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ABSTRACT

This workshop was organized to acquaint State and local officials concerned with distributive education and planning, programing, and budgeting techniques. The workshop was designed to (1) develop an understanding and appreciation for systematic planning and programing techniques, (2) develop an understanding of the social and economic problems that face distributive education, (3) acquaint its participants with types of base line data needed to develop balanced programs, (4) develop an understanding of the scope of the distributive education program including pre-high school services and interdisciplinary approaches, and (5) develop a model for use in program development and evaluation. Consultants gave presentations covering seven major areas of systematic program planning. Participants completed a workshop problem designed to take them through a total PPB experience. They produced a model for use in PPB for distributive education personnel. [Not available in hard copy due to marginal legibility of original document.] (Author/MF)

FINAL REPORT
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Workshop on Planning, Implementing, and Evaluating Balanced Programs in Distributive Education

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May 1969

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
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OFFICE OF EDUCATION

WORKSHOP ON PLANNING, IMPLEMENTING AND EVALUATING BALANCED PROGRAMS IN DISTRIBUTIVE EDUCATION

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Logan, Utah

May 31, 1969

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U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
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Grateful appreciation is expressed to Mr. Harvey Hirschi, Associate Director and Mr. Ronald Strand, Instructor, for their help and contributions in organizing and conducting this workshop.

Appreciation is also expressed to U.S. Office of Education personnel for their help and assistance. The efforts of the workshop staff made the tasks associated with the workshop and this final report much easier.

Mostly, appreciation is expressed to the participants. Their cooperation and assistance during all phases of this workshop have been very greatly appreciated. Most importantly, their friendships will always be treasured by the director and the workshop staff.

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SUMMARY

In the fall of 1965 the President directed most Federal departments and agencies to apply the same system of planning programming and budgeting (PPB). As a result of this directive, most states and local communities have also begun to examine the feasibility of PPB at state and community levels. In an effort to help state and local officials who have responsibilities in the area of vocational education, the U.S. Office of Education sponsored a series of workshops to help these state and local vocational educators become better acquainted with PPB techniques.

This workshop was designed to assist state and local distributive education supervisors to become knowledgable in the area of PPB. Specifically, the workshop was designed to allow the participants to: (1) develop an understanding and appreciation for systematic planning and programming techniques; (2) develop an understanding of the social and economic problems that face vocational education; (3) become acquainted with types of base line data needed to develop balanced programs; (4) develop an understanding of the scope of the distributive education program including pre-high school services and interdisciplinary approaches to vocational education; and (5) develop a model for use in program development and evaluation.

The workshop featured several consultants in the area of PPB. These individuals gave presentations covering the seven major areas in systematic program planning and were also available for consultation with workshop participants as the participants completed a workshop problem which was designed to take them through a total PPB experience. As a result of the workshop a model for use in PPB for distributive education personnel was designed. The participants were encouraged to implement the various aspects of PPB in their various states and localities and to share their experiences with other vocational educators in their respective states.

Thirty-eight participants representing thirty-six states and the District of Columbia completed the two-week workshop. It is still too early to evaluate the total impact of the workshop. However, it is felt that those individuals who implemented the various phases of PPB will aid their respective states greatly in effecting improved programming in distributive education. It is recommended that, for future workshops designed for state supervisory personnel, local coordinators should not be asked to attend. This action is recommended because by the time information is given to the proper authorities there is little hope that the suggested program will be implemented. It is further recommended that follow-up conferences be conducted to determine if PPB techniques are being implemented in the various states.

INTRODUCTION

Statement of the Problem

Distributive Education is experiencing phenomenal growth. There has been a sharp increase in enrollment during the last few years. Future enrollment estimates make it even more important that proper programming in distributive education be assured. Conservative estimates indicate that by 1975 the current enrollment figure of 104,000 will be in excess of 500,000 at the high school level alone. This means that during the next decade distributive education program growth will increase at least five times. Correspondingly the demands on the various state and metropolitan supervisors in distributive education will increase drastically. In order to facilitate the establishment of new programs and to make proper use of new procedures in systems analysis, it is essential that these supervisors understand these procedures and the rationale involved in their use and implementation.

As a result of this workshop, the participants were taught how to apply systems analysis in planning and programming techniques to their various distributive education responsibilities. They developed an understanding for the importance of systematic planning and program development. They also became better acquainted with the types of base line data needed to develop balanced programming. Attention was also given to the social, educational, and economic problems facing vocational education as well as consideration of pre-high school and inter-disciplinary approaches to vocational education as they relate to the mission of distributive education.

Objectives

The program was designed to allow the participants to: (1) Develop an understanding and appreciation for systematic planning and programming techniques; (2) Develop an understanding of the social and economic problems that face vocational education; (3) Become acquainted with types of base line data needed to develop balanced programs; (4) Develop an understanding of the scope of the D.E. program, including pre-high school services and inter-disciplinary approaches to vocational education; and (5) Develop a model for use in program development and evaluation.

Specifically the participants in the workshop gained insight and understanding concerning the following areas:

1. The importance of systems analysis, including an overview of what is involved in systems analysis.

2. Background material concerning utilization of Planning, Programming, and Budgeting.

3. The major areas of social and economic concern to which education has an input.

4. The importance of relationships within vocational education, including pre-high school and interdisciplinary approaches in distributive education.

The increasing demands being placed on state and local supervisors of distributive education make it imperative that these supervisors be able to organize their time and programs in such a fashion that they obtain maximum benefits from their efforts. The application of systems analysis procedures will greatly facilitate any effort in the area of planning, implementing and evaluating programs in vocational education. As a result of attendance at this workshop, these state and local supervisors will be able to apply systematic planning and programming techniques. In addition they will be qualified to assist others in different areas of vocational education who have similar decisions to make concerning various aspects of vocational education programs.

Significance of the Project

The continued expansion of distributive education programs demands that the time and effort expended by supervisory personnel be carefully and systematically applied. Participants in the workshop will not only be able to apply systems analysis to their own programming but will be able to disseminate information to others in their localities to relate their planning to the mission of vocational education.

The knowledge and understanding gained by the participants in this workshop are to be put to use by them as they plan alternatives for making distributive education services more widely available. In addition they will be expected to share their knowledge with other individuals in their states and localities who can benefit from having an understanding of systems analysis and how to apply the various principles to planning, implementing, and evaluating programs in vocational education. The increased demands being made upon state and local supervisory personnel makes it essential that the time and effort expended by these individuals be used profitably. The workshop was designed to help the participants achieve understanding of systems analysis and PPB.

METHODS AND PROCEDURES

The workshop was structured to allow for participants to listen to selected consultants and then apply the information (See Appendix C) given them by these consultants in solving a problem (See Appendix D) centered around the hypothetical state of "Transylvania". Participants were divided into workshop groups (See Appendix E) whose functions are explained in full in the workshop problem and procedures section. Each group was required to work through the various phases of the total problem. In this way, participants were able to apply information in a systematic way, much the same as they would be called upon to make applications upon returning to their various localities.

In order to help the participants understand their assignment better, a pre test and a post test (See Appendix F) were given to determine the knowledge the participants had in PPB. In this way the staff personnel were better able to help the participants as they worked in their groups (See Appendix D).

One of the major outcomes of the workshop was the development of a model for use by distributive education personnel in implementing PPB into their various programs. This model is described on pages 62-88.

Five months after the completion of the workshop, each participant was sent a follow-up questionnaire. (See Appendix G) The purpose of this questionnaire was to determine what action had been taken to implement PPB in the various states as a result of the workshop.

Selection of Participants

The directory of state supervisory personnel in distributive education, published by the U.S. Office of Education was used to determine the names of individuals involved in distributive education activities. In addition the names of supervisors of distributive education in large metropolitan areas were also obtained from the U.S. Office of Education. The individuals appearing on these two listings were contacted by letter. (See Appendix A). In cases where state personnel could not attend, selection of participants was left to the discretion of the state supervisors. The selection of participants was designed to encompass as wide a geographic area as possible. Attention was given to having at least one participant in attendance from as many states as possible. Participants were notified by letter concerning their selection. (See Appendix B). Of the thirty-eight individuals who completed the workshop, thirty-six states and the District of Columbia were represented. Only Wisconsin had

two representatives. This was done because of the educational structure in Wisconsin which as the secondary and vocational programming under completely separate divisions.

Analysis of Participants

Of the thirty-eight individuals who completed the workshop fifteen were either state supervisors of distributive education or were on the state supervisor's staff, twelve were supervisors of distributive education in large metropolitan areas, and eleven were local coordinators. The local coordinators were selected only after they had been designated by the state supervisors as the individual selected to represent their respective states.

STAFF PERSONNEL

Director

Gary R. Smith is the teacher educator for distributive education at Utah State University. Mr. Smith has taught at the secondary level for six years in the Pocatello, Idaho school system and has been at Utah State University the past two years. He will complete requirements for the EdD degree from the University of Idaho in August of this year. In addition to serving as teacher educator for Utah State University, Mr. Smith is also responsible for all in-service training programs for the state of Utah.

Mr. Smith has served as assistant director for a national research project to develop curriculum for distributive education. This project was funded by the U.S. Office of Education. He has also served as a consultant for Gregg Publishing Company regarding proposed publication of a series of overhead transparencies for distributive education. He has just completed a manual for distributive education entitled Display Promotion Activities. Mr. Smith has also co-authored The Common Market and the U.S. and Distributive Education Library Lists. He is a member of Phi Delta Kappa, Phi Kappa Phi, AVA, NBEA, UVA, WBEA, and UBEA. He is also a part vice president of the Idaho Vocational Association.

Associate Director

Mr. Harvey Hirschi is currently employed as coordinator, vocational and technical education, Utah State Board of Education. He did his undergraduate and graduate work in education and sociology at the University of Utah. He is currently completing requirements for the EdD degree in Educational Administration at the University of Utah.

He worked for four years in the field of guidance and counseling and also served as a school social worker in the Department of Pupil Personnel, Salt Lake School District. He served five years as Dean of Students at Utah Technical College. He has completed assignments with various committees with different agencies in the community. He is currently a major in the U.S. Air Force Reserve.

Mr. Hirschi is affiliated with Phi Delta Kappa, Youth Advisory Council, Support Committee of the White House Conference on Youth, American Personnel and Guidance Association, American Vocational Guidance Association, Utah Personnel and Guidance Association, Utah School Counselors Association, Utah College Personnel Association and Utah Education Association.

Instructor

Mr. Ron Strand is currently employed as the State Supervisor of Distributive Education in the Vocational-Technical Division of the Minnesota State Department of Education. He did his undergraduate and graduate work in Distributive Education at the University of Minnesota.

He is currently serving on the Board of Directors of Distributive Education Clubs of America, Inc. and on the American Vocational Association Policy Committee for Distributive Education. He has served as a guest faculty member at the University of Minnesota and at St. Cloud State College as well as in the Small Business Administration Business Management Seminar program and the American Institute of Banking Instructional Program. Mr. Strand has extensive teaching and teacher-coordination experience at the secondary, post secondary and adult levels in distributive education, as well as extensive experience in direct selling, retailing, industrial sales and marketing management.

He has participated in special workshops on planning, programming and budgeting systems which were conducted in Minnesota by persons from the U.S. Office of Education and the American Vocational Association. He has initiated numerous seminars and workshops for vocational education in Minnesota and the upper midwest.

CONSULTANTS

Dr. Garth L. Mangum

Garth L. Mangum is a native of Utah. After a number of years as a construction worker, truck driver, coal miner and Mormon missionary, he began a belated college career leading to a B. S., from Brigham Young University and an M.P.A. and Ph.D. from Harvard in 1956, 1958 and 1960 respectively. He taught Economics at Harvard and Brigham Young Universities.

In government, he has been a consultant to the Bureau of Labor Statistics, the Bureau of the Census, and the Appalachian Commission, Senior Staff Analyst of the Presidential Railroad Commission, a special Mediator with the Federal Mediation and Conciliation Service, Research Director of the Senate Subcommittee on Employment and Manpower, Executive Director of the President's Committee on Manpower, and Executive Secretary of the National Commission on Technology, Automation, and Economic Progress.

Dr. Mangum is presently Research Professor of Economics and Co-Director of the Center for Manpower Policy Studies at the George Washington University where he is directing an evaluation of federal manpower policies and programs.

He is author of numerous books and articles in the labor and manpower fields.

Dr. Joseph H. McGivney

Dr. McGivney is the Principal Investigator, National Development Institute in Planning, Programming and Budgeting Systems.

Dr. McGivney is currently employed as a Project Director at The Center for Vocational and Technical Education, The Ohio State University, (June 1967-present). Dr. McGivney received his Ph.D. from the University of Wisconsin writing a dissertation concerned with vocational education decision-making at the state level in Wisconsin over the period, 1909-1967. In October, 1967, he attended the U. S. Civil Service Commission's Seminar for Executive Orientation in PPBS. In November, 1967, he attended the "Operations Analysis" conference sponsored by the USOE.

Also in November he served as a consultant-evaluator to the program planning institute for vocational educators which had been conducted at the University of Maryland in June, 1967. During 1966-67 he served as research associate at the Center for Studies in Vocational and Technical Education at the University

of Wisconsin contributing to two studies in decision-making for vocational education.

He has served as administrative officer for the Wisconsin State Board of Vocational Education, where he developed that state's first PPB system (as contrasted with the traditional "line item-object" budget) for vocational education and vocational rehabilitation and developed the state-wide computer-based student, staff and property accounting system for vocational education (1962 - 1965). He served as administrative and budget analyst for the Wisconsin Department of Administration (Central Budget Agency) where he was responsible for fiscal, public policy and legislative analysis for the State Vocational Board (and other agencies) (1959 - 1962).

Dr. Norman F. Hyatt

Dr. Hyatt is Program Director for World Wide Education and Research Institute.

Dr. Hyatt received his Ed.D. at the University of Oregon in 1964. His dissertation was Public School Expenditures Related to Selected Sociological and Economic Characteristics of Utah School Districts. He received his Master of Science Degree from Brigham Young University in 1949, and his B.S. from Brigham Young University in 1948. He served in the U.S. Army during World War II. Dr. Hyatt has had extensive experience both as an administrator and a teacher in the public school system in Utah. In addition, he has served as executive secretary of the Teachers Association, Long Beach, California. He also has served as director of the Utah Research Coordinating Unit for Vocational Technical Education, both as a university professor and as a visiting professor.

As a visiting professor, he has served at the University of Oregon and the University of Nebraska. His professional affiliations include Sigma Phi Sigma, Phi Delta Kappa, National Education Association, American Vocational Association.

Dr. Hyatt has also done Post-Doctoral work primarily in the area of PERT. He has also done extensive writing in the area of education.

Dr. Bernard C. Nye

Dr. Nye is currently State Supervisor of Distributive Education in Ohio. He received his Master of Science at Bowling Green State University in 1955 and his B.S. at The Ohio State University in 1950. Dr. Nye received his Doctor of Philosophy Degree in September, 1967, from The Ohio State University. His major areas of concentration are Distributive Education and Adult Education with a minor in School Administration.

