource allocation has followed, not led, the value and power allocation decisions. In short, while PPBS is a significant breakthrough for assessing relative economic-resource costs and benefits, there are relative social-value and political-power costs and benefits which are not taken into the balance of accounts. In such cases PPBS has limited utility as a decision tool.

May I reiterate that the real influence which PPBS will have on education is its emphasis on policy impact or the assessment of the output. As you know, we in education have traditionally developed elaborate studies about our input (e.g., the school survey, accreditation reports, and institutional research) and have vague, ambiguous statements of goals, (e.g., school board statements of philosophy, "life adjustment," and the modern report card), but only with the influence of PPBS have we begun to examine our output and state our objectives with any degree of precision and which would allow for some form of assessment or measurement. However, if PPBS can be credited with causing us to objectively assess the performance of our institutions, it can be faulted for leading us to naively ignore the decision structure through which power, resources, and values are allocated. That is to say, input, output, mission statements and the other accoutrements of PPBS are treated with exacting precision, but the political process and its decision structures are, at best, taken for granted, and, at worst, presumed to be less than rational, hence, less vital (so the logic seems to go) to the process. Allow me to

comment on a few of the elements of the political policymaking process which bear upon the utility of PPBS as a decision tool.

First, every political system has some rules which provide for the government of its institutions. Some of the rules like Federalism and municipal home-rule which grant a significant degree of autonomy, if not sovereignty, to its political subdivisions, and the separation of powers which allows a jealous guarding of the division among the executive, legislative, and judicial functions play havoc with PPBS because PPBS assumes a unitary system with rather centralized decisionmaking processes.

Second, political systems have customary patterns of operation, or norms, which informally govern the system. Defense appropriations, for example, have been governed by a norm which allows for a large degree of Presidential autonomy in his relationship with Congress. This norm has overcome many of the formal restraints which normally would influence policy decisions in other areas of public policy (e.g., public works, education, consumer protection). Each of the state political systems has its own set of norms which would dictate limitations in the use of PPBS as a decision tool. Hence, a decision-making tool which was "normed" in a political environment governing defense appropriations at the National level may have serious limitations when used in a political system whose norms do not follow such deviations from the customary pattern.

Third the currency of politics is power, and PPBS must be considered not only in terms of explaining the anticipated output of a forthcoming decision but also in terms of a vehicle to power itself. In short, PPBS must be considered as process as well as substance, and although the disciples of PPBS recognize the power inherent in PPBS as a decision-making tool, the facts of PPBS as a political power resource deserve more attention.

Allow me to elaborate. In a modern, industrial society decisionmakers are increasingly reliant upon technical expertise and information for public policy formulation. Expertise and information are valuable political resources. However, the requirements of PPBS demand a large degree of centralized control over the sources of expertise and information which may have deleterious or disruptive effects on the current political balance of power and decisionmaking processes. On the other hand, the utilization of PPBS could be calculated to benefit a desirable shift in the locus of political power and thereby change the decision-making process. In terms of the impact of PPBS on the distribution of political power and the customary decisionmaking pattern, the utility and value in the adoption of PPBS would be in terms of whose political cost and whose political benefit. For example, to shift a large degree of political influence from the disparate armed services and reduce the influence of the armed forces Congressional alliance, a Secretary-of Defense might utilize PPBS as a political power resource in centralizing decisions in the Office of the Secretary. Likewise, a governor or state department of education might wish to reduce the influence of an unholy alliance of vocational education pressure groups and local directors by means of centralizing the decisions through the means of PPBS. Now PPBS, like any other political resource, would be value-free, and, hence, could be used for good or evil, for change or maintenance of the status quo. While I am confident, therefore, that PPBS will change the distribution of political power, and I am equally confident that decisions will be better documented by PPBS, I am not at all sure that PPBS can necessarily give better decisions by reason of re-distributing power throughout the political system.

Fourth, and finally, a feature of political systems is that much of

the power is exercised through a system of rewards and sanctions. More specifically, people are benefited for their cooperation and disciplined for their recalcitrance in the on-going process of governing. Rewards may take the form of additional salary, status, or recognition beyond that normally prescribed by the system; sanctions frequently take the form of loss of job, reduction in pay, or public embarrassment. Rewards and sanctions almost always are "personalized" and directed toward individuals or groups, whereas PPBS is program oriented and focused on assessment of policy outcomes. The result is that PPBS restricts or inhibits the power of decisionmakers to sanction or reward without seriously disrupting the affected budgeted program. In summary, I need not say more than a legislature is not likely to give up a vital political resource for the utility of PPBS.

I shall move now to consideration of the policy process as it affects the utility of PPBS as a decisionmaking tool.

The concept of policy formulation on which PPBS is based is one which assumes that decisions are made in a wholly rational and benign universe and by means of the classical or traditional model of decision-making. This model suggests that policy decisions are made by

1. identifying a public policy problem;
2. formulating a statement of policy objectives or goals;
3. stimulating alternative solutions;
4. ordering the alternatives;
5. selecting the optimal alternative;
6. legalizing the selected alternative; and
7. implementing the decision.

This model makes a further assumption, namely, that there is or can be agreement on objectives or goals, an assumption which, alas, is neither entirely correct for the policy process as a whole nor is it an approximation of reality for the more vital public policy decisions. In short, disagreement, if not irreconciliable differences, is one of the cornerstones of politics and cannot be compromised for the ease and convenience of an economic, free-market decisionmaking model.

This does not mean that PPBS lacks utility as a decision tool. On the contrary, it does have utility and ought to be developed and employed to optimize the rationality and impact of public policy decisions. However, PPBS should be placed in a political policy perspective more suitable than the assumptions on which it is now based.

Allow me to illustrate by suggesting that there are four fundamental modes of resolving actual or potential conflict over the ends of public policy:* (1) rational search process; (2) persuasion; (3) bargaining; and (4) power play politics. (The elements of this model are illustrated for your reference.) The first, rational search process,

Conflict Resolution Mechanism (1)	Goal Congruence (2)	Goals Changeable (3)	Goals Negotiable (4)
Rational Search	Yes	-	-
Persuasion	No	Yes	-
Bargaining	No	No	Yes
Power Play Politics	No	No	No

*The basic elements of this matrix will be recognized as being from James G. March and Herbert Simon, Organizations (New York: John Wiley and Sons, 1963). However, the interpretation given the matrix in terms of policy formulation is the responsibility of this writer.

assumes that there is goal congruence, or that the participants (individuals, groups, government) have substantial agreement on the fundamental objectives of a proposed public policy. In this instance the decisionmaking proceeds as described in the seven steps outlined previously, and PPBS is at its best in forcing precision in the statement of objectives, generating alternatives, and producing evidence for selecting the optimal alternative. In summary, the rational search process is the policymaking device on which PPBS is based and, hence, thrives.

However, persuasion is necessary when there is disagreement among the participants about the policy goals or objectives, but the power, resource, or value disposition of the participants is not such that this disposition could not be changed if rhetoric, evidence, or a "case" could be made for goal congruence. When persuasion is the mode of decisionmaking, PPBS is extremely valuable not as the decision tool, but in building a "case" for one alternative in lieu of another.

Should the participants find that not only is there lack of goal congruence but also those goals or objectives are not changeable, yet negotiable, bargaining becomes the mode of conflict resolution. In this instance the stance of the participants would be such that persuasion would not alter the disposition of goals or objectives. Nevertheless, the participants would be willing to "trade" the potential achievement of a goal which is dearly held for another's which, although anathema, would become a fair exchange. In a bargaining mode PPBS cannot be utilized for making a "case" which causes a shift in policy goals or objectives, but it can be employed by the participants separately and independently in order to better and more rationally understand the potential impact and meaning of those policy goals which they might "give up" or

"gain". Unlike the rational search and persuasion processes where PPBS can be employed as a tool for consensual politics, it becomes a mechanism for the politics of conflict in both the bargaining and power play modes of conflict resolution.

Finally, power play politics is the mode of conflict resolution when there is lack of goal congruence, the goals are not changeable, and neither are they negotiable. In the case of power play politics the participants are neither willing to be persuaded nor are they wont to exchange one set of policy goals for another. The impasse is resolved only through a strict "win-or-lose" situation. PPBS has limited usefulness in power play politics. Its only utility appears to lie in making one participant or another better aware of the potential policy impact of whatever it is they win or lose.

In conclusion, it would be possible to continue to delineate the elements of the political system and reflect upon the utility of PPBS in terms of those factors. However, little additional benefit would accrue from such an exercise. Moreover, it was the purpose of this paper to be supportive of PPBS, for it offers a hope and a direction for better public policy, more rationally determined, focused on policy impact and its assessment, and recognizing the interdependence of factors which influence policy outcomes. The path chosen to that end was to take PPBS from the altar of uncritical acceptance as a rational decision tool and evaluate it as an actual or potential functioning element in the political, policymaking process. If by this course we come to recognize that PPBS has serious dysfunctional assumptions and some operational limitations in the light of politics, then we have been of assistance, rather than of disservice, in further refining the conceptual parameters of PPBS and in increasing its operational utility.

THE PLANNING PROCESS

by

Samuel C. Kelley, Jr.

I would like first to make a rather conceptual statement about planning, its role and its elements, and later to talk in a more technical way about what is involved in the planning process, where the difficulties are, and what we need to do. If there is a context for this discussion and for the existence of the Center for Vocational and Technical Education, and the Center for Human Resources Research, it is in the fact that about a decade ago, economists, who were concerned with economic growth, began to empirically test growth models. They discovered that they did not explain the process.

Traditionally, economists have attributed economic growth to changes in the quantity of capital and labor. Since, in most countries, labor has never been a scarce resource in quantitative terms, the great emphasis in economic analysis has always been on capital formation. A number of people found that when they related the rate of growth in many countries to changes in the stock of manpower and capital, these changes accounted for only a fraction of the total growth. There was in the economic model an unexplained residual, and this residual has become the focus of a great deal of activity which includes this meeting today. Professor Schultz of Chicago began to explain that residual, the third

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factor contributing to growth, in terms of education. He argued that changes in the quantity of capital and labor were not exclusively significant, but that changes in the quality of these two factors accounted for a significant portion of the economic growth. Education has since been translated into explicit terms as the formation of skills and the development of the proper labor market capacities in the labor force. One of the implications of this concept is that there is in the economic system a great deal of complimentarity between labor and capital.. That is, there is a technological relationship between the kind of capital that you use, and the quality and capacities of the labor that you use with it. Now to those of you who are economists, you will know that this, in all its simplicity, is a revolutionary idea because we have been committed for at least a century to the idea that capital and labor were simple substitutes for one another.