He is currently serving his second term as president of the National Association of State Supervisors of Distributive Education (NASSDE), and is also a member of the National Distributive Education Policy and Planning Committee. He has served as a guest faculty member at The Ohio State University and the University of South Carolina. Dr. Nye has had extensive teaching experience at a secondary level in Distributive Education and in addition has worked in the business field as a salesman and manager for different businesses.

He graduated cumlaude from The Ohio State University and is a member of Kappa Phi Kappa, Pi Omega Pi, Delta Pi Epsilon, and Lambda Chi Alpha. In addition, Dr. Nye has authored several articles and manuals including Wholesale Mid-Management, 2 volumes, prepared under a General Electric research grant.

Dr. Quinn McKay

Dr. McKay is Dean, School of Business, Weber State College.

Dr. McKay received his Doctor of Business Administration Degree in 1960 from Harvard. His dissertation was on Executive Development. He received an M.B.A. Degree from Harvard in 1956. His undergraduate degree was in accounting from Brigham Young University in 1954.

Dr. McKay was responsible for the development of the School of Business at Ahmadu Bello University in Zaria, Northern Nigeria and was also director of the M.B.A. program at Brigham Young University. He served as a visiting lecturer and research advisor to a Ford Foundation Project at the University of Rangoon in Burma from 1956 to 1958. He served in the U.S. Marine Corps in the South Pacific during World War II. He has also had extensive experience in business.

Dr. McKay is a member of Phi Kappa Phi, Delta Phi Kappa, the American Management Association, and the Academy of management, and is also active in civic organizations currently serving as a director of the Ogden Chamber of Commerce. He is listed in Who's Who in American Education, Leaders in Development, and American Men of Science.

Dr. McKay has also written extensively including a nearly completed volume entitled, Management in Developing Countries.

Mr. William C. Nelson

Mr. Nelson is Project Associate, National Development Institute in Planning, Programming and Budgeting Systems.

Mr. Nelson is a Research Associate at The Center for Vocational and Technical Education, The Ohio State University, (August, 1967 - present). He is presently working toward a Ph.D. degree in agricultural economics with minors in econometrics and development at Ohio State University.

He received his bachelor's degree from North Dakota State University in 1965 and his Master's degree from the University of Arizona in 1967. He was a part-time research assistant at North Dakota State University, and at the University of Arizona from 1964 to 1966.

During the 1966-67 academic year, he was a full-time research associate at the University of Arizona with both teaching and research responsibilities and contributed a paper to the annual meeting of the Western Farm Economics Association entitled "Economic and Social Factors Influencing Aggregate Undergraduate Enrollment in Colleges of Agriculture."

Since joining the Center staff as a research associate in PPBS on August 1, 1967, Mr. Nelson has contributed to a review of the literature on cost-benefit analysis, PPBS, and economic decision models for education. Under the direction of the principal investigator he is currently contributing to the development of instructional materials related to PPBS consisting of a review of cost-benefit studies development of case studies problems, decision models designed specifically for use in vocational education planning, programming and budgeting systems.

Dr. Vernon Buehler

Dr. Buehler is Associate Professor, Business Administration, Utah State University.

Dr. Buehler received his Ph.D. degree from George Washington University in 1964. His major area of study was Economics. He received a CPA degree in 1953 and M.B.A. in 1948 from Harvard. His undergraduate degree was in Accounting from Utah State University in 1941.

Dr. Buehler is a retired U.S. Army Colonel with twenty-six years of experience, including Project Officer for Development and Implementation of the U.S. Armies Integrated Program--Budgeting--Accounting Systems, a faculty member at Industrial College in Armed Forces, Senior Comptroller Advisor to the Republic of Korea Army, and Director of the Economic Impact Studies in the Office of the Secretary of Defense.

WORKSHOP PROBLEM AND PROCEDURES

The workshop problem was concerned with the development of balanced programs in Distributive Education for the hypothetical state of Transylvania. The geographic description of this state is attached. (See pp. 19-20). The nature of existing Distributive Education Programs is also attached. (See pp 13-18) Participants used this information and additional information that was provided during the workshop (See Appendix D), and whatever information they could ferret from the staff to solve the following problem.

DE in '73! Participants developed a five year program for planning, implementing, and evaluating balanced programs in Distributive Education for the state of Transylvania. This included a five year plan for Vamp and Serling as well as for the entire state.

The workshop problem was to be approached and solved through a series of seven separate case problems (See Appendix D) which were presented to the workshop participants at appropriate times throughout the workshop. The sequential solution to the seven case problems lead to a total package which fulfilled the challenge of the workshop problem.

Workshop participants were divided into eight groups. (See Appendix E) Each group prepared a written report on each of the case problems which when assembled formed a report on the total workshop problem and each group made a summary report of the total package on Friday morning of the second week.

Additional ground rules covering the workshop problem were as follows:

1. Each of the 8 groups had responsibility for the entire state of Transylvania.

2. Each group selected its own leadership or designed some structure for carrying out the institute problem. Each group provided for a city supervisor of Vamp, a city supervisor of Serling, two regional or assistant state supervisors and head state supervisor.

3. Any group could request information or consultation with any other group or any of the conference staff. Such action could conflict with the conference schedule.

4. Participants were encouraged to call "National Clinics," "Regional Clinics," and "Inter-state Clinics." Such clinics were for State Supervisors, Assistant State Supervisors, City Supervisors, or any other combination of participants or roles they held.

5. Participants were encouraged to make extensive use of the consultants, resource materials available, institute staff, and any other appropriate resources as they related to the institute problem.

A hypothetical state, referred to as "Transylvania" will be used illustratively for the application phase of the workshop. This state has the geographic, economic and social characteristics necessary to provide the range of challenges of our educational planning. A map of the state is attached (see page) along with a list of its cities and the nature of distributive education in each. The following data will give further information on the state.

1. The state of Transylvania is very much like the are of Northern Illinois and Southern Wisconsin. The southern border would follow Highway 9 (Ill.) and the northern border would be somewhat south but parallel to Highway 21 (Wis.). The northeast corner of the state would project into the lake and have a western border of the Fox River. The western border would be like that of Illinois and Indiana.

2. The geographic factors (land, rivers, roads, cities, etc.) would be like that of Illinois and Wisconsin within the above boundaries. The economic and social conditions are also comparable.

3. The major cities are listed on the attached sheet (see page) and are comparable to their counterparts shown in parenthesis. You should become acquainted with these cities, their population, and other factors.

Profile of Transylvania - June 1968

Population (1965) - 9,500,000
Labor Force (1965) - 2,945,000
Percent distribution of employment and occupational groups in Transylvania:

Professional and Technical Kindred Workers	16%
Managers, Officials and Proprietors	10%
Clerical and Kindred Workers	17%
Sales Workers	9%
Craftsmen, Foreman and Kindred Workers	14%
Operative and Kindred Workers	16%
Service Workers	14%
Laborers	4%

There are 118 vocational distributive education high school level programs in Transylvania. Larger cities also have post secondary distributive education programs. There are 9 community college programs and 15 technical institute programs.

The curriculum of the high school program has followed the typical pattern of Plan B or C programs as provided under the George-Barden Legislation. The post secondary programs have about 64 semester hours divided equally between generally related and directly related subject matter.

The following statements describe the programs in the major cities.

Hitchcock--Two high school programs established in the late 1930's. Has a community college (community college as used here implies a junior college plus a vocational, technical, and adult education offering of at least five major technologies) which started a marketing education program in 1949. Staff in all programs well qualified.

Serling--Currently there are 44 high school programs with some as old as 1935 and others in their first year of operation. There are 4 community colleges and one large technical school. Staff in the high school programs is constantly changing and the quality goes from poor to average from one semester to the next. Community college and technical school staff is qualified but inadequate in number to do the amount of work that needs to be done. There is one city supervisor for D. E. who works under the Director of Business Education, Serling Public Schools.

Vamp--All of the D. E. programs here (9) are new within the last two years. Programs are not uniformly well conceived and staff is eager but somewhat at a loss as to how to set up vocational education programs. The new programs were all staffed by teachers from within the school system. There is one community college and a technical school in Vamp. Both are large and have tremendous potential for expansion in D. E. The adult D. E. program has been excellent and in operation for over 45 years.

Lobo--Has one D. E. program in the high school that has been good and bad over the years. The program does not have strong administrative support and the teacher-coordinator is not strong. Lobo as a city does not feel closely associated with the rest of the state. There is a technical school D. E. program with a new coordinator as of last fall. Progress has been made in developing the curriculum this year.

Bella--This city has a new high school with a modern D. E. lab. The program is new and progressive. The administration is attempting to make their school one of the most comprehensive in the state. The technical school is not too strong. The competitiveness with Lugosia secondary offerings.

Lugosia--This city does not have D. E. in the high schools. There has been talk on and off for ten years about putting in a program but no action. The technical school is weak because of the above situation. Some adult D. E. but nothing very exciting. The home economics department in the high school is stirring up a lot of interest in occupational training and has a top notch advisory committee working on a new program for next year.

Potion--The D. E. program has been in operation for 19 years. The teacher-coordinator who started the program is still there. Few students get into the program any given year because of rigorous selection procedure. The coordinator will not take anyone who doesn't have exceptional promise and fit into a specific image of the "kind of student I work with." Administration does not know what to do--get rid of the coordinator, get rid of the program, or do both. There is an adult program in D. E. which the high school teacher-coordinator will have nothing to do with even on a verbal basis.

Milberg--Two high school programs, one which is new this year. The technical school has an excellent marketing program but is understaffed. There is a new technical school facility being built which will permit expansion of program offerings. There is close cooperation between the high schools.

Walberg--The high school program is well established and operates smoothly within the school. The coordinator has had both cooperative and non-cooperative programs for several years. The technical school coordinator is always busy doing things but rarely ever finishes a job. The man is forever doing things for people that has nothing to do with the operation or improvement of the program. His rapport with the community is terrific.

Nider--The high school program is new and operated by a person who was trained as a T & I teacher. The program has floundered badly but close supervision by the state staff has kept it going. The technical school teacher-coordinator has his hands full with that program and cannot and will not help the high school program (and might not even be welcomed if he did offer). The technical school adult offerings have not been successful.

Horror--This is only half a city. The major part is across the river in another state. The high school D. E. coordinator tries to place students in business across the river but has had numerous run-ins with the coordinators of the two D. E. programs in Scare (Scare is the other part of town across the river). Last spring a meeting was called to work out this problem but no one from Scare showed up. There is a technical school in Horror. The marketing program is 4 years old but still marginal in every respect. The technical school coordinator is not aggressive and prefers to teach accounting rather than marketing.

Amulet--The high school D. E. program has been very successful over the last 12 years. There are three groups of students in D. E., each group handled in the school by a different teacher (retail, service, special) but all coordinated by the same coordinator. The community college in Amulet has a minimal vocational marketing program that has never really gotten off to a good start since it was established in 1954.

Spirit--Only a high school program here. The program was started in 1942 primarily to help retailers get help during the war. Since it has been more a miscellaneous work-study program than a vocational D. E. program. The teacher-coordinator feels that the program is meeting a real need and does not want to change.

Spook--The high school program here is moderately successful. The turnover of teacher-coordinators has been very high. The high school program has been in operation since 1946 and the advisory committee has remained virtually unchanged since that time. The technical school marketing program was started in 1961 and specializes in food merchandising.

Twilight--Three high schools have D. E. Two of the programs have been reasonably successful over the last ten years. The third program has been a whipping boy for the school in which it is located, is highly academically oriented, and the staff feels it is an insult to them to have the program in the school. The coordinator of this program is slowly losing his hair. The technical school has an excellent marketing program including fashion merchandising. The school is attempting to become a community college.

Frankenstein--A new high school was built here three years ago. Although D. E. had been in the school for nearly 20 years, the new building

did not provide any special facilities for D.E. The coordinator is active in Lions and other civic groups and has been with the program for 15 years.

Bundu--The D.E. program has been approved for next fall. The teacher-coordinator has not been selected but some preliminary planning has been done.

Stricklund--The program at Stricklund was a diversified program until three years ago. They not have D.E., T & T, and O.E. The number of students in each program is not great and training stations have been difficult to find. There is some administrative pressure to return to a diversified program.

Drac--Four high schools have D.E. under the supervision of a city coordinator. Each school has a teacher-coordinator who does only a limited amount of coordinating. Training stations, placement and routine coordination is handled by the city supervisor. The community college program is well received in the community and has been improving continuously since starting in 1959.

Hauber--One very successful high school program conducted by a dynamic coordinator. The students have won first place in nearly every state club contest for the past three years. At the national level the students have been equally successful. The merchants in Hauber support the program willingly and have provided considerable aid to the club program. The other high school also has a good program but lives in the shadow of the more successful. The technical school program in D.E. is just new. The teacher-coordinator had been a high school coordinator and is finding the adjustment more difficult than expected.

Lindheim--No high school D.E. It was discussed but the technical school director heard about it and quickly added a D.E. program. This has, for the time being, cooled support for a high school D.E. program. The technical school program is just a one-year offering but the director promises it will be a full-fledged two-year associated program next year.

Wardwell-A high school D.E. program that is growing steadily and has excellent support from the community. The coordinator has built some excellent programs for the adult business community. Normally this would be done by the technical school D.E. coordinator but for the past 7 years the technical school has not had D.E. Next year they will have and the new teacher-coordinator (experienced) arrives mid-summer.

Cory--Five high school programs of long standing. The teacher-coordinators have worked out a system of communication among programs and also meet weekly to talk over their common problems. There is no city supervisor as such. One coordinator has a severe case of hoofitis (foot in the mouth) and some weeks the other four coordinators spend most of their time trying to smooth over or correct a situation he has created. There is a community college program that has been well received and is growing in enrollment every year.

Raven--Two high school programs here. Both have been in operation since before World War II. The programs attract below average students and it has been difficult to get training stations the past few years. The agriculture teacher has made the most of this situation and now has approval to run his own agri-business cooperative program. He plans to teach the marketing and do all of the other work in running the cooperative program. Raven does not have a community college or a technical school.

Danburg--The Danburg technical institute has a two year marketing program which is no better now that it was two years ago when the area supervisor first observed the program. Danburg is a city of about 50,000 population, well diversified in business, industry and agriculture. It is located in a large productive agricultural area; has natural recreational attractions, good roads and transportation facilities and considerable promise as a growing city. The city has a long record of dynamic progressive action. Good city facilities; modern streets and lightings; urban areas growing under favorable zoning regulations; several new elementary schools; modern junior and senior highs plans; numerous parks throughout the city. There is no high school D.E. in Danburg.

Workshop problem (continued)

TABLE I

DISTRIBUTIVE EDUCATION ENROLLMENT - (1967-68)

	Male	Female	Total
Grade 11 (Non-cooperative preparatory)	1,191	939	2,130
Grade 12 (" " ")	596	361	957
Grade 12 (Cooperative)	1,089	1,008	2,097
Grade 13	695	237	932
Grade 14	516	104	620
Adult (Preparatory)	233	374	607
Adult (Supplementary)	4,188	3,017	7,205
TOTALS	8,508	6,040	14,548

Distributive Education enrollment over the past 10 years has increased an average 17% per year with a high of 25% and a low of 9%. A percentage increase from 1966-67 through 1967-68 was 22%.

FIGURE I

STATE OF TRANSYLVANIA

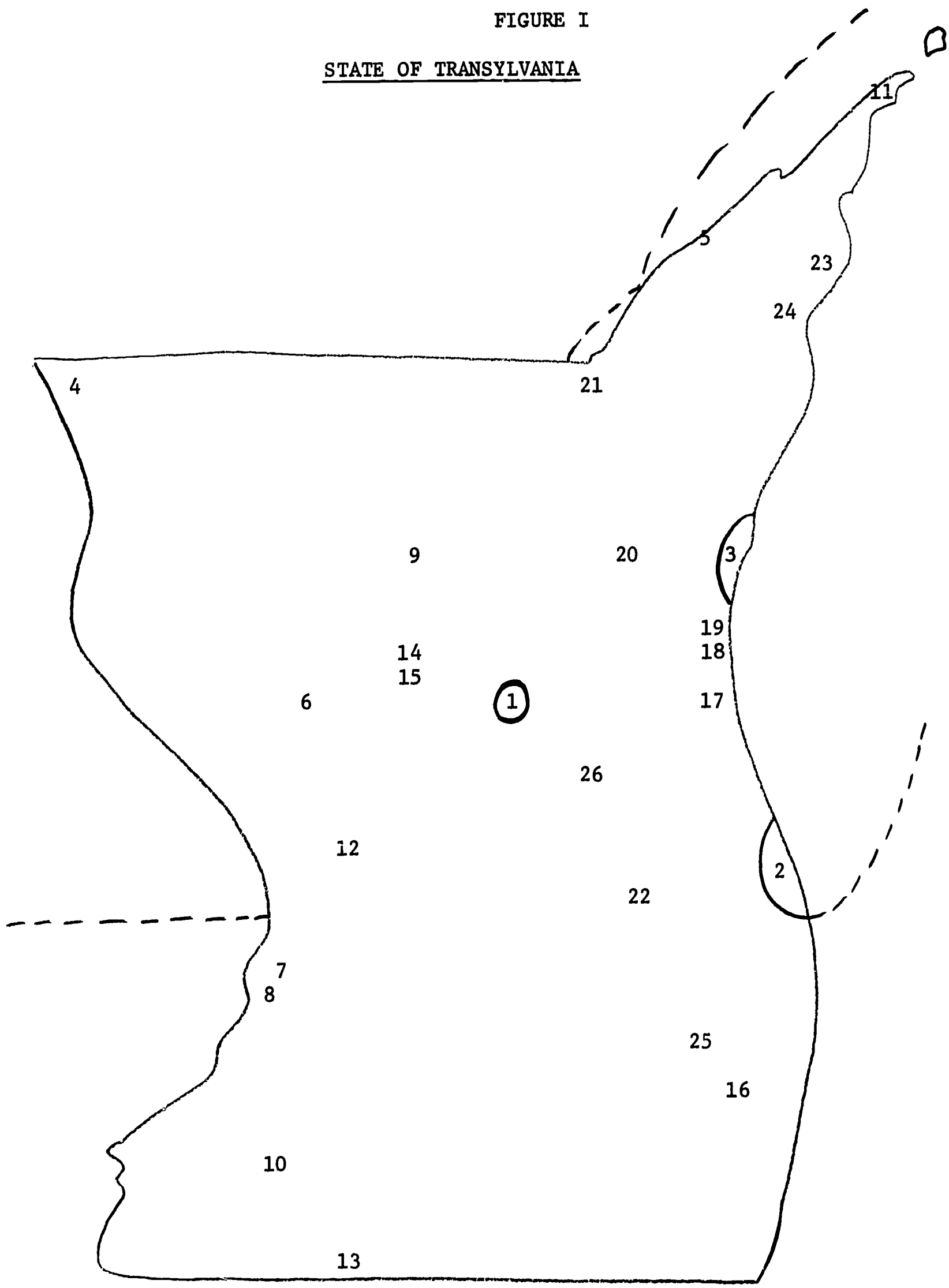

TABLE II

MAJOR CITIES IN TRANSYLVANIA

Number	Name	Comparison
1	Hitchcock	Rockford (Capitol)
2	Sterling	Chicago
3	Vamp	Milwaukee
4	Lobe	LaCrosse
5	Horror	Green Bay (East half)
6	Amulet	Freeport
7	Spirit	East Moline
8	Spook	Moline
9	Twilight	Madison
10	Frankenstein	Calesburg
11	Bundu	Sturgeon Bay
12	Stricklund	Sterling
13	Drac	Peoria
14	Bella	Janesville
15	Lugosia	Beloit
16	Potion	Kankakee
17	Danburg	Waukegan
18	Milberg	Kenosha
19	Blomberg	Racine
20	Wolberg	Waukesha
21	Nider	Fend du Lac
22	Hauber	Aurora
23	Lindheim	Manitowec
24	Werdwell	Sheboygan
25	Cory	Joliet
26	Raven	Elgin

Smaller cities and towns in Transylvania have characteristics similar to smaller cities and towns in comparable areas of Illinois and Wisconsin.

PRESENTATIONS BY WORKSHOP CONSULTANTS

Purpose of the Workshop

Vernon Buehler

It is certainly a pleasure for me to be here this morning to give you one of the first pieces of information on PPBS, and I suppose that should be the purpose of your being here—to be exposed to PPBS. What is the need for this training in PPBS?

I suppose we would all agree that the need stems from the large increase in resources that the government has been funneling into states and communities for vocational education and distributive education. And the recognition that this money is competing for lots of other needs the communities and states have. Consequently, we have to manage it very effectively. The U. S. Office of Education wisely saw this need a few years back when they commissioned the Stanford Research Institute on the west coast to conduct a survey of management in vocational education in selected states and cities in the United States. As a result of this we have two volumes, one of which is here outlining the needs for better management in vocational technical education.

I would like to refer to the chart which you see on the wall which outlines I'm sure what is now a somewhat familiar series or processes that PPBS follows. (See Appendix H). The need, the goals and objectives, the identification of data that is required to plan and lay out your program and your costs and make your selection. The alternatives that must be identified for the various goals and objectives for alternative programs. The decision-making process that then follows after these alternatives have been analyzed, and the program that is decided upon and stated in terms of not one year but longer multi-year terms, costs, and output. Finally, of course, a means of evaluation. Stanford Research, in looking at the selected communities and states in the vocational education area and the management of the programs, identified some weaknesses in all of these areas.

I am assuming that when we talk about vocational education management we can transfer these deficiencies to distributive education. With respect to needs, it was clear to the survey people that manpower demand and supply information is not of the quality that it should be in order to set up a program to meet the needs of various areas, states, municipalities, and regions in terms of current and projected needs. Quite clearly, if you are going to design a program and identify your goals or objectives, you have to start with what your needs are. In looking at these areas of the various geographical locations that they surveyed, this was one of the major deficiencies that they identified. We probably never have a demand situation and supply situation as well catalogued as we would like it. Some of this probably comes to the doorstep of the labor department as well as others involved in this chore of surveying of inventorying the supply of jobs of qualified skills in terms of job demand.

In the area of goals and objectives, Stanford Research identified a series of weaknesses. First, there was a lack of clear identification of the goals and objectives that a vocational education program should have to focus its program on. It was a case of the goals and objectives not being systematically put down and then used later on as we will see in identifying programs and alternative approaches to satisfying these goals.

The second point, of course, leads to the need for quantification of these goals. Now, we are not so naive to believe that all goals can be quantified precisely, but if you are going to do an analysis of the approaches to meeting goals, you have to have some quantification; you have to have some measure of what it is you are trying to achieve and then you have to measure in terms of evaluating progress against the goal. Clearly, if you have limited resources, you must identify the objectives that are going to get the first priority. The question of which objective gets the priority, of course, is a very important decision.

Moving next to our data deficiency, it was found that there was an inadequate data source for the planning or decision-making process.

The findings in the area of alternatives revealed that there was generally an insignificant recognition and analysis of various alternatives to meet the goals that need to be identified. We need to look at programs such as the various vocational education courses that are designed, manpower development training act programs, subsidy programs, OJT, and Adacemic General programs. These alternative programs in many cases have a considerable amount of interdependency and they satisfy common or multiple objectives that vocational education programs seem to satisfy as well. There has to be a careful listing of the alternatives.

The last step in systematic planning programming process is the need for evaluating progress against the program. Here they found from the SRI study that the states had no formal plans for evaluating progress against the program planning. Where this did exist, you all know that there is always need for timely information to provide feedback to do justice to the program.

Now the objectives of PPBS and its approach. You are seeking to improve the decision-making process and the allocation of resources using a systematic approach of goals, program alternatives, analysis and decision process. The approach is to identify the objectives and goals, establish program structure and alternative programs, identify alternative programs to accomplish these various goals, establish a multi-year program financial plan, conduct an analytical study, and provide for continuous evaluation.

The Role of PPBS as Viewed by the United States Office of Education

Mary Marks

It is a real pleasure to be here with you and to find such splendid people in charge of your workshop. In talking with some of our state leaders, some of you who are here, and some of the members of the National Association of Distributive Education Teachers we determined that people wanted to have a chance to get together and to think through this whole process of systematic planning.

We are at a point where we have a massive inadequacy of data about programs. This includes distributive education. We have not been able to interpret very adequately our achievements particularly in relation to priorities; indeed, we have thought through an established priority. So I think the real meaning for my being here with you is to share some thoughts that I have, that have probably been going through your minds, about a change in our approach to our program planning for the use of our resources.

First of all I want to talk about the concerns of our government. It is important for us as we plan for distributive education to bear in mind, that government, you and I, is interested primarily now in attacking the problems of poverty, of attacking the problems of unemployment, of attacking the problems of the people who are involved in poverty and who are involved in unemployment. We have used the term disadvantaged for these people which I think rather appalls all of us, but these are people who have not had the advantage of an adequate diet, adequate food, clothing and shelter, adequate jobs so that they can be self-supporting, self-sustaining workers and citizens of our country.

Another concern of our government and consequently a concern of education is the social disruption that we find in our midst. I am talking about the crisis in our cities. I am talking about crime in our streets. I am talking about delinquency, among our young people and adults who are really not adults at this point though their age may so indicate. I am talking about human rights, and I am talking about the potential of individuals. These are all forces that are having an impact on our educational system because of social disruption. Government is looking to education, looking to you and looking to me, to try to find some way to make a contribution to the solution of the problems. This presents another problem, a re-direction of our planning in terms of these particular problems.

Distributive education is being asked to take a look at the way they are planning the programs to see if indeed the contributions the program is capable of are being made in the development of the distributive education program.

Educational administrators and Dr. Boehler talk about some of the deficiencies in our distributive education program. We hear criticisms of vocational education, and I picked out four that we hear most frequently. I would like you to think as I enumerate these. Where does distributive education fit into the solutions, to the improvement, to the betterment of situations out of which these criticisms evolve?

One criticism that we hear frequently is that vocational education operates separately from the general education stream. They also say that we are inflexible, that we are incapable of departing from the regular way that we have developed the distributive education program, and our vocational education system in this country. A third criticism is that we are out of date. This means our curriculum is out of date, our equipment is out of date, our buildings are out of date. The fourth criticism is that we are terribly selective. I think we here must say amen, and we have been, and we are sorry, and we are going to do something about it.

The Congress is saying to us: Cities have rather unique problems, and these problems are concerned not only with education, but with sewage, housing, transportation, and many different facets of public and private life. These problems are also concerned with our educational system. We have got to do something about the people who live in the cities, for some of these people who cannot even find their way across the city have never been on public transportation.

Something else has cropped up that affects how we are going to plan our distributive education program and with whom we are going to interrelate as we develop the program. These are employers. You have seen the Jobs For Youth program which has developed and the National Alliance For Business. Congress is saying to businessmen, take young people and train them.

What have we done about career development back in the early grades so that when people come to the 10th, 11th, 12th, 13th, or 14th grade they have some basis on which to project their thinking about a career, and about work? These are some of the issues that we are looking at, and we need to look at them in all of our planning, both at the national level, the state level, and at the local level.

I also want to mention the proposed legislation that is before Congress right now. As you may know, Congress passed a Vocational Education Bill, Senate has passed a Vocational Education Bill, and we expect the conference committee to act on these bills and present, possibly in early September, an ammended Vocational Education Act. One thing Congress has said is that our advisory council is going to be expanded—we are going to have an advisory council at the state level, which will in effect be almost a board. It will have representatives from the various occupational areas, and they will be concerned with an annual evaluation of the vocational education program in a state.

The state plan has been a contractual document between the federal government and state governments for the administration of federal and state funds. If the new legislation agrees, both the Senate bill and the House bill will have in them provisions for us to have a program planned for five years which will be updated. This a projection; where are you going to be five years from today? There will be an annual projection so that as one year is completed and we evaluate how far we came in our five-year program plan, we will be adding another year at the other end. The states are going to be required, and you will be required, to put into the state's planning system where the distributive education program is going to be five years from today. Then every year you will evaluate what you have achieved in terms of that plan and project for another year so that always you will have a five-year plan.

One other emphasis in legislation is innovative and exemplary programs. We get awful weary of hearing those terms, but nevertheless, Congress is very interested in having new development, new methods, new organizational procedures, and new ways, improved ways, of reaching the people we have to serve.

Another concern for Congress at this point is what is happening in our research? Are we making use of what research we have developed? How effectively has the research been disseminated? Has it been disseminated in a meaningful way so that in a local school situation, a school teacher or a curriculum director can pick up the research and make it apply in an local situation? Congress is saying, let's reorient our research.

We are on the threshhold of a tremendous movement. No program, no field, ever had a greater opportunity to reorient and manage its thinking, its program development in relation to issue. And so, in summary, the thought I would like to leave with you is that we will be required to systematically plan and project in relation to issues. We will be required to sell the program on its contributions to issues. We will be required to answer this question: How will 1968-69 be different from 1967-68? We will be asked to answer this question: What flexibility are we going to bring into the distributive education program and into the vocational education program because of distributive education? And we will, each of us, have to answer this one: How do I want my leadership in distributive education to be judged?

Needs, Survey and Analysis, Population Trends, Occupational Changes, Technological Changes, Societal Needs, Characteristics, Population Served, Employment Opportunities

Dr. Garth Mangum

I had the privilege of serving last year on the advisory council on vocational education. After taking a year to look at the results of the 1963 Vocational Education Act, we wrote a report which I thought was very critical of vocational education, and I expected that all vocational educators would be honest and our names would be anthema. To our surprise, we found that the American Vocational Association loved the report. It is co-sponsoring a series of conferences around the country. It has gotten money from the Ford Foundation to put all these conferences on to advertise this report and its implications and then ask, "Where do we go from here?" Well, the answer to that isn't so awfully difficult to find either, because this council said some very harsh things about vocational education, even harsher things about the U. S. Office of Education, and maybe that is why the AVA didn't feel quite so bad about what was said about vocational educators in general. The most important thing was that after saying all those rather critical things the council said, "In order to straighten yourselves up and make you do what you ought to do, we want to give you $1.6 billion dollars every year to see if you can be better people." On that grounds I suppose they ended up saying, "Well, you know, say what you want to about me, but just give me money and let me go on my way."