Now having become sensitive to the fact that the ability of an economic system to grow was to an important degree a function of its ability to produce skills, we became sensitive, especially in the less developed countries of the world, to the fact that we did not have the institutional capacity to produce skills in appropriate quantities or forms. It is much more obvious in a less developed economy, where perhaps 75 percent of the population is illiterate, that you cannot employ sophisticated techniques of production with that manpower stock. It is equally important, but less obvious in the United States, that there are also a number on constraints on the ability of the economy to grow and hence to absorb manpower and on the ability of the economy to absorb all manpower.

We do not have a set of training institutions equipped to assure an appropriate level and type of skill to meet the needs of the economy.

Hence, there has developed in the world, and more recently in the United States, a great concern with the adaptation and extension of training and educational institutions in the manpower context. The principal concern of those of us who are in this field is to be able to relate to a specific set of objectives, full employment, rapid economic growth, etc., and to define the appropriate institutions, the appropriate techniques to assure the achievement of those objectives. Now, planning has become an indispensible element in this process. Again, the United States is an exception to the pattern of change in the rest of the world. We have become only very recently sensitive to the need for a planning mechanism to help us make appropriate decisions in trying to structure a labor force that is relevant to the needs of the economy.

The reason that the United States has not moved to planning as rapidly as most other countries is, in part, our commitment to the market mechanism as a decision-making institution. We have assumed that the forces of the market will assure an appropriate supply of manpower in relation to the need. This assumption is deeply rooted in our economic philosophy and it has taken us a very long time to subject it to critical tests in the real world. There is today a general concensus among labor and manpower economists, that the labor market is not an effective allocating mechanism. We can present a very extensive body of empirical evidence which suggests that wage structures and wage rates do not relate manpower supplies to needs in long term or even in the short run. Now for that reason we have begun to move to the instrument of planning, an element in a decision-making system.

The function of planning is to develop criteria for decision-making. We can identify at least five kinds of criteria which derive from a

planning process. One type of criteria, or one function of planning is to specify the goals that the institution is attempting to achieve and to do so in operational terms. It is not very meaningful to say that the goal of an institution is to advance the good life, although many educational institutions will so define their objectives. A goal must be readily transformed into courses of action, into policy, or into programs. This may seem like a very simple point, but I think we are all sensitive to the extent to which institutions exist and continue to exist without really ever having defined the purpose of their existence.

A second kind of criteria that planning provides is interdependence criteria. Most institutions do not have a simple and single goal or objective, they have multiple goals. Goals may be in conflict with one another or they may be complimentary; that is, one goal may depend upon the achievement of another goal, or it may not be possible to achieve two goals because one requires resources that the other requires. One has to establish a priority, and one of the functions of planning is, therefore, to do so.

One of the dilemmas that we face in this country today and that seriously affects your work is that we have, stated or unstated, two national goals that are in conflict, or at least in partial conflict. We are committed under the Employment Act and subsequent legislature to an objective of full employment. We are also committed by virtue of the public pulse and political interpretations of it to stability. Which one of these two has the highest priority if they are in conflict? Now, it is a fact that this conflict has given great importance to vocational and technical education today because one of the forces of inflation is the constraints in the labor market, when a system is trying to operate at a

very high level of capacity. That is, we have problems, the economists say, of structural unemployment, as we have bottlenecks in the system, and the presence of those manpower bottlenecks puts pressures on the system which tend to be inflationary. Hence, in the extent to which you can be successful at orienting vocational education to the reduction of those manpower bottlenecks, the less or the more you will contribute to price stability. This problem of conflicts and interdependence is significant not only at the national level but in each institution. Planning is a mechanism defining those conflicts or complimentary relationships and hence providing the initial baiis for establishing priorities.

Third, planning provides efficiency criteria; that is, a method by which one can evaluate what are the relevant means to achieve objectives and define the resource or input requirements for each of those means. Now you had some discussion this morning concerning costs and benefits of education and some time later in the week my colleague Dr. Shea is going to discuss cost-benefit techniques of analysis. One of the principal values of that type of technique is simply to evaluate alternative means of achieving a given objective, to evaluate them in cost terms, so that planning is the means by which you assess and define the standard of efficiency with which you meet your objectives.

Fourth, planning should provide feasibility critera; that is, it should tell you whether or not it is technically or institutionally feasible to achieve the goals that you have established for the institution. Now again, this seems like a very simple statement, but I would suspect that many failures exist because the objectives were simply out of reach of the real capacities of the society or the institutions to achieve them. We have made grandiose statements of what we will achieve,

only to fail because we made no real assessment of the requirements for success. Now those questions of feasibility include things to which we tend to be most sensitive, that is, budgetary allocations and financial or human capacities. They may also be much more institutional or subtle things, that is, simply the inability of two interrelated institutions to inter-communicate with one another. We have been making a study in Equador recently, trying to find the formula, or a means, or an approach to assessing the institutional capacity of any agency to carry out any plan. We have been testing this out in the educational system of Equador and we have discovered that in 1963, the Ministry of Education established a plan for education that required the production of a particular number of teachers, specifically 17,000 additional secondary school teachers in a fixed time period. In looking back and trying to determine why it did not succeed, there were two glaring conditions. One is that the university in Equador, as in most other countries in the world, is autonomous,; they are subject to no external controls. Consequently, no matter what plan the Ministry of Education makes for producing teachers, there is no means other than moral persuasion for its obtaining appropriate action by the universities to produce the teachers. Now the plan that the Ministry of Education had was concerned also with the quality of teachers, and it prescribed certain standards for entry teachers; but in retrospect we find that a third of all teachers that were appointed in that period were appointed on the recommendation of the members of the legislature for reasons that had nothing whatever to do with education. There is, in this case, an external intervention in the system which renders the plan meaningless. What is responsible for this failure is the planner and not the legislature or the university. They were part of the data and system

in which the planning took place and if the planners did not question every aspect of feasibility in implementing a plan and accomodate it, the failure was theirs. One function of planning is to examine, explore, and define every aspect that bears on the feasibility of implementing a set of goals and appropriate programs.

Finally, planning should provide one other type of criteria, namely the time criteria. This is not a frictionless world and things do not happen immediately because we wish them to do so, but the development of complicated systems requires a significant amount of lead time. Planning ought to indicate what the sequence of events will be or should be in order to achieve an objective over a period of time. Now again, this situation is one which is the stumbling block for a great deal of what we do in the United States because we tend in this country to react to crisis situations and we almost always find that we are not prepared to react. This is the situation, I would argue, in which vocational and technical education finds itself today. We have suddenly recognized that we cannot meet the problems of the urban ghetto or of Appalacia or of a five or six percent unemployment rate without having a set of training institutions to meet these needs. I assume we are trying to move rapidly, and planning at the institutional and national level can significantly contribute to our sensitivity as to the amount of lead time that is required to achieve an objective. Now I would like to simply stress this point: there is a great inclination for planners to assume decision-making responsibilities and to assume that the plan itself if the body of decisions. There is a tendency for the planners to play God and to slip into this role very readily and to assume that this nice package of statistical relationships that they have established is the Tablet of Moses and should be respected

by all. The function of planners is to aid decision-making by providing, as I have just indicated, a series of essential criteria on which rational decisions can be made.

Now when we talk about planning, the discussion is often confused because planning exists at a number of different levels and these levels in some sense together comprise a comprehensive system of planning. There are at least three major levels at which planning occurs and there are some problems of interaction among these levels. At the most aggregate level there is what I would call global strategic planning. Global planning is likely to be concerned in very broad, sweeping terms with definitions of purposes within the institution or society. When we say that we are committed to a level of full employment and a growth rate in the economy of five percent per year and relative price stability, we assume that someone, through some process corresponding to planning, has established the fact that these are feasible, consistent and complimentary objectives. The strategy by which we may achieve these goals, if there is achoice, is also a part of planning at this stage. It is quite obvious, for example, that if we have a condition of chronic unemployment in Youngstown, Ohio, and we want to reduce unemployment, there are several ways by which we can act on that problem. One obvious solution is to attract industry into the area to provide additional jobs for this local labor market. A second possibility is simply to move the labor out. It may well be that if we're talking about an area like Appalachia, it may be much more feasible to solve the problem of unemployment by out migration than by establishing an industrial complex in that region. There is finally a possibility of reconstituting the labor force of Younstown, Ohio, in order to minimize that amount of unemployment that's a function of nonrelevance

of the stock. This is a strategy choice, but it doesn't mean you have to take one strategy byt you can take a combination of strategies. There seem to be a great many of these strategy decisions in the area of vocational education, and we ought not to simply leap to the conclusion that the solution to the problem is to continue to do what we had been doing. We ought to examine the alternatives and decide whether or not there are better approaches to the same or different goals.

Now a second level of planning is what I would call institutional planning. In the discussions of this seminar that we have had to date, there is a significant emphasis on institutional planning. There is a great necessity for institutional planning, to evaluate institutions in terms of the ends and the means, and to determine what is required to make it relevant and efficient. But I would want to point out that you are involved in one institution in a complex of institutions which are concerned with an ultimate objective. While you have to be concerned with the capacity of your own institution, you also have to be concerned with its interactions with other agencies.

A third level of planning is what I call program planning. Having determined the objectives and the strategy, having developed an institution that is relevant, what are the specific actions that you undertake to achieve goals? This involves questions such as the choice of techniques, how to teach a particular thing, how to schedule inputs in relation to a flow of outputs, how to recruit all the resources that are necessary for the process, and how to budget to achieve goals. Within an institution, each of these elements takes place simultaneously with other necessary rational decisions concerning goals and strategies and adaptation of the institution to those purposes. These do not, as the discussion might

suggest, occur in some simple sequence of a hierarchical structure in which the man at the top renders a global decision and strategy and the man at the bottom does the work. This tendency in planning an organization often produces catastrophic results because all of the decisions are interacting. You cannot make basic decisions on objectives without tests of feasibility and to get feasibility tests, you must design, implement, and test programs. Hence, there has to be a continuous feedback in the system of planning. Every person that is involved in designing a specific activity and in applying that activity must have access within the system to communicate his experience, his success, his failures, the efficiencies of the procedure, etc., so each person is used to reassess the institutional goals or the institutional strategies. Each person should be used in evaluating the effectiveness and relevance of the institution itself.

We are constrained in decision-making in this country because we do not have a rationalized system for goal-setting. As I implied in the illustration I used a moment ago, we can say that there are certain goals related to manpower, one of which is specifically defined in the legislative process, which is a high level of employment. The other, as I have suggested, is only obvious to us by inference when politicians talk about reducing or checking the rise in prices and as a result, they get votes; we have to assume that there is a public concensus of some sort concerned with price stability. Given these goals, we have moved through legislation and by research to define specific sub-goals which are objectives of manpower policy. Manpower policy is gradually being made explicit in legislation. We are committed to the provision of criteria data, that is, data on manpower needs through job vacancy data and similar sources. These criteria become the basis for institutional planning. The

questions that are asked are simply: (1) what are the skill and labor market characteris'tics of a manpower stock that will be relevant to the structure of needs next year and ten years from now; (2) how are these skills developed; (3) what is the most efficient technique and by what institutions; and (4) by whom? This is essentially the procedure by which planning attempts to provide a series of criteria to answer three basic questions; (1) what is it that we are going to produce; (2) how are we going to produce it; and (3) who is responsible for doing it?

Now, finally, let me say briefly that while I am an advocate of planning and I think that we have a great need in this society for extension and intesification of planning through a whole range of institutions, there is a tendency for people to assume that planning is some cure-all for the problems that bother us at the moment; this is also true of education. One of the curses of Professor Schultz's observations on a role of education in economic development has been that we have attributed to education the responsibility for solving all of mankind's problems. We have not raised any questions about whether or not there aren't some other institutions that are more relevant and secondly whether or not the other goals or major goals of the educational system might be completely lost, if we load onto it all the problems that now beset us. Well, the same thing is true of planning; planning is, in its simple form, simply a matter of logic. It is a rational process for proceeding from the definition of a goal to an act that shall move to achieve it.

Effective planning demands certain conditions. It demands among other things a high level of knowledge, skills, and information about the problem area with which we are concerned. One of the constraints on us as manpower planners or as vocational educators is that much of the knowledge

that we require for our purposes is simply not available to us. About six years ago, some of us were doing a study of the long term unemployed in some Ohio labor markets and we were trying to set some criteria as to needs for occupational skills in order to evaluate the potential of long term unemployed persons to be retrained. We discovered that there was only one labor market in the state of Ohio in which any attempt had made to project its needs for a period as long as five years. Secondly, planning requires a very sophisticated institution. The need for communication and feedback within the system is great and most institutions are not adequately equipped in terms of its own internal system of communication and transfers of knowledge. Finally, planning cannot be very effective unless it has some continuity because planning is a continuing process of decision-making, re-evaluation, and adjustment. You would be better off to not develop a plan than to assume that you have established a set of answers which will continue to be useful and desirable. The dilemma and perhaps the hope of planning in a democratic society is that the planner will not make the decision but provide the criteria for decision-making. In an essence what the planner should be doing is providing to a legislative body a set of rational criteria on which they can make decisions concerning social priority. In every democratic situation you have a choice of providing to a legislative body alternative courses of action or what you consider to be the best course of action. I can't offer an answer as to which is the best procedure, but I think it's too complex to offer a large number of acceptable alternatives because they tend to confuse legislators.

An institution is committed, and this means the decision-makers in the institution are committed to a persistent, consistent, rational approach

to their problems or they are committed to a series of ad hoc decisions. If the institution does not commit itself to defining its goals, seeking rational solutions to it consistently, then there is nothing left to discuss about planning because planning is the alternative to ad hoc decision-making. You may have all the necessary commitments, but if your institution responds only to immediate stimuli, then there is simply no hope for rational decision-making unless the decision-maker tends to be a most perceptive, sensitive person in the universe. Planning is an educational act; that is, one of the roles of planning is to educate people to the nature of the problem and the process in which they're involved. If you are committed to a rational approach of this sort, you have, in some sense, a missionary responsibility to communicate this to the decision-makers.

Now I would like to talk about the planning process in procedural terms, first of all in what I would consider to be an ideal manpower resource planning situation, and then to compare that ideal form to the situation in which we operate in the United States. I will begin by assuming that the immediate fundamental objective of a vocational education program is to provide over time a match between the requirements of a society for a specific complex of skills and the supply of those skills.

We have two technical problems, one is to estimate for any point in time the requirements for human resources and to define the requirements in terms of technical skills and production efficiency. The other is to examine the systems that produce these characteristics, and to evaluate it in terms of its relevance to requirements and of its efficiency in meeting those requirements. What are the specific criteria that determine

the nature of manpower requirements in the system now, and in the future? Although these criteria are multiple, we may simply reduce them to the two that were mentioned previously.

There is one thing that this society is clearly trying to achieve. It wants to expand productivity and output, and we can quantify that in terms such as five percent increases in gross national product per year. Secondly, we are committed to a high level of employment which has been established legislatively. Now these are the two ultimate objectives toward which vocational education is directed. It is to contribute to the attainment of a growth rate and to the attainment of a high level of employment. To translate these two broad objectives into specific criteria, we need to begin to disaggregate them into other terms. We need an agency or institution which would be translating this growth rate and this employment level into output, productivity and employment targets for each sub-sector of the economy, that is, for each industrial group. We would then have targets for employment and output in agriculture, in food production, in textiles, etc., throughout each group. Now, the reason we would make this disaggregation is simply that the composition of the labo r force is going to change as a function of changes in the structure of the economy. As the system tends to move away from agricultural production to industrial production, it's obvious that the composition of skill requirements will change with it. Secondly, within each of these areas, we have to define what is going to happen to productivity, and productivity is going to change as the technology of the industry changes.

Technology will change differently in different industrial sectors and this is another reason for disaggregation. Consequently, we have to define the type of technology which will characterize an industry or the

technological mix in an industry group, and then to define the specific occupational mix that's related to that technological mix. The net result of this kind of disaggregation will be to give us what is now ordinarily referred to as an occupational-industrial matrix. We will have a tabulation or a statement of estimates concerning the occupational distribution of employment in each sub-sector of the economy.

Now we have to make one additional step in this procedure, which concerns the relevant planning period. The criteria for what is a relevant planning period is the amount of lead time that it takes us to act in order to influence the result. If we were talking about high-level occupations in a country with a very limited higher educational system, it would probably be true that we could not effect the supply of engineers significantly in less than ten years. We would have to change the input of secondary schools and would have to do a lot of institution building. If we are talking about occupations with a lower level of skill, the amount of lead time that is necessary is much less. If we're talking about a high level of skill in a society that has a very large higher educational system, the lead time may be much less than what it would be if we had a limited system.

Having defined a person or a requirement as an engineer, the next question that we have to answer for ourselves is, what does that mean in terms of training or education? Now in terms of engineers, we rarely ask that question because we have formalized the relationship over a period of time and permitted the college of engineering to specify the qualifications in uniform terms. But for the great range of occupations, the relationship between the real capacities and characteristics of the individual and the occupational classifications are not as clear. Also,

we must recognize that the qualification standards for a particular occupation tend to become institutionalized. That is, they are generally much higher in the United States than they are for other areas of the world simply because we have a relatively abundant supply of education. But in any event, in our analysis it is now necessary to define, in terms of the characteristics relating to job performance, each of the individuals in each of these cells in this occupational and industrial matrix. Job performance is a function of personal characteristics other than skills, which means that we've got to include courses of action that are not specific skill training.

We have now arrived in the model at a position in which we have moved from a goal statement of a growth rate to a detailed specific statement of the number of people needed in each occupation with defined sets of capacities and characteristics. The other half of our problem is to determine the conditions affecting the supply of these skills. On this side of the equation we have two sources of supply, the existing manpower stock, and the entries to that stock over time through population growth. Determination of the stock of skills in this labor market is simply an inventory matter. We inventory this manpower stock in the same terms that we have described the requirements, how many people do we have, what is their level of capacity in education, their occupational distribution, and their industrial distribution. We also have to recognize that the manpower stock is going to diminish so we have to discount it over time. In five years, a significant part of the existing manpower stock is going to retire, die, or move out of the labor force, and we need to determine the rate of decrease. Now in addition, we need to know what is the entrance into the labor force from those who are not now part of the

manpower stock. We need a combination of two sets of data, demographic data describing the number and characteristics of the population by age, and secondly, the labor force participation rates related to the different age and sex groups in the population. Since we are concerned with their qualifications, we need to define the ways in which these people will come into the labor force. We have to examine the flow of the products of all training and educational systems into the labor force to determine the new supply if we do nothing to change it. If the qualifications of new labor force entrants do not match the requirements, what programs do we initiate to modify the supply to make it relevant to the requirements? These modifications become the immediate criteria for vocational education programs.

Our next question is, which institutions will develop the required skills of labor force entrants? Certain programs will have to be carried by the formal educational system, but there will be many occupations where there are alternative ways of training. They could be trained on the job, in special vocational programs as adults, in the secondary schools, or one can create technical institutions for training purposes. The plan has to provide certain criteria for deciding among those alternative means. One technique is the use of cost-benefit analysis which provides a criteria for determing the most effective means of producing the people in those numbers and with those capacities which will create a balance between a changing supply and a changing demand.

In this comprehensive approach to manpower planning, we have moved from two very broadly expressed criteria down to very explicit criteria which are the products of your institutions, and finally to criteria for determing the best method of producing those products. You are not the

entire system, but certain decisions are going to be yours and you're going to be responsible for making them. You may not be in the manpower planning institution, but you do have to be in contact with it and have an effective communication with it.

One final comment about our own situation: we can meet a significant amount of this ideal model, but we can't meet it all. We don't have an institution in this country for determining the future structure of economic activity. We can't make the decisions about what the industrial distribution of output is going to be except by some process of extrapulation. We have to begin our analysis by trying to forecast industrial and occupational structures on the basis of present evidence and then to use those forecasts as the criteria for planning supply requirements. This information tends to be very short term because we depend on data concerning current job openings. However, we have been moving toward the capacity to make much better long-term forecasts at both national and local levels.