The rather lengthy title for my morning session was supposed to be Needs, Survey Analysis, Population Trends and so forth, an area that would lead you to expect that I was going to talk about projecting manpower requirements, and what the manpower needs of the economy are. I don't think that it would be very useful for you or terribly interesting to you for me to spend some time talking to you about the numbers, about the number of people we are going to have to employ, and what the occupations are that are going to be growing more rapidly and the ones less rapidly. I can mention where some of that information can be obtained. You people in your work know where most of that is anyway.

I would like to comment a little bit first on some of the problems of getting that kind of information and some of the limitations of it, and the need for it. Then I would like to talk about needs in a somewhat different sense because I think one of the most important things the Vocational Education Act of 1963 attempted to do and which the current Vocational Education Act that Miss Marks had just talked to you about will try to continue is to shift the whole focus as far as the emphasis on needs.

Keep in mind the context out of which our federal vocational education legislation has come. The Smith-Hughes Vocational Education Act was really a landmark piece of legislation, but it came about in the relatively slow stages of the process of industrialization in this country. Although it didn't come about until 1917, most of you know that the agitation that resulted in the Smith-Highes Act began back in the 1880's. So it was really in the earlier stages of industrialization where what had a been a predominatly agricultural economy was moving into an industrial phase where it was going to need some specialized skills. The emphasis of the Smith-Hughes Act of 1917 was on the needs of the labor market. How can we make sure that we have some people that were trained in the various trades and industries so that they could move forward into this new kind of an economy? The emphasis on the Vocational Education Act of 1963 shifted very sharply yet left completely aside the whole question of the needs of the labor market and it focused on the needs of people. Its emphasis was that there were certain groups of people who had to be prepared to participate effectively in the labor market. And a lot of things had happened in those intervening years that made it necessary for this shift to occur.

We have been very critical of education in the last few years. We have criticized education particularly at the high school level for not preparing people for occupations and in fact preparing people in high school primarily to go on to more schooling even though very few people, relatively few maybe 1/3, go on to higher education, but what we forget is that back in the times when we put together our high school education system its whole purpose was to prepare people for college. At this time when we are getting rather proud of the fact that about half of the high school graduates go on to college, we overlook the fact that at the turn of the century 80% of high school graduates went on to college. But, very few people went to high school. High school was a preparatory stage that prepared people for college. We have said now that high school education must be mass education.

Compare the kind of an age in which this nation started out, an agricultural society, and think of the kinds of economic circumstances in which people lived in that period of time. A gradual entrance and exit into and from the labor market took place. Begin to look at the kind of society in which we live today and in which there is a sharp entry point into the labor market and that entry point more and more comes only after very extensive schooling. No longer does the individual learn working along side of his father what it means to work and accummulate the centuries old lore that the family has accummulated. Now, without having had a great deal of realistic exposure of what it means to be a part of the world of work all of a sudden one day we hand him a certificate and say, all right, your education, your preparatory stage is past; go out and work. And he has an awfully hard time, thrashing around and finding out what work really means. In effect we kind of dump him in a pool and we say,

all right scramble up that slick grassy bank on the other side the best you can and if you can scramble up that bank then after that you'll have a lot of opportunities because we do have a rapidly growing economy and hundreds of opportunities for those who can make the grade in this highly competitive kind of society. You will find the same at the other end of this life span. You have a problem of a sharp exit point from the labor market. In the agrarian society the most important people were the people who owned the land. And these were the people who dominated in society. The next stage was the industrial society, where the people who dominated the society were the people who owned the factories. And this was the primary source of wealth in that period whereas the ownership of land had been before. Now, more and more we are in a situation where the dominant people in society are not the people who own land. They are not the people who own factories. They're the people who own their own talents that they have developed formally in their own minds. It's a talent society, this post-industrial society, in which more and more of the capital which each one of us own is just simply our skills.

Now, then keeping in mind that we are mainly going to be talking in terms of what the needs are, the needs of the people, let me talk for a few moments about this problem of getting enough information about what are the emerging occupations and what should people be trained for. Over the last few years I have been somewhat involved in this area. There's been a constant criticism of people in vocational education about training for obsolete skills and all the rest and a constant reply for people within vocational education. The reply says, well, if you just tell us what to train for--if you just tell us what the emerging occupations are--which ones are going to grow, then we would know what we are doing and we would not have to train people for obsolete occupations, we would answer all of that kind of problem. As important as this is, it seems to me it is not a problem that is of high priority. In the first place I think we have got an awfully lot more information than we think we have on this topic, and secondly I am not so sure it is so much a question of what are we going to train people for, in any specific sense, as it is how are we going to train them. What kind of education and training are we going to give them? How is it supposed to relate to those occupations more than what are those occupations going to be?

The process of projecting, of forseeing the future demands for labor is one in which there simply is no magic. As Harvey mentioned, I was the executive secretary of a group appointed by the President and Congress two or three years back with a specific assignment. We were told, see what it is that technological change is doing to our society and specifically the Congress said, tell us what the occupations are going to be ten years from now. So we were forced into this role of becoming prophets and saying what was going to happen

in the next ten years. We were forced to examine the data and the problems. We have got computers and fancy gadgets and if somebody will just crank the computers in the right way, push the right buttons, sure enough we will know what the world is going to look like in 1975 and we can just train people from 1975 and everything will be great. Well, that is fine if there is any magic in that box but there is nothing that can come out of that box except what we put in it. There are really two ways of forecasting manpower requirements. One way of doing it is simply say, "All right in 1975 what do I think that the total output of our economy is going to be? And that's done on the basis of usually saying, well, what will the labor force be? That is one of the easiest things to calculate because we know at least how many people there are going to be in the labor force in 1975 because everybody that is going to be in the labor force in 1975 is already born. Then all we have got to say is, how many of them would actually be participating? Participation rates change relatively slowly. So, we can make a pretty good estimate of how many people there are going to be in the labor force in 1975. How many of those are going to be employed, and how many unemployed? There is no way in the world that anyone can project that. So you just make an assumption.

The other approach is just simply to go back over the last ten years and chart what has happened to every industry and to every occupation and then say to yourself, well, I know the future is going to be different from the past, but it is also going to be like the past. Now let us project those trends on a straight line and then let us ask ourselves what is likely to happen. What can we forsee that might bend that trend line down or up? And after making those judgments you go ahead and make your projection and there you have the projections for 1975. There are loads of them. The Bureau of Labor Statistics turns them out constantly. Most of them are on the level that may be too gross for your needs.

You do have an occupational outlook handbook which I think is a very useful tool on a national level despite its criticisms because I think on a national level it gives you most of the information that you could possibly use. You don't care that there are going to be 1,237,432 comptometer operators. All you really want to know is whether your vocational counselor should advise a girl; is this something she wants to get into or not? Or if you are a vocational educator and you want to decide whether you want to set up a program in that area or not. You don't care exactly how many. All you really want to know is, is it going to be a rapidly growing occupation? Is it going to be a moderately growing occupation? Is it going to be a static occupation, or is it going to be a declining occupation? And that is what your occupational outlook handbook does--tells you with about 85% accuracy rate. If it has gone wrong in places, it is because it has been too conservative in foreseeing the growth of newly emerging occupations. It has been very accurate in terms of what is going to happen with occupations that have been around long enough so that people could have established a trend line.

If you made a projection on the national level by industry where you could be pretty accurate because you could make a good judgment, how many automobiles are going to be produced in the United States in 1975? The broader you are on a geographical basis the easier it is to project. But once you have the industry calculations, if you can come down to the state of Utah and say, all right if we are sure that these are the industries that are going to grow rapidly and these are the ones that are going to grow slowly, which of these industries are relevant to the state of Utah, to the state of New York, or wherever you happen to be. Then once having made up your mind what you are willing to project for the industry structure of your period of time, ten years or whatever, then it is not a great jump to go from that to what the occupational structure in each of those industries is going to be at that point of time.

We have talked so much about the very rapid changes that are occurring in our economy and they surely are. But some we build up a little too big. And so we go around telling ourselves that everyone is going to have three or four or five or nine different occupations in his lifetime. And we are going to have to retrain him that many times. Well, I have had a least forty different occupations and I expect that there are not very many of us who have not had a lot of different occupations in our lifetime. How different are each of these occupations? In fact you might ask yourself, where did that data come from in the first place? I have had a cause to search down the origin of some of these estimates and it comes out like a lot of good estimates someone had to have a number to use in a speech like this and so he used a number and someone else was listening to the speech and he had to have a number later and he says, well, I can quote Mangum because he said so, and I will not have to take the responsibility so you write that down. In fact, having been in the business over the years in government, in writing a lot of government reports, I have been in the business of quoting myself time after time by quoting these different reports. So it may illustrate the point. But, how many occupations can you think of that over the last 30 years have really seriously declined? There have been some. And of those, how many can you think of in which there was not at least 10 years or probably 29 good years of solid forewarning if anyone had really bothered to look at what was happening.

Let me review for you some of the trends in vocational education in general. Keep in mind again that the Vocational Education Act of 1963 said we are going to, even though we are still interested in the labor market, that is not going to be our emphasis anymore. Our emphasis is going to be groups of people and it is going to be those people in high school who need training who are not going beyond high school. It is going to be those people who want post secondary preparation for the world of work. It is going to be adults who want upgrading. And then it singled out a specific category. Vocational education is also going to emphasize the needs of people who have academic and social economic handicaps that make it difficult

for them to profit from the traditional vocational education courses. And all of this is our target rather than the occupational education courses. And all of this is our target rather than the occupational categories as was previously the case.

There are some real problems when it comes to looking at what happened in vocational education because one of the great things we are lacking is data. Since I spend my time evaluating government programs I suppose I am somewhat more critical than I ought to be about the state of the data that is available for anyone who wants to ask. Are these federal manpower and education programs paying off? I must say that out of all the programs that I have looked at, written about, and evaluated, the worst one is the data reporting system of vocational education. From the point of view of national evaluation, if you want to know what vocational education has accomplished in the United States then it is simply a dismal reporting system. And the reason it is is because it was not put together for that reason. The purpose of the data reporting system that still exists in vocational education at the national level is simply an accounting system. (In fact, one of the interesting things in writing this advisory council's report was when we began to delve back into the history a little bit and we referred to the report that was written by the President's Consultants, the panel in 1960, on this subject, and they quoted a panel in 1938 which said, we found absolutely no data for evaluating vocational education in 1938. They said, it is still the same in 1962 and our reports said, I am sorry but it is still the same in 1967.)

Enrollments in vocational education following the 1963 Act did increase very rapidly but yet we do not know even yet today whether there are more people taking vocational education than there were in 1963 because we added a new category into the 1963 act. You remember the office occupations category. And you can account for almost all of the enrollment increases by what has happened to the reported enrollments in office occupations, no one seems to know whether that means this is new growth in office occupations or only that office occupations training which previously had to be done completely at state expense and now can be done at partially federal expense has not been reported in the federal system even though it had existed before at the state level. About one fourth of all high school students in the country are getting some federally supported vocational education. Ninety percent of all post secondary vocational education is in either an office, or in trades and industries, or in technical training or those areas that are the more rapidly growing ones. However, only 4% of the 18-21 age group in the population are enrolled. So we are talking about a relatively small number of people. It is also 7% of all vocational education enrollment. But it is an area that is rising rapidly. We move to the adult level and interestingly enough the adult level, the part time adult programs are 40% of all vocational education.

Congress in 1967 had said, we do want people in vocational education to do some different things. We want you to have some different emphasis and we are going to give you more money to do it. But we are going to leave it free for you. You can do what you have always done. You can use this new money in the same old way or you can use it in the new way to accomplish the new objectives. We would like you to use it for the new objectives but we are not going to tell you that you have to. And half of the inertia in any organization particularly an old one and a large one, being what it is, you can guess that over a period of five years relatively little change had occurred.

As the Advisory Council on Vocational Education decided to assess this question of quality, we found that it varied from the excellent to the abysmal largely by where you go. You go to some places and vocational education is in a terrible dingy building, with obsolete equipment and a staff that does not seem to amount to much. And you go to another place and it is spit polished and seems really up to date. So all you could do, since you were trying to do a national evaluation, is simply to make some judgments. And our judgments came out something like this: that in general vocational education tended to be poor where it was really needed worse but for some very understandable reasons. The rural areas where most of the students were going to leave that area and eventually end up in urban employment, what vocational education was there was usually good, but it was much too narrow because about the only occupations where you could get enough kids together in small rural high school to afford an instructor and go ahead and teach them were really just simply three. They were home economics, vocational agriculture, and office occupations.

In the inner city ghettos education was terrible because all education there was terrible and vocational education was just simply a part of it. The buildings for general education were run down, the vocational education part of that building or separate vocational school would tend to be run down with some rather dramatic exceptions in a few cities. So in general, this was very poor also. Then in the wealthy suburbs, you did not get very much vocational education because the general assumption was that everyone was going to go to college anyway. And our studies and some of those fragmentary studies have suggested that the quality of those people instructing in those areas, and in fact, the quality of instructors in general in vocational education, is very impressive and very pleasing and the problem seems to be more of the resources available and the guidance that was available to people.

Looking at the employment and earnings, given in general that vocational education is more expensive than general education, are the results good enough to justify this training? The studies that have been made suggest the following: that the vocationally trained youth as compared with the generally trained youth does not go beyond high school. Taking the individual who got a vocational training in high school and the individual who just got academic training in high school, neither of whom went on to college. Several studies have

suggested that the vocationally trained student has an advantage in employment and earnings during the first six to ten years but after that six to ten years the generally trained individual begins to catch up and finally passes in employment in earnings. But, if you turn from that general data and look at the social economic status of the youth, you discover in some data that came out of the Project Talent a couple of years ago, that in general the student in vocational education, talking now just about the high school level, tends to come from a lower social economic status and is of lower ability than the student who goes into either general education or academic. When you control for ability and status then the vocational education student does profit and comes out much better as a result of vocational education than he would if he went through the general academic course.

Congress is recognizing that we are going to have to do more and more on the preventive front. If we don't, important as the remedial programs are, we are always going to have those remedial programs flooded so we are going to find it next to impossible to re do what we should have done in the first place. And obviously it is cheaper to do it the first time around than to do it when they are adults and they have got students to support. You have got to supply training allowances and everything else that goes with it. If you compare 7,000 dollars a year for the Job Corps, not 7,000 dollars per year, but 7,000 per enrollment for Job Corps enrollees, then you can see if you have done something for him in general and vocational education. The first time around you can save the taxpayer a lot ofmoney. (Vocational education is not a separate discipline within education, but it is a basic objective of all education and must be a basic element of each person's education. It is also a teaching technique which may have even more to offer as a method than as a substance. As a selecting out process for the professions, education has fostered, stressed and rewarded the verbal skills important to those pursuits. It has given too little attention to the development of attitudes, manipulative skills and adaptability to new situations. In the process of emphasizing verbal skills, the predominant methods of instruction are lecture and discussion; and little attention is given to the alternative technique of learning by doing. For many students the techniques of vocational education can supply a core around which an attractive package of academic as well as skilled content can be prepared, which will be more palatable and more useful to under motivated students than either alone).

Another basic philosophical concept that the council was impressed with was one I do not think needs very much comment--the constancy of change. It is really a cliche by now to talk about the change that will be going on and the necessity of preparing people in such a way that they are adaptable. And I would like to stress even more than the change that occurs in technology, the change that occurs in the mind of a person as he is exposed to broader horizons.

How much do most students know about the world of work and therefore how much information do they have about all of the alternative occupational opportunities that are going to be available to them? Some occupational opportunities that may sound very attractive during high school may not be very attractive relative to other occupations when they get out into the world and they see there is a lot more out there than they had ever heard of. And one thing we would all like to see in this life is some kind of an educational system that would allow us to make those shifts so that suddenly when that light dawns on us we have not foreclosed and overly committed ourselves to something that we decided to do when we did not have enough experience to make a valid kind of judgment. Then this kind of a concept is hard to get one's teeth into but one that is important and it underlies the philosophy of the Vocational Education Act of 1963 and will underlie to some degree the new one; change from the emphasis on the labor market to the emphasis on people. And that is to keep in mind that the whole reason that we put this system together; what we call American society, is because we were interested in prompting individual freedom and because we were pragmatists and we were not satisfied with the niceties of political structures and we were not willing to say all right this is 1789 and we have written a constitution and the whole job is done because we have political freedom in the United States. We recognize that the only way that we can really measure freedom in any operational sense is the range of choice that is available to the individual and if he has lots of choices he has freedom and if he does not have lots of choices, he did not have very much freedom.

Vocational education cannot be meaningfully limited to the skills necessary for a particular occupation. It is more appropriately defined as all of those aspects of the educational experience which help a person discover his talents in order to relate them to the world of work, choose an occupation, and to refine his talents and use them successfully in employment. Some type of formal occupation must be a part of every educational experience. Though it may be well to delay final occupational choice until all the alternatives are known one ought not to leave the educational system without something that makes him salable, something that is attractive to the employer. And then finally, the objectives of vocational education should be the development of the individual, and not the needs of the labor market. Sometimes in his life practically everyone is going to make an occupational choice. He ought to be aware. He should delay making the choice until he has all the information, but he should be accummulating the choice and he should be aware that that choice is coming to him. So a part of this whole system of preparing people for employment should be that awareness that comes in very early life. In junior high school economic orientation and occupational preparation should reach a more sophisticated stage with study by all students of the economic and industrial system by which goods and services are produced. Occupational preparation should become more specific in high school where preparation should not be limited to a specific occupation. One of the things that the group was quite concerned about was the feeling that on the one hand the post secondary level was the preferable

place to prepare people for particular occupations, but that the necessity of being realistic and recognizing that at present most people do not go beyond the secondary level; and if you don't get them at secondary level then you are not going to get them. All students outside the college preparatory curriculum should acquire entry level job skill but they should also be prepared for post high school vocational and technical education. Some formal post secondary occupational preparation for all should be the goal for the near future and certainly we are moving very rapidly in that direction.

Occupational preparation should not and need not be limited to the classroom, to the school shop or the laboratory. Many of you are involved in cooperative education. I do not remember if Miss Marks mentioned this or not, but you should be interested, in the new legislation Congress has singled out the cooperative programs as being of a special value and has specifically allocated monies to the support of that particular area as being one of the more profitable in the kind of world where students in the home and in normal life do not get that kind of exposure. Effective occupational preparation is impossible if the school feels that its obligation ends when the student graduates. The school must then work with employers to build up his success, his successes and failures, providing the best information possible and that this would provide the best information to the school on his strengths and weaknesses. If the school is involved in the placement process and therefore it knows whether people were able to get a job or not, getting a job is the best form of feedback in terms of shaping these programs to make these people attractive to employers.

The problem, how do we make education relevant and particularly vocational education useful for the life of the individual, not only for the ones with the better preparation who probably would make out fairly well by themselves anyway, but that new group that we have discovered, that we have neglected in the past, that are tough to deal with? The reason they are tough to deal with is partly their own fault, nonetheless, that does not change the situation. We have a lot of people that we have never tried to do much for before and we are now going to be struggling with them for the future as well as not giving up the job for the more fortunately situated that we have been working with all along.

I feel the dissemination of vocational education information ought to start early, right down in the elementary school. It is a different kind. I hope that you recognize that as you ask me all of these different kinds of questions that I am just a poor economist who is therefore willing to talk about education anytime and I will talk a lot more positively than if you ask me a question about economics because I know what the hedges are there and what the problems of what I am saying are. But it seems to me that very early, not in terms of how many automobile mechanics are going to be needed

and all of this kind of occupational outlook handbook information; that is completely irrelevant down at that point. But how does the industrial system work? What are the various processes? What are the processes of work? What does a student now in an elementary school know about work? You look through all your elementary textbooks and you know there is a fireman, you know there is a postman, you know there is a policeman, you know there is a bus driver, and they are great guys because they help you across the street or whatever it is, but what does the student ever really learn about the real world of work?

I think this whole process of PPBS is an important development throughout our whole system of not only public education but the full public sector of our economy. But it is important in a conceptual sense. It is important as a way of thinking. And when you get all through here I think that you will end up concluding, how are we going to find any numbers that are going to make a cost effective analysis of distributive education or anything else? But do not go away too discouraged. If you have been taught to think in terms of what are your objectives, where are we now, how far is it from here to there, and what are the objective alternatives to get there; which is the most efficient way of doing that? Whether you will ever have a number or not, you have learned something.

Overview and History of PPBS

(See Workshop Schedule for Further Breakdown of Topical Presentations)

Dr. Joseph McGivney

PPBS means a lot of different things to a lot of different people. I see you have the little publication by Hatry and Cotton, which is perhaps the best succinct statement of what it is all about. These little notes get to the real practical operational problems that you face in trying to implement a PPB system, and in terms of time spent in the payoff involved I would recommend this volume.

According to the experts in PPBS, those being the people from State Local Finance Project at George Washington University, planning, programming, and budgeting is a methodology for organizing information of all sorts, kinds, shapes to improve decisions having to do with the allocation of resources. Allocation of resources is a very simple concept. What goes in and what comes out? Do we get more coming out than what we put in? Or do we lose ground? Information to improve decisions within a framework is accomplished by an explicit delineation of objectives in quantitative terms to the extent that they are quantifiable. A systematic comparison of the benefits and costs of alternative objectives and the alternative methods for their accomplishment. We really don't know at the outset what our objective is. The second statement means that the means and the ends can interact and therefore that the objectives can change as you go through analysis, or as you go through the process of systems analysis that what you started out with may not look anything like what you come up with in terms of feasibility and a lot of other things.

With PPBS budgets and systems analysis and the inner activity between objectives and needs, the whole question of allocation of resources is played out over a long period of time. Currently PPBS has it that it is about five years that you do programming for. This may be right, it may not be right. It is a lot like R. A. Fischer establishing the 5% level of significant statistics. Planning has to do with the process of determining objectives, (See Appendix I) specifying alternative methods for achieving objectives. This means that planning is heavily future oriented. Programming has to do with what you do with this allocation of resources and optimizing the mix of resources in terms of teachers, buildings, staffs, students, all the things that go into produce or to add on to the product the student being processed through the system. Budgeting then is the process of systematically relating the expenditures of funds to the accomplishment of objectives. Here you have a plan which is fairly concrete and fairly realistic over five years. It is consistent with the objectives that you have learned here. Budgeting is where you say, here is what we are going to do this year. We have this much revenue. These are essentially the concepts. Now systems is a way of interrelating these three concepts. You can see easily how you could do each one of them independently. The PPB system tends to interrelate and to gird these things.

If you will recall your educational administration or administration of any sort who had some crazy notion about scientific managements, one thing you might consider as we get through is the difference between PPBS and what Taylor was saying in scientific management. A book that you might read that is critical of scientific management is Ray Callahan's "Cult of Efficiency." You have heard of the Time and Motion Study Guide. Taylor developed this in the 1940's when we had a tremendous need to marshall the resources of the United States and our allies in an organized way; to be able to know what they were, and to be able to produce them and organize them. All of these approaches, by the way, are assumed under a better name called rational approaches to decision-making, rational approaches to the allocation of resources. Some people will play up the systems concepts. Others will play up the economic symbol, and write off PPBS.

A limitation of the past system according to the people who were advocating PPB, and I tend to be in that group, is that they were unable to specify concretely the accomplishment of existing activities. In other words, with this control budget, we could come up with the kinds and types of people you had hired, the number of paper clips that you had purchased, but there was really no way of relating resources expenditure funds, any kind of measurement to what you were doing, like training students. The system was unable to specify the expected accomplishments; they were trying to go around and into the planning frame.

There are principally two theoretical or conceptual streams that feed into PPBS. One is economics, which is according to any economicst, the social science which is concerned with the allocation of scarce resources to obtain maximum satisfaction of unlimited wants. In other words, there is never enough of everything to do everything that you want to do. You have to set up some sort of a priority system. Even the air is no longer free. This is a pretty basic concept as you read through studies on cost benefit and cost effectiveness, that come out of economics and are useful to know. There is never enough of everything to do everything. Opportunity costs are the costs of any kind of action or decision consisting of the opportunity benefits that are sacrificed in taking that action. In economics, efficiency is the attainment of the most value for a given cost. In other words, if you have a budget of a hundred thousand dollars, how do you go about getting the most value for that hundred thousand dollars? Are there different ways that we can maximize output for that same amount of money? The dollars are very flexible. Economy then in economics is the attainment of an objective for the least cost.

Let us now look at systems analysis, and more specifically at systems. There are various kinds of systems. There is an actual system like the sun. There are many man-made systems, political, legal, economic, and social. Within any kind of a system there is a hierarchy and therefore we can speak of a microcosim, we can speak of the mini-microcosim, we can speak of the macrocosim, we can

speak of sub-systems. There is order in terms of the hierarchy. Organizations can be conceptualized into systems. Information, probably the one that we will dwell on the most, can also be considered a system. Total systems is a concept that we hear about a lot. Everyone is preaching total systems. One other concept is conceptualization of systems as models. Systems analysis then is finding what the system is, analyzing what its component parts are, putting them together, reorganizing them, and restructuring them; in a general way at this point. In terms of PPBS, we have in the Federal Government a thing called the program structure. Now I suppose distributive education might be in a state government. The governor's office might view distributive education as an activity. It would not even be an element. It would be an input, maybe. Therefore, a programmed structure consists of a hierarchial breakdown. Vocational education may be a collateral or equal element with general education in a public school system. It is kind of useless to talk about any system being adopted unless the state director understands it and adopts it and supports it.

The first national vocational education conference for PPBS was for the vocational people so in a sense they led out nationally on this. The program was not first started in the total educational program. When we get to program budgeting, we try to attach benefits and costs to programs over a given time. We focus on inputs and outputs rather than just inputs alone. It is sort of an add-on program structure. We are future oriented. We emphasize planning rather than control.

Program and financial plans are for five years, structured according to program categories, designed to show source inputs and utility outputs plus dollars for each. Statements of objectives and planned accomplishments are stated in terms of quantitative terms, which means that they are then measurable. PPBS tends to make the decisionmaking process explicit. We try to say what our objectives are. We try to assure that the decision-maker has a choice of valuable alternatives when making a decision. We say that you could do this and you could do that, and this is what it will cost, and here are the benefits if you do this.

If we are going to do PPBS, it requires in each agency the existence of a permanent specialized staff carrying out continuing in-depth analysis. You need someone who knows something about this. A budgeting process which can articulate the planning program is really number one. Let me mention some things that PPBS is not. It is not revolutionary. Its ingredients are largely not new, except in the arrangement and integration of the concepts. It is not a substitute for judgment, experience and wisdom. We still need that. It just helps to sharpen wisdom a little, to get better information in a better organized way. PPBS is not an attempt to computerize the decision-making process. Someone will still have to get up there and say yes or no. It is not just another way to save money or cut expenses, which is surprising because many

people view it that way when they first hear of it. It is not just another budget, although in many cases it <u>is</u> just another budget. And PPBS is surely not the answer to every problem involving every issue. That is roughly the overview.

There are many efforts under way now to bring about a more complete integration of governmental entities at the local, state, and federal level. Particularly at the local level this is occurring. Charles Benson and others have realized that you cannot consider educational needs in a vacuum. You have got to articulate the needs of education with some concept of the total system. Administrators know that this is coming

people view it that way when they first hear of it. It is not just another budget, although in many cases it is just another budget. And PPBS is surely not the answer to every problem involving every issue. That is roughly the overview.

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PPBS cost benefit analysis, anything dealing with human beings, has not been developed to a hard science which is predictable. There is some new evidence that even what we thought we knew with regards to testing we can do away with.

PPBS is more attentive or responsive to planning its output rather than being concerned with what the product is going to be. PPBS has addressed itself for the outcomes. Outcome is how much good we do for the student. How much more is this student contributing to the betterment of society? The innovation has been in terms of planning. We now have enough history and enough momentum so that we address ourselves to the problems of time and outcome. What we do today might have an impact negatively or positively in the future depending on what our criterion of good is, and I think we try to answer the question of what that might be. That is called planning.

There are some staffing patterns that are recommended in the George Washington University material by Hatry and Cotton, the PPBS notes. I think you must get an individual who knows the substance of the area, and make him the boss of this unit. You have to get someone who knows a little something about systems analysis, maybe someone who knows something about statistics and economics. All he will do is deal with objective setting and setting plans. I do not know how you set performance requirements, but I think I may be able to come up with something that I could live with in an operational way, and he is the one who does this.

There are at least two schools of thought on who should make the decision--the boss or you. One thought consists of the economists, the engineers, and the people who make their money using computers and coming up with systems. There is another school of thought which is founded by political scientists and some economists who have fallen away, political philosophers, whom I tend to agree with ultimately, yet all these people say that some progress can be made by this route by improving the framework in which decisions are made. The economists say that we can plan across the horizons simultaneously with doing all these other things. My bias is that you plan in incremental segments. You look at a problem, and get as much data as you can. You have to be timely politically, and you have got to be able to research it and there has to be a need for it.

In answer to my question, what is a system, I received the following comments:

1. A system is something that can be reproduced from area to area, the results of which can be easily determined and forecasted.

2. A system is a group of integrated parts working toward one ultimate goal.

3. It is a guide or a formula that anyone can follow to arrive at a conclusion. It is a series of steps.

4. It is an organized assembly of all of the factors toward the thing you are going to achieve or the output.

5. It is an analysis of factors to be used in reaching a decision.

6. It is an established set of rules set up to accumulate a goal.

7. It is a method of operation, but it does not necessarily have to be so well organized.

8. A system is a group of things working for a total output. You have a group of integrated parts working toward one end.