DEFENSE DEPARTMENT EXPERIENCE WITH PPBS

by

Laurence E. Lynn

I would like to relate a little hypothetical personal history in order to illustrate the simple point of my talk tonight. Recently, I decided to buy a house. Actually, it was my wife who decided to buy the house; but she gave me full opportunity to review and comment on her decision, and I really am quite pleased with the results of her professional female judgment. It brought to mind the fact that we could have approached the decision at that time in a very different way. For example, suppose that instead of making a decision on whether or not to buy a house this year, we had decided to review our entire budget, and all the things that we are buying with it, to decide whether or not financial planning in our household is sound. Suppose further that I adopted the approach of calling in a team of expert advisers to help me. Let's suppose that I hired a team of three advisers--an expert on housing, an expert on transportation, and an expert on clothing and all other expenses. I asked each of these experts to review my situation in his particular area of expertise and to submit to me his recommendations as to what I ought to do.

After an appropriate period of time for report preparation, I received the report on transportation. Now, fortunately my adviser in

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this area is a real expert. He is a very successful local automobile dealer. His comments are roughly as follows. He says my present car is clearly obsolete; it is four years old, it has only 185 horsepower, it has no air conditioning, and, because of its age, there is a very grave risk of mechanical failure, and perhaps even a serious accident. Also, he points out to me in a very telling way that I must share the car with my wife, which means that occasionally I have to ride the bus. Thus I am exposed to the further risk that one or both of us will not be able to meet important engagements and commitments in the time required. In his judgment, my car should be the very best that modern technology can provide, not an obsolescent, unsafe model. Further, I should not expose myself to the risks that accompany having only one car; I may be caught short at an extremely critical time. I should also consider the possibility that both my wife and I will have to carry large numbers of people, my children (and they're getting to be a larger number every day) and their friends, and I may have to carry these people to very different locations in order to meet social and family commitments. He recommends, therefore, that I buy two Lincoln Continentals, air conditioned, fully equipped. Including operating costs, he anticipates that this will cost me only $6,500 per year, but he assures me that this is money that is extremely well spent.

I am absorbing this report when I get the next one on housing. I've hired as my expert a successful home builder, a man with wide experience in the community, a winner of a distinguished citizen's award. He points out that my present home is uncomfortable and crowded, it has inadequate storage space, and it has no recreational facilities. The plumbing is 15 years old, and I have a hot water tank that is clearly

too small for my family's needs. Furthermore, because I am young, my family may grow, and my present house is clearly inadequate for future needs. Also, he notes that my dining room is clearly inadequate for having 25 people to a sit-down dinner; considering my position I should be prepared for such a social event. My house should also be properly furnished, so that I can be sure that I have a balanced combination of housing and other fixtures and equipment, all, of course, of high quality. He can provide for these needs with a new $80,000 home in an excellent neighborhood, and the yearly costs to me will be only about $6,000 to $7,000.

I have two reports, and I receive my third, a report on clothing, food and other expenses. Again, I have hired an adviser who is first-rate. He owns a shopping center, and he tells me in his report that my family's wardrobe is simply inadequate to meet the full range of social, recreational, and business occasions that we should anticipate. I have to wear the same pair of shoes three days out of seven, and I have only three suits. Also, to insure that I am able to pursue interests that will keep me socially, professionally, and culturally alert, I need a much larger entertainment budget. The report continues in detail. This adviser estimates that to satisfy all of my needs and all of the other expenses that I should be prepared for, it will take the sum of $18,000 a year--money well spent.

I am delighted to have this expert advice, and my wife and I sit down and eagerly review these reports to see what we should do about them. Very quickly, however, we run into a problem: my advisers recommend, as the alert among you will have noticed, that I should spend $30,000 a year, but, unfortunately, I only earn $15,000. Now, I could ask for a raise in pay, and since my boss likes me and thinks I'm doing good work, I might

get it. But I doubt that he would double my salary. So we decide that it would be wise to call the three advisers together and ask them to review this problem and come up with their recommendations. So they do, and they give me another report.

They recommend, first, that instead of buying two Lincoln Continentals this year, I buy only one, postponing the purchase of the second Lincoln Continental until a year or two from now. Second, they recommend that I buy a much larger and more expensive house but that I postpone furnishing parts of it and equipping it until I can afford it. Finally, they recommend that I buy new suits but skip the new shoes, and certainly I wouldn't need to buy new underwear because nobody sees that anyway. And we can eliminate frills like entertainment expenses.

Now I am certain that none of you would unquestioningly accept such expert advice in your own personal affairs. In fact, let me guess what you would do. You would probably modify the advice of your experts in something like the following way. You might say that instead of buying an expensive and sophisticated Lincoln Continental, you preferred a couple of Chevrolets instead. That is, instead of having extra horsepower and speed, what you're really after is transportation. In this, or course, you fully agree with your transportation adviser's original ideas; you're only attempting to achieve the objective in a different way. Or you might argue that you'd rather have only one Chevrolet, even though it's a new one, because, after all, it really isn't all that inconvenient to take the bus once in a while, and you can readily accept the very small risk that you will miss an important appointment. You might rather trade off the second car and have instead a sizeable entertainment budget, which will give you very large increases in the satisfaction that you get from your income.

You might also argue that to have a big house and be unable to furnish it for several years is wasteful. Why have the big house if you can't use it the way that it was meant to be used? Why not have a smaller house that you can equip, and tailor to your ambitions accordingly? Finally, you perhaps would rather have new shoes instead of new suits, because even though your overall appearance might be enhanced more by the new suits, you are much more interested in comfort for your feet.

In similar fashion, you might do a thorough critique of your advisers' views. How would you feel, then, if a delegation from the local Chamber of Commerce, having heard of what you decided to do, visited you and told you that you are clearly in error, that you have overruled the advice of your experts that you yourself hired. They point out that the advisers have had long experience in their areas and that they are community leaders. Your trying to substitute your judgment for theirs is clearly intended to downgrade their importance in the community. After all, you asked them to advise you.

You point out that it is somehow more important for you to get the maximum amount of satisfaction from your income, and that their advice is really helpful but perhaps a little bit provocative. But they point out in turn that you have ignored a whole host of intangible factors, non-quantifiable considerations which, though they cannot be precisely measured, are extremely important to the community. You have chosen an unsophisticated and unglamorous car. Suppose people had kept buying model "T's" when better, technologically superior models were available. When you argue in turn that a new Chevrolet is really a nice, dependable working car and it gives you what you want in a car for much less than what you would have to spend on a Continental, you can see that now they are starting to

get angry. They clearly disagree with your views. They argue that you're much too concerned with cost. Your emphasis on narrow economy is going to be a drag on the community for years to come.

I hope that you will recognize that this situation is clearly absurd. And yet, an uncritical dependence on expert advice is exactly what a very large number of people are urging upon the Secretary of Defense every year. That's the way they want him to run his department; that's the way they want him to allocate his resources. On those occasions when he argues that he can get much more from his limited resources by going about it in a different way than his experts advise, quite a lot of serious opposition results. The point of this parable, applicable to the larger question of how we manage in an environment where resources are scarce, is in one sense very simple. In dealing with the tough job of allocating scarce resources, it is not who is right but what is right that matters. PPB, planning, programming, and budgeting, or systems analysis is in essence a reasoned approach to allocating scarce resources. You can't decide on the objectives you want to pursue, you can't decide what your needs really are, without knowing what it costs to achieve these objectives, without knowing what it costs to meet these needs. The planning process and the budgeting process have the same end in view, namely, establishing objectives for an organization in light of the cost of achieving them, and establishing budgets and allocating resources in line with those objectives.

The critics of this procedure argue a great many things, and they point out a great many defects in the process. Basically, at least in my judgment, a large number of them are really complaining about the unseating of an expert. They really don't want to see the basic question

in an organization shifted from who is right to what is right. Yes, they understand that budgets are limited, but it is wrong in their view to compromise needs to fit a budget. If anything, it should be the other way around.

What should a budget do, what is the purpose of a budget? I am not an expert in this area. I just want to lay out before you tonight a couple of my thoughts on this subject. First, a budget should define the availability of funds to an organization. Your organizations have budgets which define the amount of money available to your organization. The second function of the budget is to describe in some sensible way the purposes for which the funds are to be used. In other words, the budget should first define how big is the financial pie, and second, how the financial pie is to be divided up. I think that the process of putting a budget together and of deciding how much to spend and on what to spend it is really the key step in the planning process. It is all well and good to have long range planning shops, to have long range objectives, to have the head of an agency or of different offices within an agency make speeches about the directions in which we are all moving. Ultimately, however, the size and composition of the budget determine what will in fact be accomplished by the organization, to what extent and how well objectives will be achieved. That is why budget officers are such powerful people. But a key question is, is the budget set up in such a way that a policy maker can see whether or not the resources are in fact being allocated according to his priorities? Is the budget in fact the financial translation of the organization's strategies, its plans, and its objectives, or are planning and objectives formulation and budgeting kept entirely separate? Though a budget may be broken down into a variety of

categories, the budget may not at all describe the purposes or objectives for which the funds are to be used.

This can be made clear by looking at the Defense Department budget. If you, as a citizen, wanted to know what the Defense Department's budget was being used for, we could give you one breakdown that would say so much is going for the Army, so much is going for the Navy, so much is going for the Air Force, so much is going for defense agencies. We could also offer you a second breakdown of the defense budget. We could tell you that so much is going for military personnel, so much is going for procurement, so much is going for operations and maintenance, so much is going for military family housing, and so on. These kinds of information are available; we can break our budget down in this way. But in my judgment, neither of these presentations conveys any real impression as to how budgeted funds are in fact used by the Defense Department in achieving the objectives of the Defense Department and providing the desired defense outputs. A breakdown of the budget which conveys no information about the purposes and end objectives of the organization does not convey much useful information to a policy maker.

The realization that budget making and presentation and the development of objectives and courses of action are closely tied together is the basic motivation for program budgeting, for its installation in the Defense Department, for its proliferation into other government agencies, and for its use in a large number of other organizations. Both the size and the composition of a budget should be established in light of the organizations' goals and objectives and of the best way that budgeted resources can be used in achieving these objectives. The planned inputs into an organization should, in some way, be relatable to the outputs that are expected from

that organization.