9. It is a method of categorizing, a sort of taxonomy.

The point that I am trying to make here is a system is just about anything you want it to be. All of your definitions are good ones. The term is used across many fields. A system is really nothing until we define it. A system is a set of elements that are so interrelated and integrated that the whole displays unique attributes, or the whole displays more than the sum of the parts. The idea of a system is addressed not to an individual phenomenon but to a total pattern of phenomena that creates an environment and

a state of being for a given process. A complex unit formed of many often diverse parts, not integrated. The systems concept is primarily a way of thinking about a job of managing. It provides a framework for visualizing internal and external environmental factors as an integrated whole.

We are dealing primarily in education with human systems, man-made systems. By in large, these are open systems. Open systems exchange with their environment. They get influenced by other sub-systems in their environment and they in turn influence other sub-systems in their environment. Ultimately, if you are going to design a total system, you should be fully prepared to articulate the information needs of all those systems. You must know what information is needed at each decision point, and action point. You must know what information is generated and in what form it is used. You must know about the work of related sub-systems to integrate the information system. Many people advocate total information systems. What this might mean definitionally is the integration of all useful sub-systems from within an organization into one central universal computerized data bank which would include necessary data for accounting, planning, management control and operations control. It is my judgment that a total information system is a dream. It can never be done. When you are working with information systems you start incrementally. You start some where that the benefits outweigh the costs.

We can describe a model as anything that describes, reflects, or represents an actual system or situation including relationships between phenomena in the system and perhaps beyond the system. Functional sub-systems within the school system might be conceived as the instructional sub-system, the student placement sub-system, the financial sub-system, the purchasing sub-system, and the personnel sub-system. Note the inter-activity going on within the system.

Having established objectives is number one. Unless you have objectives, nothing else works. You cannot be quantitative about nothing. You establish objectives, you plan the work, you organize for production, motivate personnel to get the production done, control for the performance of the work; you make a little evaluation. All during this process feedback is going on.

PPBS is a system which leads into the decision-making process. It requires the establishment of objectives (quantifiable objectives). The people who are your super-ordinates, who have adopted PPB type systems, are going to be looking for something like this. This is essentially what we have been trying to say. First, there is a whole different way of conceiving systems and it depends on your perspective. But we have said that there is a ray of inputs. These could be school systems, teachers, students, buildings, audio visuals, OJT--inputs, resources that go into what we define as the black box of the educational system. What we are going to try to do either

on an individual basis or in terms of this whole cluster of resources is determine what influences decision-makers in making some association between this in a quantifiable way. What comes out as far as education is concerned is students. Given an understanding of cause and effect relationships, we make some assumptions that this had quite a bit to do with transforming these inputs into these outputs.

According to Anthony, with whom I agree, strategic planning is the process of deciding on the objectives of the organization, on changes in the objectives, on the resources used to obtain the objectives, and on the policies that are used to govern the acquisition, use, and disposition of the various resources. What he is really saying is that strategic planning is the way or the function by which someone has control over the policy-making apparatus of the organization. It is that function conceptually that sets the tone, the objectives, the organization, the arrangement, and everything of an organization. At any time an organization has already had many of these decisions made. Having been made, and having been solved, they need to be managed. You need to control what you want to do in terms of policy or objectives. Management control, then, is the process by which managers, you people, assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives.

Long range planning usually means long range projections of the past. Strategic planning deals with novel or new thrusts. Long range planning is akin to management control in that you project 10 to 20 years out. The purpose of planning is to provide a mechanism by which alternative goals programs and expenditures of state government or distributive education can be organized, analyzed, and summarized for presentation to elected or appointed state policy-making leaders; to provide them with a more objective basis for making policy decisions. Planning includes the development of long range goals, projection on the basis of population, development and maintenance of process whereby alternative programs can merge, development and improvement of methods of quantifying data on improved methods and so on. We just got through saying that planning is not the same as regularization, and now we are going to say that it is. Program planning should be established as a continuing agency reponsibility and operation personnel should receive training in planning techniques and strategies. Sufficicent staff personnel should be assigned sufficient time to conduct the necessary research, assemble data, and prepare planning reports.

Good objectives in terms of a PPBS framework have these characteristics: They are explicit; they are specific; they reflect actual goals of society; they are organized into related classes; and ideally they are quantitatively measurable.

To close the gap between planned programs and program implementation it is imperative that an integrated structure be established which links up the planning, programming, budgeting, accounting, and management loops. Many of these concepts could be implied, but the reason that they are not implied is that they require specific attention and recognition. So we have evolved from PPBS to PPBAM. Management has this performance requirement requirement need. The need to effectively manage human and material resources. Management, is the whole process of managing and controlling people. Planning requires data and therefore a budgeting and an information system.

In the 1960's then, the management aspects of budgeting received considerably more attention at the federal and state levels. This required yet another informational system for planning which was labeled PPBS. It fully implemented the planning programming budgeting accounting management system. It will require specialized or inter-phased information systems for planning, management and control.

Responsibility budget means who is responsible for those expenditure of resources. Hence, it means your organization. A program budget describes the major programs an agency undertakes. It might be arranged by services for certain clientele groups. It shows the inputs and outputs, the costs and benefits. A responsibility budget sets forth the plan in terms of the persons and organizational entities responsible for carrying it out. It is therefore primarily a control device since it is a statement of expected or standard performance compared with actual performance.

Here are some musts in budgeting. It should be a commitment by management. The responsibility should be built up by responsible centers and should show separately controllable costs in each responsibility center. Responsible supervisors should participate, and should agree that budget goals are reasonable. Responsible supervisors must understand the budget process which requires continuous education. Time period covered by one budget should be related to the necessity for and the possibility of effective management action. The plan figures in this budget should match in definition the accounting figures that you really use to report performance. The budget figures should represent reasonably attainable goals. The budget system should not cost more to operate than it is worth. The staff function which is facilitating the process should not be confused with the line function which is to make decisions.

Historically, accounting has been the way (fiscal). It has had a focus on the source application status of appropriated funds. The source is where the money came from. We were concerned again with the application, what inputs were bought for example, what kinds of personnel. What were the materials, supplies, and capital equipment? Did we spend it all, or did we spend more than we have? These accounting systems, and they are largely the ones that are in existence today, make no attempt to account for the cost of resources actually used, although cost accounting systems exist. They rarely tied in with the basic appropriation accounting system. Hence, total cost of the system can only be estimated. This is a frontier as far as education is concerned. To improve and integrate accounting and reporting with budgeting, programming, and management control, four major requirements must be met. First, personnel costs should be charged not only to organization or responsible units, but also to programs and sub-programs in which the personnel work to the extent that they deviate from the organizational structure. Second, appropriations must be purified to break out between expense items and investment items, and in conflict with the above requirement. Third, asset accounts which hold inventory in suspense from the time they are ordered until the time they reach the final user should be established so that operating expense accounts reflect only the expense of items consumed, and not the cost of items acquired but not yet consumed. Fourth, a uniform account structure for expense items should be established so that accounting information is collected and ways that are useful not only for the control of the source, application, and status of funds, but also useful to the operating manager, as well as the planning, programming and budgeting function of the organization, and its relevant superordinate sub-system.

Finally, in summing up, the management control aspects and this relationship to information, accounting, budgeting, we could say that management has information, needs about goals and objectives in order to establish them. They have information needs to implement, and to make clear the statements of their objectives. They have needs to evaluate, periodic reassessment. They also have information needs about the population to be served. And management needs information about resources, staff, facilities, equipment and data to forecast for planning numbers and to get an idea of needs and goals.

When a new management system such as PPBS is announced, it can have three effects on an agency. The system will help the agency; the system will not affect the agency; the system will retard the agency in achieving its objectives. It is my opinion that with vocational education, it will help.

Here is a quick list of how to make PPBS work in your favor, or not to work at all.

1. You cannot find objectives. You have to have an objective.

2. You cannot identify a criteria. You can find a way to measure the objective. You do not know whether you are doing good or bad, otherwise.

3. You count benefits regardless of cost.

4. You assume the optimal distribution of benefits.

5. You search and count what is called unemployed resources. There is some slack time here.

6. You count income redistribution as a benefit.

7. You can omit alternatives.

8. You can ignore costs.

9. You can fail to find data with which to evaluate your program.

10. You can seek to discover new objectives.

11. You can overestimate total benefits and underestimate total costs, while using appropriate ground rules.

Data Sources--Pertinent--Valid--Factual--Assumptions--Qualitative and Quantitative Analysis

Dr. Norman Hyatt

You remember Charles Wilson, General Motors, Secretary of Defense. There is a real point here from a research orientation point of view. Pure research is that type of research which even if it is successful, can never be of any use to the people who put up the money. Maybe we should be talking about pure research. But if you talk about pure research in Charles Wilson's frame of reference it is only one segment of it. It is a method of study which by careful and exhaustive investigation of all assertainable evidence bears upon a definable problem, and offers a solution to that problem. Research is an endeavor to discover, to develop and to verify knowledge. What do we use to do this? We gather data.

You had better be sure what you are talking about when you start talking in terms of data. Let us see if we can't put some parameters on these kinds of things we are talking about. We ought to talk about criteria, unless there is a system of values that tends to provide direction and even dictate the direction for a given program. Unless there is a value system, the proper needs probably will not be able to be identified. It isn't easy. We need to have objectives. Whether they are long range or short range. We need to establish priorities. You need to have adequacy of evaluation and adequacy of plans for use. After you go through the labors of a project, if you have not made adequate plans for usage, you might just as well forget what you have worked on up to that time. Plans can be good, bad and in between. I hope that when we leave here we will be talking about good ones. In the process of working with data, sometimes it is useful to formulate hypotheses. Sometimes a goal or an objective is written in the form of a hypothesis, and sometimes in research it is useful to say that we will use hypotheses to give us steerage. What kind of data are we going to talk about; in what form? Probably the most significant part of this is in what form does it come in and what form is it going to go out? My suggestion here is that decisions have to be rendered in the data collection process to be sure that the data that come in are useful and in a form that will be useful. It is not right to think in terms of raw scores or records. It is not really useful to go back to raw scores. What kind of data are going to be coming in?

There are many different kinds of graphs. If you want to show a trend representing the data you are working with; population changes for example, which of these three kinds of graphs would you use? You would use a line graph, but it is surprising the number

of people that stop with a line graph and say this will show position or relationship or relativity and nothing else. It can do that too, but they are primarily used for showing trends. If the data you are working with is acceptable to trends, then use a line graph. If you are going to try to show magnitude comparisons, this is best portrayed by the use of a bar graph. Bar graphs tend to show quantity and the relationship to another bar. If you want to show the proportion of one thing over another, use a pie or circle graph. You often see budget reports on a pie or circle graph. There are different kinds of data on the census bureau that you want to be alert to. Sociological, demographic, economic, as well as the share counting. A graph is worth 1,000 words too, and you do not have to take every single kind of comparison from a graph and write a sentence about it to have the story useful. It is impossible. Sometimes, if you can take certain kinds of information, with certain objectives, and certain kinds of data available, in order to know what kind of a program you want, and you see something shining through from the data, you have an obligation to report that which shines through.

ERIC is the government sponsored information and retrieval system or collection system that is trying to get off the ground. ERIC is a sound concept if it can be made effectively and efficiently operative. It is a network of "clearinghouses" across the country into which raw data can be fed and available upon request by people.

You have to rely on one of two things to know whether data is reliable or not; either your own personal experience, or the person's experience in whom you have confidence.

What is the relationship between qualitative and quantitative analysis? Quantitative is simply where we count, where we tally, where we tabulate. It can be either objective or subjective data, but when we start talking about descriptions, whether they are good or bad it doesn't make any difference. When we start talking about the kinds of data we have, then we are in qualitative analysis. How good something was is an opinion you may have. How it measures up in a cost-benefit analysis is a qualitative analysis.

Analysis and Interpretation of Data as Related to Distributive Education

Dr. Bernard Nye

If you want to learn about PPBS, take a look at the total program. I recognize that each state is different. This is a total program. There are suggested procedures. We make projections; we analyze; we interpret the data that we have available, and the data that we can collect from other sources, other than ourselves, and we make assumptions from all of this. Again, we get into distributive education total programming. In many of our states, you have to make projections that are demanded of you yesterday. You aren't given the time, staff, or money to dig into this seriously. Sometimes you have to take what is available and do a lot of interpreting, and it is from your point of view and you make a lot of assumptions. Take a look at distributive education. There are long range goals and there are short-term goals in distributive education. You find that in both the short and long term goals there are certain things involved--your program equipment, instructional costs, teacher education. Your job is to make decisions for your particular program, and involved in all of this is that nasty word, budgeting or costs. You cannot avoid it. When you project and develop and come up with your costs, always relate it to people being served. You will stand a better chance when you connect it with people. In high school some of the things you have to consider within your state are state operation, and local operation. You have to consider the funding. In the high school program do you use the cooperative plan? Do you have descriptive preparatory projects? What about your special needs programs? Disadvantaged youth? How long are these programs going to be? How do we fund them? What is involved? What type of teacher do we need? What is the curriculum necessary for this type of program. This is your decision. Do you set a high school program? These are your decisions. These are factors that you are going to consider in planning.

Our ideas of programs and planning will change as we go along to meet needs. What about teacher education? What does it involve? Do you have the budgeting to hire two people--one to prepare teachers and one to do your research and development? You must relate this to your total program operation. Do you have staffing problems? Many of you may have this. What workshops do you have? Are you going to pay your coordinators to come in? Are you going to give them credit? What type of a workshop? These are all questions that you are going to have to determine. We talk about programs. What length is really needed? This is a point in your planning.

The local coordinator can actually find out what is going on in his community by going down to the state employment agency, to the retail merchants, to the Chamber of Commerce, or even to a telephone directory and look up agencies that would be providing training that would be vocational in nature. From this, the door is open. The needs and desires of youth, adults, and the community will be served. You must have the facts and the figures.

I point out that we in the vocational department did not get these figures. We felt that at the local level the people we would be dealing with would say that we were prejudiced, and that we came up with the figures, so we had the state superintendent of public instruction, and we had the people involved in the state employment service come up with them. We go back now to whether the information is valid and pertinent. This is where figures can be a little disconcerting.

ERIC Clearinghouses - Their Role in Vocational Education

John Stephens

If you look at the cycle of research, you first start out with the definition of the problem, and this is where the distributive education teachers and supervisors come in in the D.E. area. You then study this problem which is called research if it is done in a systematic manner. Then we usually try the solution that we have arrived at. We disseminate the information, and therefore, we improve education. I would like to tell you something about the United States Office of Education's approach to dissemination and implementation. Let me use a somewhat more sophisticated nomenclature, dissemination and diffusion. Diffusion means simply putting into practice. Dissemination means distribution. This leads to complete dissemination and hopefully to implementation. The U.S. Office has solved this problem, and they realized the difficulty of it and it involves the ERIC system, Education Resources Information Center. The central ERIC publishes a monthly volume called Research in Education. This volume contains all of the projects that have been funded in education by the U.S. Office of Education and some that have been funded by other agencies such as the Ford Foundation. It includes not only the completed research projects, but it also includes the on-going projects. In addition to this volume, the individual clearinghouses put out their own document. For example, the Vocational and Technical Clearinghouse publishes two volumes--AIM and ARM. AIM stands for Abstracts in Instructional Materials, and ARM stands for Abstracts of Research and Related Materials.

Input-Output Relationships

Mr. Bill Nelson

I would like to go into the educational investment alternatives, benefits and costs, and interest return to investment. Last week Dr. Mangum spoke on the manpower projection of data and needs and occupational requirements in the future. This concept is needed to find out the needs for education in the future. But we usually end up with many more needs than resources. This is where the benefit cost analysis comes in.

My idea of vocational education in distributive education is basically education for employment jobs, and because of this lifetime earnings, salaries are a relevent measure of its success. This is why benefit cost analysis becomes an appropriate tool for measuring the results of vocational education programs. On any type of consideration of investment alternatives, objectives are probably your key element. The other necessary elements would be: alternative means, what types of educational programs to meet these objectives, and then attempting to assign benefits and costs to these objectives so that they can be evaluated and analyzed; so that another person besides yourself could go through the same procedure and arrive at the same decision. This is probably the main thrust of a systematic analysis that someone else can go through and arrive at the same decision.

Talking about objectives, assuming we have them, let's attempt to take a broad view of alternative means of meeting objectives. This is one of the questions that have to be answered as far as setting up alternatives. Who should take care of the educational program? The public? Government? A mixed group? Strictly occupational education? These questions should be considered in some way.

From the economic viewpoint, the Federal Department is coming in and it becomes a powerful tool as far as selling programs in attempting to measure the economic benefits of education, and these can be divided into two major categories. One is what we call consumption--the nonproductive value of education; what a person gets out of his education that adds to his own personal satisfaction. Moving into the investment, benefits and education, are the benefits derived from education due to its productive value. These are direct benefits to the individual receiving the education--changes in earnings, changes in the time employed, and also changes in types of occupations. Indirect benefits are classified as those that are given to society in general.

As far as costs of education, these can be broken into two major categories. The first one, cost of receiving education or the cost to the individual who is receiving the education can be broken into direct costs or the additions to his living expenses such as room, board, books, clothing, transportation, etc. The second group would be more the indirect costs or the opportunity costs of his forthgone earnings. If he is in a two year program he has given up any possibility of making a living and holding a job. This for an educational program may be the largest single class of costs to education.

One of the main problems in attempting to measure benefits from an educational process is the various characteristics of student population. As far as trying to adjust benefits for these student factors such as the race, socio-economic condition, intelligence, two general methods can be used. One is accomplished by using the control group. Another aspect uses a statistical technique such as regression analysis. Another aspect of attempting to measure benefits in education is an attempt to project present wage levels and salaries into the future.

Very few people in this day and age stay in the community that they were educated in. For many communities, they get all the costs of educating the students, but none of the benefits, because as soon as they receive a high school or a college education, they move out of the community or possibly out of the state. I think the only solution that can be given is to measure all costs and benefits from an educational program. Include the state, local and federal costs and benefits.

In attempting to evaluate a teacher program over the next five years everything has to be an estimate. The most important thing here is that you assume the salaries of graduates will be relative to nongraduates in the program. The second point is related to the future costs of the program. Essentially where you can have the greatest changes in future costs of the program would be in the variable costs--costs of teachers, administration, etc., where what you expect the future wage structure of teachers would be.

The range of alternatives is not just within the educational boundaries. One of the other aspects is mainly in the realm of the political system. If there is any conflict between the values of a community and a net present cost ratio, etc. it is the social cultural values which overrule any type of economic analysis of programs. Another aspect is the ability and interest of student populations which will be entering the educational program.

Act of Decision Making

Dr. Quinn McKay

In decision making and other processes, we are always faced with the difficulty of how in the world do we get anything done. You ought to go back to your home states with a lot of bright ideas filled with the enthusiasm of a few things you haven't thought about and get them going in your own state and unless I am sadly mistaken, unless you are a very unusual person, the first thing that is going to happen with this new bright idea you have is that you are going to present it to the superintendent of schools, and he will very politely say yes. It isn't the process of making decisions that is always difficult but how you get them implemented. The problem is that people separate the decision making process from the action process. Very often the manner in which we arrive at decisions will affect the time it takes to get the action underway. The decision itself is an integral part of the implementation. Very often we separate the two. We have often, by prolonging the decision-making process of this, shortened the implementation portion. In decision - making processes you basically have only one barrier to deal with--the people you are dealing with. Decisions cannot be made without understanding people. We don't make decisions in vacuums.

Degree of familiarity may be one of your greatest blocks in working with other people. When you start dealing with human beings in arriving at decisions in a program, one of the first laws that we learn is that when dealing with people it is not the facts that are most important, but what is critical is the facts as I see them. What is important here is that we must be aware of what I see is fact. Here are three steps that are useful to know that will help us overcome some of these problems. First of all, we are all conditioned. Out of our conditioning comes our perception. Out of our perception comes our behavior.

Let's try to find out why we aren't very good listeners. One listens when he sees as the other person sees and feels as the other person feels. Most of us do not have the capacity to listen; whenever you listen to a person with real understanding, you run the risk that you will be converted to his idea. One of our greatest skills can be our capacity to listen without necessarily being converted.

There are certain barriers to communications:

1. Terms do not mean the same thing to all people.

2. Using too many words.

3. Who says something or who is doing the talking.

4. Chain of command--physical distance.

5. Pressure.

   a. social pressures

   b. superior-subordinant pressures

   c. group pressure

6. Do something to get the other person's attention before you speak.

   a. explain the why and the how about things

   b. stories

Program Development
What, Where, When, Who, Why, How

Dr. Vernon Buehler

The purpose now is to give you a quick rundown in getting into the program process of what PPB can do for you. We have seen that it is a planning process leading to budget decisions, program decisions, and multi-year outputs. It involves the analysis of several alternatives. It is characterized by these four factors. In order to put together a program structure, we have a few principles to follow. The purpose of the structure is to get our activities together so we can look at alternative programs for carrying out our objectives.

We have to know what our objectives are. The budget structure is needed clearly. Organizational lines do not restrict us when we are setting up our program structure. Let's run down some guidelines that will aid you in saying this is good and this is bad.

1. We identify objectives.

2. We group these activities and we have to do it in terms of a theme.

3. The structure is flexible, not static.

Evaluation Techniques of PPB, Concept, Process, Products, Total Program: Courses, Teacher, Student, Methodology, Facilities, Analysis, Interpretation & Impact, Quantitative and Qualitative Data

Mr. Norman Hyatt

Our topic for today is evaluation, and the definition for evaluation is to determine or fix the value of; or to examine and judge. Either one is appropriate. Communication is a little difficult. How do we fix a value on something? When you came out this morning you began to place a value of judgment on that. You started to think in terms of its being too cold or too warm. You were beginning to evaluate. We do this with just about everything we get involved in. We find that we are dealing with things that are not concrete and suddenly we come out with hard facts and sound conclusions.

Evaluation is full of the concept of averages. When we talk about evaluation, however, we ought to get a little more serious than on the average. Evaluation is not isolated right at the end of PPBS programs. It is carried out all through. Evaluation is not going to stop as soon as this workshop is over for you. You will be running a constant evaluation. What are some of the characteristics of evaluation that we need to know? I'd like to start talking about the nature of evaluation by saying that it is continuous. Another very obvious fact is that it is from the simple to the complex. One of the most important things to think about in terms of a base to begin with is a point of departure.

There are measurement devices. You will have devices that you will create and those that you will inherit. I will show you some later. Most evaluation is relative. The degree of relativity that you apply to the evaluation that you are going to be doing is pretty well structured for you in the format of the instrument that you are going to use. You ought to think in terms of evaluation for a purpose. Most evaluation ties directly into problem solving. What are some of the principles of evaluation?

A very basic principle of evaluation is the determination or designation of a philosophy about which the evaluation is going to be based. Next step is to develop those objectives based on the philosophy. Different people approach these things in a different kind of sequence; this is not necessary. I think we have to begin with a philosophy and objectives and go from there.

Needless to say, an evaluation should be worthwhile. One of the most difficult things to do in conducting an evaluation exercise is to think in terms of the positive or the constructive approach, especially when you start writing reports.

I would like to talk a minute on consumption of resources. What kinds of resources get consumed? You cannot relive the second that just passed. Time is the most valuable resource that we have. The human resource is important also. What about the materialistic resources? What are we going to get out of the program? When we are making an evaluation of a given program, we have to keep in mind the possibility that it might just be simply the change in sequence that has brought about the increase in productivity or efficiency.

If the evaluative process is to be an effective tool in administration, a firm committment to its purpose and its value on the part of the administrator and the board is necessary. Evaluation must be viewed as an integral part of the administrative processes and should serve as a basic resource for planning, decision making, and implementation for change in improving the educational enterprise. Evaluation must be comprehensive. Evaluation by necessity involves people, personnel, students, citizens, employers, managers. Many techniques are currently available for the use of the school administrators.

What's Next for PPB & DE

Mr. Ron Strand

We are kind of like the tubers at the canal last night. We knew we were going to get into this canal and we knew we were going to reach our destination in a little while, but we didn't know what we would see along the way or what our destination really was.

We look at the need box and we look at the United States. How many needs? We have sets of needs with each individual. A great deal of money is now being spent on vocational-technical education and people want results, and this is a challenge to us as individuals. Now PPBS is a system. A system is a means to an end--not the end in itself. Here is another tool for us. What is PPBS? It is a system which integrates all the elements involved in decision-making, which eventually leads to the development of a budget. It concerns itself with output. We have got to become more output oriented. There are certain steps we must follow:

1. The formulation of a goal to describe what is to be done.

2. Identify the ultimate product.

3. Consider the process or processes.

4. Identify the interim products.

I would like to highlight this area of cost-benefit analysis. I have two recommendations. One is Bob Joy's recommendation to have another workshop with all the leaders from the states. The second step I think is best summed up in the comment of you people as to what you gained from the institute.

1. How to better utilize data in the preparation of a budget.

2. A means to systematically plan a state program.

3. A system to have teachers utilize input and output as a planning device at the local level.

4. Some ideas on what is being done throughout the country.

RESULTS AND FINDINGS

Pretest and Posttest

Thirty-eight participants completed both the Pretest and Posttest of the Workshop. The test contained 22 objective items which were identical for both the Pretest and the Posttest. The subjective portion of the Pretest consisted of eight questions and the subjective portion of the Posttest consisted of twelve questions.

Item	Pretest	Posttest
Number of Test Items	22	22
Number of Participants	38	38
Range	8 to 19	7 to 19
Mean	12.21	14.63
Median	12	15
Mean, expressed as a percent of total possible items	55.5%	66.5%
Mean, net gain	--	2.42

Question Number 1 on the pretest compared with Question Number 7 on the posttest (What do you expect to gain from this Workshop? and what did you gain from this Workshop?) The general consensus was that most of the people expected to gain a broader understanding; a method or concept for total program planning; and the ability to use PPBS. The question "What did you gain from this Workshop?" pretty much indicates as you compare them person for person that the people did gain that which they expected to get out of the Workshop.

Only three of the states participating in the workshop were currently using or developing PPBS. Those states were New York, New Jersey and Wisconsin.

In general, the participants seem to identify the positive place for the utilization of PPBS in Vocational Education and for the most part saw use for it as a planning and selling tool at all levels.

DESCRIPTION OF MODEL

The Model for "Planning, Implementing and Evaluating Balanced Programs in Distributive Education" is designed to permit immediate transfer and application to the situation in any given state or locality.

The Model has been so designed that it takes a specific concept of PPBS, states a problem related to that concept, and then includes examples which execute the concept and address themselves to a solution to the problem.

The Model is designed to assist those individuals responsible for planning, implementing and evaluating Distributive Education Programs. It is so structured that these individuals could substitute their data for the data contained in this model and then proceed using the case situations and guidelines to draft their own set of plans.

THE MODEL

PPBS is defined and explained throughout the entire report of the workshop, however, this model is intended to be a self-standing document. PPBS is a system's approach to management. It is a good technique to utilize in stopping "fly-by-the-seat-of-your-pants" programming. It is a system aimed at providing you with the tools to more effectively allocate resources as it applies to alternative ways in attaining precisely stated objectives.

The first consideration for systematic programming planning is to establish need. In establishing need, it is necessary for us to identify, define and specify. It is necessary to include survey and analysis, population trends, occupational changes, technological changes, societal needs, characteristics, population served, and employment opportunities. Part I of the Workshop Problem addresses itself to this situation:

The following table provides us with the necessary data to establish needs. At the present time, the bulk of this type of data is required by the U.S. Office of Education as an integral part of the projected activities report.

Table A. is the summary of Employment Demand and Supply of Trained Personnel for the Distributive Occupations in Transylvania. It is based on the data which was provided with the Workshop Problem plus the following assumptions: (1) that employment in distributive and marketing will increase 30% over the ten year

TABLE III

SUMMARY OF EMPLOYMENT DEMAND AND SUPPLY OF TRAINED PERSONNEL

		Projected Requirements			Training Output			
Year	Current Employment	Expansion Needs	Replacement Needs	Total	Vocational Education	Other Sectors	Total	Percent of Need Being Met
1969	843,200	23,600	33,700	57,300	5,000	1,800	6,800	11.9%
1970	866,800	25,100	34,700	59,800	6,000	2,400	8,400	14%
1971	891,900	26,700	35,700	62,400	7,200	2,800	10,000	16%
1972	918,600	28,200	36,700	64,900	8,640	3,300	11,940	18.3%
1973	946,800	30,300	37,900	68,200	10,370	3,700	14,070	20.5%

period from 1965 to 1975; (2) that there will be a 4% turnover for replacement needs; (3) that Vocational Distributive Education will increase at a rate of 20%; and (4) that training output from other sectors will increase, however, this increase will be at varying rates.

Data such as that found in Table A can be extremely useful, however, we need to couple it with information on occupational and technological changes, societal needs and the overall characteristics of the population served. Thus, by working with state and local advisory committees, other governmental agencies, service organizations, etc., we may come up with a profile of our state or community that looks something like this: "Needs of the People of Transylvania."

A. Inter-city needs.
    1. Low achievement with relation to present standards.
    2. Sub Standard oral communications.
    3. Inferior attitudes.
    4. Pessimistic feeling.
    5. Welfare cases increasing.
    6. Unable to comprehend present value system.
    7. High rate of unemployment
        a. Ages 16 to 24; unemployment 5 times as great as national average.
        b. Ages 25 to 64; unemployment 2 to 3 times as great as national average.

B. Rural Area Needs.
    1. Insufficient training stations in local communities for cooperative education programs.
    2. Inadequate number enrolled in distributive education programs.
    3. Problems of transition from rural to urban living.
    4. Transportation and scheduling problems.