Now, these ideas sound very much like common sense. In fact, they are. And yet PPB has become a code word in some peoples' minds for all kinds of dangerous schemes, for plots to rob wise decision makers of their initiative and to destroy their ability to make judgments. In fact, it is interesting to speculate on alternative ways of approaching the budgeting problem. Mr. Hitch, the former defense Comptroller, who is really the father of PPB in the Defense Department, has identified two different types of people advocating particular budget approaches--the needs firsters, on the one hand, and the budget firsters, on the other. According to the budget firsters, what we need to do is clearly establish spending ceilings. Never mind how we do that; maybe we will do it on the basis of past spending levels, or we will do it on the basis of what the Governor can give us or what the federal government can give us, or we'll read the tea leaves, or in some other way establish bogies, objectives, ceilings, targets. Once we establish these spending ceilings and targets, we'll turn them over to the organizations and we'll say, "Now you take these resources and use them in a way that you see fit--this is what you have to work with." Some people argue that this is the view that prevailed in the Defense Department in the 1950's.

In contrast to the budget firsters are the needs firsters. The needs firsters approach the problem in a very different way. First of all, decide what you need. Second, figure out how much it costs. Third, add up all the bills and that becomes your budget. We should not, according to this view, let something like a budget limit stand in the way of meeting our needs--particularly since we are such a rich country.

A much more rational approach is embodied in the idea of what has come

to be known as program budgeting. What is program budgeting? It involves several steps; first, it involves a careful examination and investigation into the objectives, the purposes, the end purpose of the organization. That is, it involves asking questions about what it is that we are trying to achieve, what it is that we are attempting to do, how we can categorize, classify, describe what we are all about. Second, it involves relating the costs of the various activities that the agency undertakes to the ends that these activities are supposed to serve. That is, it involves trying to decide how we can spend funds in various areas to achieve the particular ends we think that we want to achieve. And finally, it involves comparing the costs and estimated benefits or effectiveness of alternative ways of achieving objectives in order to select from among these alternatives the most efficient ways of achieving a particular goal. It involves, in other words, generating alternatives, asking what they cost, asking what their effectiveness is in accomplishing objectives, and then sorting out from among the alternatives the ones that can meet the objectives in the most efficient way.

After a rational process of investigating the objectives and alternatives and measuring their cost and effectiveness, then one can begin the process of putting a budget together. The budget will then be based upon a rational, reasoned approach to the establishment of objectives and the selection of courses of action in light of what they cost and their benefits. It is also important in this approach not only to worry about the current year--we're all accustomed to worrying about the budget year--but to look ahead. Program budgeting involves recognizing that decisions made today are commitments to the future; most courses of action are going to involve continuous outlays of funds, and so it is important to project

in an understandable way where you are going. In other words, set budgets in light not only of the current consequences but of their future consequences as well. That avoids the problems that all agencies face, of proponents of new programs attempting to drive the thin end of the wedge into the current budget, while concealing future outlays. Though you only need to spend ten million dollars this year, you may have to spend 500 million dollars in subsequent years. Look carefully to see what is ahead.

Now, how do you go about deciding how to set up a budget? Why is this so controversial? Why are there these different concepts for setting up budgets? Why does PPB need to be advocated? I believe that the real question is not how we go about the mechanics of setting up a system. I don't think that is the critical issue. I think the real issue, whether it's in the Defense Department or anywhere else, is how are policy makers going to manage their activities? How are they going to go about making difficult choices? Are they going to be active, or are they going to actively involve themselves in the process of understanding what the objectives are, of understanding where the costs come from, of querying the experts, of asking them to explain their viewpoints, of suggesting new ideas? Or are they going to be passive? Are they going to be referees, play a judicial role, wait until the issues are generated, and then make a decision? That, to me, is the crucial question. I believe that if the answer is that a decision maker wants to plan an active role, he needs something like program budgeting as a tool to enable him to make the kinds of decisions he needs to make. In other words, as I see it, PPB is a tool that can be used by active, forward-looking management, and the design of the program budgeting system should be tailored carefully to the needs of

the decision maker who wants to confront problems of choice in a disciplined and rational way. This approach is essential in most organizations today because budgets are getting too big, problems are getting too complex, technology is advancing too rapidly for us to be able to rely exclusively on what amounts to seat-of-the-pants methods. We simply have to find ways of rationally investigating the terribly complex issues and alternatives, and making certain that decisions are made in light of full information. I have a strong suspicion that program budgeting can be a very great help in the field of vocational education. I think that you would find--indeed I hope that you <u>will</u> find--that if you attempt to investigate carefully the kinds of issues that PPB raises for you, that you will be quite pleased at the new insights that can be gained.

PROGRAM AND MANAGEMENT CONTROL

by

Laurence E. Olewine

We're glad to see the vocational education community moving into the area of PPBS. PPBS is only another tool in the culture of management, but it is a very special tool. Your venture into PPBS should prove both fruitful and exciting.

I intend to dwell on business management problems in the Department of Defense. My examples will be drawn from that environment, so I would like to give a little visibility to a thing that we call RMS. RMS stands for Resource Management Systems. RMS places emphasis on the utilization of resources and the preparation of material for management; it is an umbrella covering a host of different information and operation systems. Our management problems in defense are viewed as five basic points. First, we have to manage our present resources effectively. Second, we have to identify new needs. Third, we must purge the less useful needs; this is always difficult because once something starts in the public sector, it tends to continue indefinitely. Fourth, we have to make rational choices among alternatives; this is becoming more of a problem since the advent of PPBS, due to the greater number of alternatives generated by the PPB system. The last management problem we have is to demonstrate the need for new resources and to determine the quantity of

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needed resources.

Now that we have a common understanding of this RMS umbrella, I would like to put things in proper perspective with a quick review of the way of life under which we operated prior to PPBS. Initially, each department submitted its budget directly to the Congress. As the size of the military complex grew, this system involved hundreds of individual appropriations. Some activities became almost autonomous and appropriations were frequently negotiated personally between the chief of an organization and some influential congressman. We in the military escaped from this state of affairs because the system did not operate well during time of war. Management difficulties stimulated the Congress to enact the Budget-Accounting Act of 1921. This placed responsibility for preparation of the executive budget in the hands of the president and was the beginning of the other system of balance and control. Next, as a major result of the World War II experiences, the National Security Act of 1944 was passed. This Act and the 1949 amendments introduced the performance type budget and uniform fiscal procedures into the Defense Department.

Also in the late 1940's, the search for rational methods of choice was becoming very imperative. The budgets were limited and the costs were going up so we had to have a logical system of choice. Now while military management has been taking place for nearly 200 years in this country, it was given a new form in what I refer to as the Kennedy-McNamara era with the introduction of the planning-programming-budgeting system, systems analysis, and cost-effectiveness techniques. Kenndy and McNamara wanted a lot of change, and change is still the keynote of the system. Modifications of the system are continually being made.

Now, why did this occur in the early sixties? I think there are two major reasons. First, the early sixties brought us into an era of capability to manipulate large masses of data pertaining to alternative solutions. Prior to the development of computors, we could never have been able to use the techniques of PPBS. The second reason for this revolution taking place at that particular time was the advent of systems analysis techniques. With systems analysis, we can quantify a large portion of information needed to make logical decisions. While the systems analysis people in the defense department are a powerful group, they do not make decisions. They do make recommendations in areas where the problems can be quantified so the decision-maker can weigh the various alternatives a little more effectively.

Our systems analysis capability in the defense department is used in various ways. In january, the systems analysis staff reviews the Joint Strategic Operation Plan (JSOP) and produces a series of papers called Draft Presential Memo (DPM) on major force issues in the plan. The DPM is a quantitative study of major issues and includes their recommendations. Copies of the DOM's are sent to the Secretary of Defense and to the military departments for their reaction. If the military departments agree with the recommendations in the DPM's, they develop a Program Change Proposal (PCP) which includes all costs during the life of the project. If the departments disagree with the recommendations, they must submit two PCP's to the Secretary, one for the recommendations made in the DPM and one for their proposal. The decision is made by the Secretary. Any approved changes then go to the comptroller and are incorporated into the Five-Year- Defense-Program (FYDP). Each year, our next year's budget is pulled out of the FYDP and is sent to Congress. The systems analysis

people are quite powerful in this process, but they are also quite objective. They are young, have no vested interests, and are not career men in the defense department. They are also allowed access to data and personnel to get different opinions.

Charles Hitch and Roland McKean authored a book called The Economics of Defense in the Nuclear Age in 1960 which stimulated McNamara to choose Hitch as his comptroller. Hitch was primarily responsible for five very important innovations in the Department of Defense. First, he introduced a principle of buying what was needed as advantageously as possible. This doesn't mean as cheaply as possible because the cheapest is not necessarily the most efficient. The second innovation was programming, the bridge between planning and budgeting. Third, he developed and formalized the Five-Year-Defense Program with continual updating. The fourth innovation by Hitch was the concept of the Draft Presidential Memorandum which contained the explication of major defense issues. Fifth, Hitch was responsible for fostering systems analysis by bringing in Alain Enthoven as his special assistant for systems analysis.

One of the first evaluations of PPBS in the Defense Department was made during the Proxmire hearings. The gains of PPBS were summarized as follows: (1) agencies have been better able to see themselves in the total governmental framework; (2) agencies have become aware of alternative solutions to the same problem; (3) PPBS has been helpful in determining program priorities through improved visibility; and (4) PPBS has promoted a more specific expression of program objectives. However, there are also a number of problems with PPBS. First, PPBS requires good information inputs. Many times, the basic data is just not adequate, current, or in the proper form. Second, PPBS should be able to bring about a better

allocation of resources among the various government activities, but many existing programs have attracted unique constituencies which encourage their continuance. Third, agencies are able to define high priority programs, but have had little success in defining low priority programs. Project Prime is being undertaken to eliminate a major deficiency in PPBS, the failure of the accounting systems to correspond with the program budget. The decision was made back in 1961 that since the Defense Department was taking such a large step, they would not involve accounting at that particular time. It was probably a wise decision, for attempting to change both accounting and budgeting simultaneously could have caused the entire project to fail. Robert N. Anthony, a nationally known accountant, replaced Hitch as comptroller in 1965. Anthony's charge was to inject accounting into the planning-programming-budgeting loop so that all of them would be compatible. This has resulted in Project Prime which stands for Priority Management Effort.

Prime '69, the first step, is aimed at charging all organizations for 100% of their operating costs. It will make possible a greater degree of participation and resource management by line managers at all levels. For example, it will make base commanders responsible for all operating expenses in their command. Previous to Prime, only about 20% of operating costs were under the base commander's control and charged to his account; the other 80% were free as far as the base commander was concerned. Project Prime is just in its initial phase, but we believe it will be successful in meeting its two objectives, to integrate planning-programming-budgeting-accounting and to focus on the actual resources consumed.

As a final note, I think you should be familiar with Chism's law

because it's going to be very important in your operations in this area of PPBS. This is Chism's law: "If anything can go wrong, it will; if anything just can't go wrong, it will anyway; when things are going well, something will go wrong; when things can't get any worse, they will; and anytime things appear to be going better, you have undoubtedly overlooked something."

MEASURING BENEFITS AND COSTS IN VOCATIONAL EDUCATION

by

John R. Shea

As outlined in the program, our subject is cost-benefit analysis. I think that we ought to broaden our concern to include cost-effectiveness techniques as well. There are some differences between these two concepts. Cost-benefit analysis usually refers to the systematic measurement of program results and resource commitments where both are expressed in value terms. In a post-secondary vocational-technical school, for example, we may attempt to measure the value of the benefits derived from that process, determine the value of resource services used, and judge whether the benefits exceed, equal, or fall short of the costs. This may be a useful technique not only in evaluating existing programs after-the-fact (as has been done many times) but also in planning future activities.

Cost-effectiveness analysis differs only to the extent that program results are usually not expressed in value terms. One is still interested in measuring the value of resources committed to a particular activity. However, rather than calculate the benefits derived from that process in value terms, one takes some other kind of measure of output.

To clarify the difference between these two concepts, consider the following example. Let us say that we are faced with a problem that only 50 percent of the graduates of a particular vocational program enter functionally relevant occupations when they graduate. If we think that

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this proportion is too low for some reason and, furthermore, that it may be within our control to change this proportion, we might establish as a target to place 75 percent of our graduates into relevant occupations over the next five years. We would then want to consider various alternative ways of achieving such an objective. One possibility might be to increase the number of guidance, counseling, and placement personnel per student. We could calculate the cost of introducing such a change. Alternatively, we might consider holding a community conference to discuss our program with business leaders. We might stress that certain placement services are available to them, and urge employers to use such services. A third alternative might be to alter somewhat the selection process of students entering our program. A number of additional options might be open to us as well when we assess the feasibility and cost implications of alternative means of reaching an objective expressed in nonmonetary terms, we are engaging in what is generally referred to as cost-effectiveness analysis.

Permit me now to make a few general comments about the potential relevance of cost-benefit and cost-effectiveness techniques to vocational education. First of all, I think that one should recognize that cost-benefit techniques have been used in the United States for a number of years, principally in the evaluation of water resource development projects. The U.S. Corps of Engineers, for example, attempts to determine the likely costs of building various dams and hydroelectric facilities. In a particular case, they may consider two or three alternatives: a high dam, a series of two or three low dams, and so forth, in an attempt to determine what the costs of such investments would be. They also

attempt to project the magnitude of future benefits to be derived from such ventures. Of course, in the case of water resource development, cost-benefit analysis is a relatively straight-forward technique. Usually, there is some known amount of water for irrigation purposes. Reduced soil erosion and other "outputs" are often measurable. The amount of electricity that can be generated will be known in advance. Moreover, water and electricity, at least potentially, are marketable products. Although there may be some external nonmarketed benefits--such as the protection of wildlife--in many water resource projects, very often there are ways of estimating the value of these third-party benefits in some fashion.

Over the last seven or eight years, there has been an increasing number of cost-benefit studies dealing with programs in public health, education, and related areas of public policy. Much of this work, however, has been after-the-fact or ex post. We have tried to determine what it costs to educate a typical student in a four-year educational program. Then we have attempted to determine the nature and magnitude of benefits from such a program in terms of those received directly by the student and those that spill over onto others in the society once the student moves out of the school system into the rest of the world.

As I see it, one important question is whether we can move from the use of cost-benefit analysis as an after-the-fact evaluation technique to cost-benefit analysis as an ex ante, before-the-decision tool. I am not particularly hopeful about doing this in the newar future, however, for a variety of reasons. Probably the best procedure for a planner at the present time is to take a hard look at some kind of proximate objectives, such as the number of graduates, number of employable graduates, and so

forth, attempt to determine the influence of various organizational patterns and resource inputs on the achievement of these objectives, and make decisions which will achieve those objectives at least cost or at a reasonable cost within existing legal, administrative, and other constraints.

In my view, formal cost-benefit studies will probably not become a widespread tool for the vocational education planner for some period of time for the following reasons. First of all, there are serious theoretical problems in measuring the benefits of education--we will look at some of these in a few minutes. Secondly, there are very substantial practical problems and costs associated with the measurement of benefits from educational processes. One always should ask whether it is worth one's time and effort to do a cost-benefit study in terms of possible improvement in decisions that would come about as a result of having done such a study. In the natural resource field, many projects involve millions and hundreds of millions of dollars. As a result, it probably makes good sense to spend a few thousand dollars on a good cost-benefit study. The cost of a bad decision, in terms of reduced benefits, may be quite high. Obviously, if you can prevent such waste by undertaking a cost-benefit analysis, such a study would be clearly justified. Third, and I think this is a very important point, many of our goals in vocational education concern the comparison or the weighing of benefits to various groups in the society, groups that we wish to treat differently for one reason or another.

It is obvious that we are not simply interested in T & I programs. We may be interested in T & I for regular children in high school, children from families with low incomes, black male youth in the cities, youngsters who suffer from mental or physical handicaps. These are not

the same people, and it is perfectly legitimate for vocational educators, and for society as a whole, to weigh the benefits accruing to these various groups differently. Cost-benefit analysis, unfortunately, has not yet progressed to the point where we can easily weigh in a selective manner accruing to these various groups in the society. In my judgment, we are forced to take particular subprograms and evaluate various alternative possibilities within each subprogram, otherwise we are not measuring comparable things.

Most cost-benefit studies attempt not only to measure economic benefits but also to identify the noneconomic benefits that accrue as a result of some kind of treatment, such as going through a vocational training program. Since many benefits extend into the future, and since we are giving up the use of current resources in order to achieve such future benefits, one has to discount appropriately future benefits to make them comparable in value to the use of resources today. This temporal dimension to the calculation of benefits presents no insurmountable problem. Those who are engaged in cost-benefit studies however, practically never make an explicit distinction between a dollar going to one group and a dollar going to another. Nearly all cost-benefit studies attempt only to measure the net increase in production and consumption possibilities for society. The argument in favor of uniform valuation of benefits may be valid in principle, but in terms of practice, such a restriction is not very meaningful. Society always has the option (so it is argued) of taking income from one person and giving it to another through the tax system. Although in principle this is true, in reality direct redistribution of benefits is an extremely difficult task.

In vocational education, we are often attempting, at least in part,

to redistribute benefits (that is, to treat people differently), and I think such a position is quite justified and legitimate, if benefit techniques are used with tremendous caution. I am not ruling out cost-benefit techniques. I am merely suggesting that such techniques be used with care and discrimination. Assume that we are faced with gram possibilities for the next five years in terms of expansion of existing programs and development of new ones. Cost-benefit analysis may be helpful as an initial screening device. We may decide that the budget is so limited that those programs which do not show any positive net return are automatically excluded from consideration. The rest of the programs (let us say 15 out of 20) may show some clear net economic advantage. We may wish to evaluate these programs further in terms of other criteria. The fact is that not even natural resource decisions are based strictly on the ratio of economic benefits to costs, and I think the case against a narrow cost-benefit analysis in vocational education is even more compelling.

Having made these preliminary comments, let's concentrate the remainder of this session on four topics. First, in a few moments I should like to sketch for you my view of the vocational education process. I do this only because I think it will be useful in future discussions of what vocational education is trying to accomplish and what the benefits and costs are of this activity. Second, let us take a look at the benefit side of a "profit and loss" statement and discuss some of the practical problems of measuring the benefits of vocational education programs. Third, we should examine the cost side of such a statement, and again look at some measurement problems. Fourth, let us look at how one goes about comparing the costs and the benefits of education. Since the benefits of education accrue largely in the future from the use of resources today, one is

forced to use some technique of comparing the two sides of the profit and loss statement, so that decisions can be made now. As you will see, this involves the use of discounting procedures.

Now, I would like to make a few observations concerning the first point--the way I view vocational education. One set of inputs is obviously the cohort of students who move through a particular program. In terms of useable data for cost-benefit and cost-effectiveness analysis, we ought to have information concerning the age of these people, their sex, race, socioeconomic background, and I.Q. at the time of entering the program. These data needs arise because we want to compare comparable programs and their effectiveness. Many cost-benefit studies have not paid adequate attention to the proper measurement of inputs and outputs. In addition, we need information on teachers, their specialties, the curriculum materials, physical facilities and supporting services.

In terms of output, we need to improve substantially the information base. At a minimum, I would like to know the number of graduates from a program, the proportion entering the labor force, the proportion employed in relevant occupations, the percentage entering functionally irrelevant occupations, and average earnings within each group. Similar information on dropouts and "jobouts" should be collected. We need this information sometime following the termination of the program in the case of graduates, or shortly after the person drops out or "jobs out." Since there are costs of collecting this information, I do not wish to recommend the collection of further follow-up information unconditionally, but, ideally, we also want to know what happens to these people over a period of time--for example, five years. The employment pattern immediately after graduation might be the same for graduates and dropouts of a program. However, the

pattern five years later might be substantially different if the people who had graduated acquired more skill and ability, and moved up the occupational ladder more quickly.

Basic to cost-effectiveness and cost-benefit analysis in vocational education is the need for much better data concerning inputs and outputs, and the interveing process which links the two. Unfortunately, we often do not have a very good idea of the particular input combinations which we could use to achieve any set of output objectives. There are obviously different ways of organizing the delivery of vocational education and training to achieve particular targets output. Although there may be administrative and legal constraints, we might wish to subsidize private industry to engage in job training to meet a particular skill requirement. Alternatively, we could use some kind of cooperative work-study program. A third possibility would be to organize certain programs entirely within existing school facilities. We need much better information concerning alternative possibilities for delivering vocational service, the cost implications of these alternatives, and their influence on outputs from the process.

Let us turn now to the ultimate consequences of vocational education activities. If we know the ultimate consequences of our programs and we value these results positively, ultimate benefits would be the value placed on such consequences. In the case of vocational education, there are benefits accruing to the individual (that is, to the student and his family). There are also benefits which spill over or are external to the individual and his family. These accrue to society in general. Some of these benefits one might be able to measure; at this point in time others appear to be unmeasurable. In some cases, we may just be unable to measure

such benefits with existing information and techniques. Some benefits occur in the present, but in the case of vocational education, most occur in the future, after students move through the program and enter the world of work. It is useful to separate those benefits that accrue to the individual and his family may be represented by the difference between gross earnings and what is paid to the government in the form of taxes. A related point is that the person who goes through some vocational education process may experience less unemployment. Annual earnings are a function not only of the rate of pay but also of unemployment experiences during the year. We should be very careful not to double-count these things.

A third benefit may be greater immediate satisfaction. This is a consumption component of benefits. The immediate satisfactions from being in school may be greater than the satisfactions which should result from some other activity. Of course, such benefits may be negative, depending on the case. Although these benefits may not be measurable, one should be aware of them in discussing the merits of particular programs. Of course, if nonmeasurable benefits are in fact basically the same irrespective of program, or if you are willing to assume that nonmeasurable benefits are basically the same, you may be able to make decisions on the basis of measurable benefits.

Depending on the curriculum and program, better health may be a benefit. The health of the student might be improved currently or in the future. For instance, the student may recognize the value of preventive medicine and take appropriate action when serious symptoms arise. There are other potential benefits irrespective of income level. Vocational education may have helped the student identify his strengths and weaknesses. He may have learned to read better and therefore enjoy reading

more, or he may have acquired skills that will enable him to enjoy boating on a Sunday afternoon. There are all kinds of possible future satisfactions that may occur, irrespective of any income earned in the future.

Another benefit occurring in the future concerns the individual's children. The student may transfer to his offspring certain values which society values highly. He may be able to take care of his child's health better. Yet another benefit (or cost, if negative) is the value of the option of going on for further education. Whether one exercises this option depends on the individual, his circumstances, and so on. In considering the value of a program to a graduate versus a jobout or a dropout, if moving to a higher level of education is conditional upon completing a lower level of education, then the option is of value to the graduate but not to the nongraduate.

In terms of benefits of society, what benefits accrue to those who are not part of the individual's family? First, others with whom the individual comes in contact may earn more than they otherwise would. In Bolivia, for example, I have a strong hunch that by improving certain parts of the educational system and by getting trained people into productive enterprises, there will be an improvement in the overall productivity of the economy. Regretably, it is really impossible to measure how much of the future earning of other people who work in a firm is attributable to the fact that some person has certain skills as a result of a vocational education. Another benefit may be a reduction in certain social costs through a reduction in the incidence of such things as crime and juvenile delinquency. To the extent that one can reduce their rate of occurrence one can reduce the cost paid by society for the prevention and cure of such social problems.

Another externality is lower administrative costs of income maintenance programs, such as unemployment compensation and public welfare. I should like to stress that it is the reduction in administrative costs, not the reduced payments themselves, which constitute a benefit. Welfare payments represent a redistribution of existing income; one man's income is another man's taxes. In terms of net benefits to society, it is only the reduction in costs of the administrative operation of these programs that are relevant calculations of benefit-cost ratios. Studies suggest that more highly educated people are more likely to vote. Therefore, increasing the education of people increases the extent to which people participate in the democratic process, if they behave more rationally, society may be better off as a result. You may wish to consider this point. Members of the economics profession often argue, for instance, that one of the major benefits from producing economists is developing an occasional person like John Maynard Keynes, who reorganizes our thinking about certain very serious social problems, so that we can avoid the enormous costs often associated with such problems. One might calculate such benefits and attribute them to economists if it proves impossible to identify which economists will be socially useful. Other possible benefits from education include more satisfying community life, better public services, and so forth.

Income redistribution through taxes and transfer payments present us with a unique problem. In general taxes, that is, the differences between gross and net earnings, contribute to the welfare of others in the society. Personal taxes may be counted as social benefits, but only to the extent the person paying additional taxes does not increase his consumption of public services to the full extent that he pays taxes on

additional income. If he does, his additional taxes reflect private benefits.

To summarize this discussion of the benefits of education, I would like to make five general observations. First, many benefits occur in the future while most costs occur in the present. A discounting procedure, consequently, is needed to conquer future benefits relative to present costs. Second, many benefits are unmeasurable at present or the measurement procedures are too inaccurate or costly to make quantification practical. Nevertheless, whether measured or not, such benefits should be identified by the analysis of planner. Third, many cost-benefit studies double-count benefits and one should be aware of this problem. Fourth, one should include all private and public benefits and costs in benefit-cost calculations. For example, if 50% of the costs of an educational program are paid by the public, a benefit/cost ratio of 1.5 from the student's view-point would represent a ratio of .75 for society as a whole. Fifth, only those benefits attributable to an educational program are relevant. One must statistically control for age, sex, socioeconomic background, and other factors intercorrelated with participation in a program when calculating the magnitude of benefits which actually result from program.

On the other side of the "profit and loss" statement is the cost of education, costs borne by the individual and by society in general. Earnings that students forego usually represent the largest single cost item when expanding post-secondary programs. In secondary programs, these costs may be ignored due to compulsory attendance laws, nevertheless, foregone savings still represent a real cost to society. Other costs attributable to participation in an educational program and usually borne

by the student include books, transportation, and special clothing. These should be included in an analysis of social benefits and costs.

Costs borne by society include teacher salaries, general operating expenses, rental value of the educational site, depreciation on buildings and equipment, add an interest premium on the present value of facilities. In a comparison of educational programs, only differences in costs need to be considered if one is considering only differences in benefits. As a criterion for decision-making, relevant costs include only future, additional costs. For example, only additional maintenance and operating costs are relevant to a decision to begin night classes if facilities are presently available and not fully utilized. Original expenditures for these facilities represent sunk costs and are irrelevant to a decision in this situation. If no facilities exist, then future costs include the value of facilities, should enter the planning decision.

Comparison of benefits and costs by means of calculating benefit-cost ratios, net present values, or internal rates of return involve a discounting procedure. Individuals continually make decisions to postpone current consumption, but require that the original value of their savings plus some premium be returned at some future date. For example, one may place $100.00 into a savings account with expectation of receiving $106.00 at the end of one year, representing a 6 percent rate of return. Similarly, the present value of $106.00 to be received at the end of one year is only $100.00 per year for three years and the present cost per student is $100.00 discounting at 6 percent yields a present value of $268.13, a net present value of $168.13 and a benefit/cost ratio of $2.68:$1.00.

In conclusion, I would say that benefit/cost analysis can probably

be used most successfully as a screening device to identify programs with high or low economic value. Private and public economic benefits, however, should not be considered as the only criteria in planning vocational programs. Other cultural and social criteria are equally important in rational decisions to achieve society's objectives.

APPENDIX H--LISTING OF INSTITUTE HANDOUT MATERIALS

1. Carroll, A.B., and Ihnen, L.A., Costs and Returns for Investments in Technical Schooling by a Group of North Carolina High School Graduates, Raleigh, North Carolina, North Carolina State University, 1967.

2. McGivney, J.H. and Nelson, W.C., "A Benefit/Cost Problem" (mimeograph), Columbus, Ohio, The Center for Vocational and Technical Education, 1968.

3. McGivney, J.H. and Nelson, W.C., "PPBS References", (mimeograph), Columbus, Ohio, The Center for Vocational and Technical Education, 1968.

4. McGivney, J.H. and Nelson, W.C., "A Case Problem" (mimeograph), Columbus, Ohio, The Center for Vocational and Technical Education, 1968.

5. Persons, E.A.; Swanson, G.I.; Kittleson, H.M.; and Leske, G.W., Investments in Education for Farmers, St. Paul, Minnesota, University of Minnesota, 1968.

6. Terrey, J.N., Program Budgeting and Other Newer Management Tools in Higher Education: A Description and Annotated Bibliography, Seattle, Washington, University of Washington, 1968.

7. The Ohio Foundations, Achieving Equality of Educational Opportunity, Columbus, Ohio, 1966.

8. U.S. Bureau of the Budget, Program Evaluation Checklist, Washington, D.C., 1966.

9. U.S. Department of Defense, A Primer on Project Prime, Washington, D.C., 1968.

10. U.S. Department of Health, Education, and Welfare, "The A, B, C's of PPBS", The Secretary's Letter, July, 1967.

11. U.S. Department of Veterans Benefits, Systematic Program Analysis, Washington, D.C., 1966.

12. U.S. General Accounting Office, Planning-Programming-Budgeting and Systems Analysis Glossary, Washington, D.C., 1968.

13. Vocational, Technical and Adult Education District 13, 1969 Budget, Green Bay, Wisconsin, 1968.

APPENDIX I--OBJECTIVE TEST

Date _____ Your Name _____ Your State _____

PPBS TEST
(Answer and Explain Your Answer)

True or False

False 1. PPBS tends to decentralize decision making.

False 2. PPBS is capable of providing state policy makers with information so that state policy makers can allocate funds with full knowledge of expected accomplishments.

False 3. Total wages of employed vocational graduates should be counted as benefits.

False 4. PPBS will eliminate the need for subjective opinions in decision making.

False 5. Program categories should coincide with the classification of budget inputs.

False 6. PPBS is basically a method to save money.

False 7. The average level of benefits and costs are more important that the incremental benefits and costs when evaluating program changes under PPBS.

False 8. Program benefits and costs are usually considered separately under PPBS.

False 9. Changes in the level of the interest rate cannot reverse the results of benefit-cost analysis.

False 10. The basic approach and method of PPBS to resource allocation decisions is essentially the same as that of the "Scientific Management School."

False 11. PPBS refers to Politics, Priorities, and Budgeting Systems.

False 12. There are sufficient data existing which indicate clearly which vocational programs are the most valuable.

Multiple Choice: Choose the answer most nearly correct.

1. Educational data sources are primarily:

X (a) local
____ (b) state
____ (c) federal
____ (d) local, state and federal

2. The most critical aspect of PPBS is to:

____ (a) establish monetary benefits
____ (b) maximize net present value of programs
X (c) establish specific objectives
____ (d) establish monetary costs

3. A program budget contains:

____ (a) costs projected over time
____ (b) benefits projected over time
X (c) benefits and costs projected over time
____ (d) benefits and costs

4. A program structure and financial plan usually covers:

____ (a) one year
X (b) five years
____ (c) ten years
____ (d) twenty years

5. PPBS is primarily concerned with:

____ (a) obtaining resources
X (b) allocating resources
____ (c) finding new resources
____ (d) accounting for resources

6. Historically, most governmental budgeting has been concerned with:

____ (a) planning
____ (b) management (performance)
X (c) control
____ (d) none of the above

7. As a system analyst in a state division of vocational education, you should consider only:

____ (a) local benefits and costs
____ (b) state benefits and costs
____ (c) local and state benefits and costs
_X_ (d) local, state and federal benefits and costs

8. In analyzing the benefits and costs of a program one should use the:

____ (a) private rate of interest
____ (b) public rate of interest
____ (c) pure rate of interest
_X_ (d) more than one rate of interest

9. Cost-Effectiveness Analysis should include only:

____ (a) fixed costs
____ (b) sunk costs
_X_ (c) future costs
____ (d) variable costs

10. A Planner's duties in PPBS require him to:

____ (a) schedule classes
_X_ (b) consider the construction of facilities
____ (c) prepare annual budgets
____ (d) hire teachers and staff
____ (e) all of the above
____ (f) none of the above

APPENDIX J--INTERACTION TESTS

Name	Date	State

THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION

PPBS PRE-TEST OCTOBER, 1968

Instructions

Listed below are the names of the participants in this Institute. Opposite each name is a range of choices of frequency of communication you have had with the person. For the purpose of this form, please indicate, by placing an "X" in the appropriate space, the number of times during the last year you have communicated with (contacted, been contacted by, phoned, talked to at a conference, etc.) each person whose name is listed.

Names of Participants	Number of Communications in Last Year			
	NONE	1-3	4-7	8 or MORE

____________	____________	____________
Name	Date	**State**

THE CENTER FOR VOCATIONAL AND TECHNICAL EDUCATION

PPBS POST-TEST OCTOBER, 1968

Instructions

Listed below are the names of the participants in this Institute. Opposite each name is a range of choices of frequency of communication you expect to have with the person. For the purpose of this form, please indicate, by placing an "X" in the appropriate space, the number of times during the next year you expect to communicate with (contact, be contacted by, write, phone, talk to at a conference, etc.) each person whose name is listed.

Names of Participants		Number of Communications in Next Year			
		NONE	1-3	4-7	8 or MORE

APPENDIX K--SUBJECTIVE TESTS

Date _____ Name _____ State _____

Pretest Subjective

1. What do you expect to gain from this institute?

2. What would you like to receive from this institute?

3. Describe your state division's present PPBS efforts.

4. Do you plan to adopt a PPBS system in your state? If so, when?

5. What value does PPBS hold for vocational education? Why?

6. What is the primary objective of vocational education? Why?

7. What is the primary benefit of vocational education? Why?

8. What is the primary measurable benefit of vocational education? Why?

Post-test Subjective _____ _____

Name State

1. Is your state division presently operating under PPBS?

2. Do you plan to implement PPBS in your state (SDVE)? If so, when?

3. What value does PPBS hold for vocational education? Why?

4. What is the primary objective of vocational education? Why?

5. What is the primary benefit of vocational education? Why?

6. What is the primary measurable benefit of vocational education? Why?

7. What did you gain from this institute?

8. What specific aspects of this institute were the most valuable to your work? In the next year? In the next five years?

9. What specific aspects of this institute were the least valuable to your work? In the next year? In the next five years?

10. If you were to come to another PPBS institute, what specific subjects or topics should be emphasized? Why?

11. What are your suggestions for improving the curricula and Instructional method for subsequent Institutes or workshops in PPBS?

12. What might be the benefits and costs of conducting PPBS regional workshops (Federal USOE Regions)?

APPENDIX L--PARTICIPANT FOLLOW-UP

Follow-up Questionnaire for Participants of the 1968 National Development Institute in Planning-Programming-Budgeting-Systems

The Center for Vocational
and Technical Education

The Ohio State University

Instructions: Please complete the questionnaire by providing the appropriate response or by filling in the blank with required information. Responses to all items will be held in the strictest confidence and used only in the tabulation of group data for analysis.

1. To what extent does your present position require the application of the underlying principles for each of the following?

	Extensive	Moderate	Little	None
a. Budgeting	( )	( )	( )	( )
b. Staffing	( )	( )	( )	( )
c. Facilities	( )	( )	( )	( )
d. Curriculum	( )	( )	( )	( )
e. Instruction	( )	( )	( )	( )
f. Community Relations	( )	( )	( )	( )
g. Accounting	( )	( )	( )	( )
h. Planning	( )	( )	( )	( )
i. Evaluation	( )	( )	( )	( )

2. How would you rate the quality of the institutes in terms of:

	Excellent	Very Good	Good	Fair	Poor
a. Instructional Materials	( )	( )	( )	( )	( )
b. Consultants-Lecturers	( )	( )	( )	( )	( )

c. Process and Procedures	( )	( )	( )	( )	( )
d. Facilities	( )	( )	( )	( )	( )
e. Relative to Your Situation	( )	( )	( )	( )	( )

3. Would you attend an advanced institute in PPBS if offered?

   a. ( ) Yes
   b. ( ) No
   c. ( ) Uncertain

4. Have your understanding and concepts of PPBS changed as a result of attending the institute?

   a. ( ) Yes
   b. ( ) No
   c. ( ) Uncertain

5. Have your responsibilities for PPBS related activities increased since attending the institute?

   a. ( ) Yes
   b. ( ) No
   c. ( ) Remained the same
   d. ( ) Uncertain
   e. ( ) Not applicable

6. Have you changed positions since attending the institute?

   a. ( ) Yes
   b. ( ) No

7. If you have changed positions, what is your new title and responsibilities?

8. Did attending the institute assist you in getting your new position?

   a. ( ) Yes
   b. ( ) No
   c. ( ) Uncertain
   d. ( ) Not applicable

9. Have you attended any additional non-credit PPBS leadership conferences or seminars since the institute?

   a. ( ) Yes (If yes please give title, location, and dates on the
   b. ( ) No back of this sheet).

10. Have you conducted any PPBS leadership conferences, seminars, or meetings since attending the institute?

a. ( ) Yes (If yes please give title, location, dates, and number
b. ( ) No of participants on the back of this sheet).

11. Are you currently directly involved in any type of PPBS activities?

a. ( ) Yes
b. ( ) No

If yes complete the following:

c. Percent of time devoted to PPBS activities

Prior to attending the institute _____
Current activities _____

12. Did the institute provide new insights for PPBS activities?

a. ( ) Yes
b. ( ) No

13. Would you recommend institutes similar to the one you attended to your professional friends and/or other supervisory and staff members?

a. ( ) Yes
b. ( ) No
c. ( ) Uncertain

14. In your opinion future leadership institutes would be most effective with:

a. ( ) More participants
b. ( ) Same number of participants
c. ( ) Fewer participants than were in the Institute

15. In your opinion how many days' duration should an institute of this type be:

a. ( ) 3 - 5
b. ( ) 6 - 10
c. ( ) 11 - 14
d. ( ) 14 or more

16. What changes have you made in your technical education program as a result of knowledge gained from the institute?

a. Implemented new technical education programs

1. ( ) Yes Identify_____
2. ( ) No
3. ( ) Not applicable

b. Revision of existing curriculum

1. ( ) Yes
2. ( ) No
3. ( ) Not applicable

c. Participation in program evaluation

1. ( ) Yes
2. ( ) No

d. Conducted in-service teacher education programs

1. ( ) Yes
2. ( ) No
3. ( ) Not applicable
4. ( ) Other (specify) _____

e. Increased activities in the Community Relations Program for Technical Education. (check one)

1. ( ) Extensive
2. ( ) Moderate
3. ( ) Little
4. ( ) None

f. Have you planned new facilities or renovation of existing facilities for technical education since attending the institute?

1. ( ) Yes
2. ( ) No
3. ( ) Not applicable

g. Have you revised and improved any aspects of budgeting or other financial procedures for operating your program in vocational education?

1. ( ) Yes
2. ( ) No
3. ( ) Not applicable

h. Have you revised and improved the methods of professional staff recruitment?

1. ( ) Yes
2. ( ) No
3. ( ) Not applicable

i. Did your attending the institute stimulate the desire to develop new master plans for technical education?

1. ( ) Yes
2. ( ) No
3. ( ) Uncertain
4. ( ) Not applicable

17. Please make any comments you feel would improve the quality of any future institutes.

a. Describe your state division's present PPBS efforts.

b. Do you plan to adopt a PPBS system in your state? If so, when?

c. What specific aspects of the PPBS institute were the most valuable to your work in the last year?

d. What specific aspects of the PPBS institute were the least valuable to your work during the last year?

e. If you were to attend another institute, what specific topics should be emphasized?

APPENDIX M--PPBS PUBLICATIONS

1. McGivney, Joseph H. and Nelson, William C., Planning, Programming, Budgeting Systems for Educators, Volume I: An Instructional Outline, Columbus, Ohio, The Center for Vocational and Technical Education, 1969.

2. McGivney, Joseph H., and Nelson, William C., Planning, Programming, Budgeting Systems for Educators, Volume II: A Case Problem, Columbus, Ohio, The Center for Vocational and Technical Education, 1969.

3. *McGivney, Joseph H. and Nelson, William C., Planning, Programming, Budgeting Systems for Educators, Volume III: An Annotated Bibliography, Columbus, Ohio, The Center for Vocational and Technical Education, 1969.

4. *Nelson, William C., Planning, Programming, Budgeting Systems for Educators: A Research Bibliography, Columbus, Ohio, The Center for Vocational and Technical Education, 1969.

* To be published by The Center, Spring, 1970.