C. Entire Transylvania Population Needs.
    1. Additional training for adults in distribution.
    2. Re-training adults presently employed.
    3. Improvements needed in present programs to insure achievement of objective.
    4. Increase in population will influence demand in distributive occupations.
    5. Additional programs needed beyond elementary level occupations, to train for various mid-management occupations.
    6. Anticipation of Veterans re-entering distributive education programs.
    7. Need for training for occupations requiring specialized training.
    8. Adopt realistic training through advisory committee; adequate equipment and facilities; and practical methodology.

9. Transitional problems between traditions, mores, race and religious practices.
10. Penal institutions need rehabilitation programs to train for gainful employment.

Using data such as this to identify needs, we are ready to proceed to the next phase of PPBS -- Goals and Objectives. The keyword here is measurable. And they should be measurable over a given time spent. We should also include broad, as well as specific objectives along with those that are long and short range. Objectives should also have predictability and include a measurable behavioral change.

Workshop Problem - Part II (See Appendix D for complete Workshop Problem)

Mr. Joseph Johnson, Director of Planning, Vocational-Technical Division, State Department of Education for the State of Transylvania has participated in a national conference on PPBS and is now conducting an "in-house" PPBS conference for the Vocational Technical Division. It is a "working" conference and each program unit has been asked to state their goals and objectives for the next five years beginning with 1968-69.

Prior to "turning-us-loose" on this task, Mr. Johnson asks Mr. Smith to make a few remarks. Our director reminds us that our objections should:

(1) Be explicit
(2) Be specific
(3) Reflect society's current attitude towards vocational education
(4) Be quantitatively measurable
(5) Reflect the fact that we are not sure of the amount of funds we will have and, thus, our objectives should be placed in priority with the most important first.
(6) Provide for a special set of objectives for each of our two largest cities, Serling and Vamp.
(7) Reflect the proposed legislation which will provide additional funds for programs for the disadvantaged work experience programs, pre-vocational programs, innovative programs, etc.;

Upon the completion of Mr. Smith's remarks, Mr. Johnson asks the staff to divide into their program unit areas (Ag., DE, Health, Home Ec., Industrial Arts, OE, Technical, and T&I).

You, of course, are the DE unit and proceed to "tackle" the above task.

On the following pages we will attempt to identify the mission, goals and objectives for Vocational Distributive Education in the state of Transylvania.

MISSION: It is the purpose of vocational education to develop new programs of vocational education, and to provide part-time employment for youths who need the earnings from such employment to continue their vocational training on a full-time basis, so that persons of all ages in all communities of the State--those in high school, those who have completed or discontinued their formal education and are preparing to enter the labor market, those who have already entered the labor market but need to upgrade their skills or learn new ones, those with special educational handicaps and those in post-secondary schools--will have ready access to vocational training or retraining which is of high quality, which is realistic in the light of actual or anticipated opportunities for gainful employment, and which is suited to their needs, interests, and ability to benefit from such training. (Title I-Vocational Education, Part A-General Provisions, "Declaration of Purpose" Section 101)

GOALS:

1. To make a complete program of vocational instruction in the area of distribution and marketing available to all the residents of Transylvania so that they have the opportunity to become occupationally competent and responsible citizens.

2. To take immediate action to close the gap between training output and projected requirements.

3. Goals for Adult Distributive Education

   A. Supplementary instruction to update persons so that they may operate efficiently in current employment. Advancement curriculum designed to develop additional skills and prepare persons to take positions involving greater ability or responsibility.

   B. Demonstrate to business the need for preparatory training through the utilization of special pilot programs.

   C. Provide preparatory adult distributive education to meet the continuing needs of the labor force.

4. Goals for Post Secondary Distributive Education

   A. To provide specialist training for the distributive occupations to post secondary students in technical schools and junior colleges throughout the state.

   B. To provide entry level job competency training for post secondary students who for various reasons have not availed themselves of High School Distributive Education.

   C. To provide broad background skills in marketing and distribution that lead to employment or additional training before the distributive occupations or a career as a professional distributive educator.

5. Goals for High School Distributive Education

   A. To prepare those persons with career objectives in distribution and marketing for immediate employment in distribution occupations at beginning levels following graduation and to lay a foundation on which growth to maximum potential is possible within their career objective to meet the continuing needs of the labor force.

   B. To provide the necessary education for those persons with special needs still enrolled in the secondary school for whom present programs fail to meet real needs.

   C. To provide the necessary materials, information and leadership for pre-vocational education to stimulate an awareness of and an interest in careers in distribution and materials and to meet the continuing needs of people and the labor force.

   D. To team with other vocational educators in the integration of occupational survey information and occupational relevance to the grades Kindergarten through twelve curriculum and to design specific occupational survey courses.

OBJECTIVES:

Note: (All quantities for the following objectives are found in Table IV.)

1. To provide occupational exploration in marketing and distribution for junior high youth.

2. To provide pre-vocational preparation in the field of marketing and distribution for tenth graders.

3. To provide pre-vocational instruction and entry level instruction in the field of marketing and distribution for eleventh graders.

4. To develop entry level competencies for the field of marketing and distribution for twelfth graders.

5. To provide career development competencies in marketing and distribution for eleventh graders through the cooperative method.

6. To provide career development competencies and initial specialist competencies for twelfth graders through the cooperative method.

7. To provide entry level competencies and career development competencies for students in their first year beyond high school.

8. To provide career development and specialist competencies for employment in marketing and distribution at the mid-management level to second year students beyond high school.

9. To provide entry level competency development for out of school youth and adults.

10. To provide supplementary education in marketing and distribution for employees and employers in the field of marketing and distribution.

TABLE IV

FIVE YEAR D.E. PROGRAM PLANNING
STUDENT ENROLLMENT

TYPE OF PROGRAM	OBJ. NO.	(Current) 1967-68			1968-69			1969-70			1970-71			1971-72			1972-73		
SECONDARY		T	S	V	T	S	V	T	S	V	T	S	V	T	S	V	T	S	V
Project D.E. Jr. high	1				40	40		160	80		320	160	40	1280	320	80	2560	640	160
**10th Grade	2				240	80	40	480	160	80	960	320	160	1920	640	320	3840	1280	640
**11th Grade	3	2130	809	213	2536	971	255	3243	1165	306	3651	1398	367	4381	1677	440	5257	2012	528
*12th Grade	4	957	312	96	1148	374	115	1377	448	138	1652	537	165	1982	644	198	2378	772	237
Coop. D.E. **11th Grade	5				240	80	40	480	160	80	960	320	160	1920	640	320	3840	1280	640
*12th Grade	6	2097	838	210	2516	1005	250	3019	1205	300	3622	1446	360	4346	1735	432	5615	2082	518
Post-Secondary **13th Grade	7	932	419	112	1118	503	134	1341	603	160	1609	724	192	1930	868	230	2316	1041	276
*14th Grade	8	620	279	74	740	335	89	888	402	106	1065	482	127	1278	578	152	1533	693	182
*Adult Preparatory	9	607	37	74	1214	74	89	1821	148	107	2400	296	128	3600	592	153	4800	1184	183
Supplementary	10	7205	432	865	14410	864	1038	28910	1728	1245	40000	3456	1494	50000	6912	1792	60000	14000	2152

NOTE: All figures except adult are based on 40 distributive education students per instructor.
Adult figures are based on 200 students for each full-time equivalent instructor.
Figures given for adult instructors include both preparatory and supplementary.

* Output potential for labor force.
** A portion may enter the labor force without additional vocational education.

TABLE V

FIVE YEAR D.E. PROGRAM PLANNING
DOLLAR COST

	1968 (Current)				1969			
Objective	Federal	State	Local	Total	Federal	State	Local	Total
1	----------	----------	----------	-------	9,560	-----	-----	9,560
2	----------	----------	----------	-------	43,020	-----	14,340	57,360
3	40,870	188,741	229,610	459,221	45,457	257,595	303,052	606104
4	17,817	82,281	100,098	200,196	20,578	116,608	137,186	274,372
5	----------	----------	----------	-------	58,560	-------	--------	58,560
6	38,920	204,332	243,252	486,504	61,390	246,562	306,952	613,904
7	20,298	91,454	113,792	225,544	42,596	99,390	141,986	283,972
8	13,503	61,517	75,020	150,040	28,194	65,786	93,980	187,960
9	1,657	7,553	9,210	18,420	48,151	4,606	23,725	76,482
10	11,935	69,122	27,018	108,075	23,056	149,864	57,640	230,560
TOTAL	145,000	705,000	798,000	1,648,000	380,562	940,111	1,078,861	2,399,534

TABLE V

FIVE YEAR D.E. PROGRAM PLANNING
DOLLAR COST

	1970				1971			
Objective	Federal	State	Local	Total	Federal	State	Local	Total
1	37,770	---------	2,390	40,160	71,730	--------	12,430	84,160
2	10,843	65,177	44,460	120,480	25,248	100,992	126,240	252,480
3	73,259	333,738	406,996	813,993	96,021	384,086	480,106	960,213
4	31,106	141,708	172,813	345,627	43,447	173,791	217,238	434,476
5	108,240	---------	14,640	122,880	212,280	600	45,360	258,240
6	69,558	316,874	386,432	772,864	97,432	389,727	487,159	974,318
7	53,707	125,317	179,023	358,047	45,052	180,208	225,260	450,520
8	35,564	82,984	118,548	237,096	29,820	119,280	149,100	298,200
9	9,916	80,224	30,046	120,186	16,560	264,960	41,400	165,600
10	44,232	324,971	122,267	491,470	72,000	468,000	180,000	720,000
TOTAL	440,202	1,470,993	1,477,615	3,422,803	706,590	2,081,644	1,964,293	4,598,207

TABLE V

FIVE YEAR D.E. PROGRAM PLANNING
DOLLAR COST

	1972				1973			
Objective	Federal	State	Local	Total	Federal	State	Local	Total
1	39,000	284,480	31,080	354,560	89,395	283,085	372,480	744,960
2	58,502	207,418	265,920	531,840	134,093	424,627	558,720	1,117,440
3	133,489	473,280	606,768	1,213,537	183,574	581,320	764,893	1,529,787
4	60,391	214,116	274,507	549,014	83,039	262,960	345,999	691,998
5	59,558	386,602	95,280	541,440	136,396	431,924	568,320	1,136,640
6	134,812	477,974	612,786	1,225,572	199,480	631,688	831,168	1,662,336
7	62,416	221,294	283,710	567,420	85,877	271,945	357,822	715,644
8	41,330	3,528,536	187,866	357,732	56,843	179,956	236,898	473,697
9	28,908	168,192	65,700	262,800	44,352	232,848	92,400	369,600
10	104,500	608,000	237,500	950,000	144,000	756,000	300,000	1,200,000
TOTAL	422,906	6,569,892	2,661,117	6,571,915	1,157,049	4,056,353	4,428,700	9,642,102

TABLE VI

FIVE YEAR DE PROGRAM PLANNING ALTERNATIVES

High School Programs: By projecting enrollments, employment needs, and operating costs for five years, it is apparent that we will have to train an increasingly large segment of our state's youth for distributive occupations. A general estimate of the alternatives and the approximate cost follows:

	1969	1970	1971	1972	1973
Total H. S. Grads in D. E.					
High:	3,819	4,773	5,956	5,420	9,257
Average:	3,576	3,281	4,888	5,433	6,377
Low:	3,321	3,612	3,985	4,287	4,672
Cost per grad:	$ 731	$ 739	$ 746	$ 754	$ 759

Example of cost benefit analysis for a typical high school graduate in the class of 1968 (Projected) is shown on the next page.

Post Secondary Programs: A similar projection for junior and community college programs indicates the following possibilities:

Total Post-Secondary Graduates	1969	1970	1971	1972	1973
High:	775	969	1,211	1,514	1,882
Average:	725	848	992	1,148	1,381
Low:	675	736	804	876	954
Cost per grad:	$1080	$996	$ 919	$ 870	$ 861

Adult Programs: A similar projection for the adult education program shows the following:

Total Adult Grads					
High:	9,006	11,256	14,070	17,590	21,980
Average:	7,975	9,313	10,411	12,172	14,134
Low:	7,270	7,978	8,638	9,418	10,250
Cost per grad:	$ 22	$ 23	$ 21	$ 20	$ 22

A cost benefit analysis has been computed for each of the programs and is available. A sample of the computations for high school and post secondary programs is attached.

TABLE VII

FIVE YEAR D.E. PROGRAM PLANNING
STATE OF TRANSYLVANIA
Cost & Benefits of Graduates of High School and Post-Secondary Programs - 1969
Cost-Benefit Analysis

Secondary Programs:

Benefits: Years:	0	1	2	3	4	5	6	7	8	9	10
Annual earnings per High School Graduate (Preparatory)	0	$4000	$5000	$6000	$6000	$7000	$7000	$ 7000	$ 7000	$ 7000	$ 7000
Annual earnings per non-graduate	0	4000	4000	4000	5000	5000	5000	5000	5000	5000	5000
Net Benefit per Graduate:	0	0	1000	2000	1000	2000	2000	2000	2000	2000	2000
Earnings Discounted @ 10%			826	1504	685	1242	1130	1026	934	852	776

Cost: (per student) $631 — Total net benefit discounted @ 10% = $8,975 / $631 = Cost/Benefit: 14.2

Benefits:

Annual earnings per high school graduate (Cooperative Program)	$1000	$4000	$5000	$6000	$7000	$7000	$8000	$ 8000	$ 8000	$ 9000	$ 9000
Annual earnings per non-graduate	0	4000	4000	4000	5000	5000	5000	5000	5000	5000	5000
Net Benefit per Graduate	1000	0	1000	2000	2000	2000	3000	3000	3000	4000	4000
Earnings Discounted @ 10%	1000		826	1504	685	1242	1695	1539	1401	1704	1552

Cost: (per student) $731 — Total net benefit discounted @ 10% = $13,148 / $731 = Cost/Benefit 17.98

Post-Secondary Programs:

Benefits:	0	1	2	3	4	5	6	7	8	9	10
Annual Earnings per Community College Graduate	0	$2000	$4000	$5000	$6000	$6000	$7000	$8000	$ 9000	$10000	$10000	$10000
Annual earnings per non-graduate	$4000	4000	4000	4000	5000	5000	5000	5000	5000	5000	5000	5000
Net Benefit per Graduate	-4000	-2000	0	1000	1000	1000	2000	3000	4000	5000	5000	5000
Earnings Discounted @ 10%	-4000	-2000	0	826	752	685	1242	1695	2052	2335	2130	1940

Cost: (per graduate) $920 — Total net benefit discounted @ 10% = $7,657 / $920 = Cost/Benefit: 8.32

Tables IV through VII provide us with the type of information that Mr. Smith, the Vocational Director for the State of Transylvania has requested. Table IV adds the quantity specifications to our objectives. Additional specifications could be gained by having sub-objectives to each of our objectives. Also, we must realize that in addition to placing our emphasis at various levels within the vocational education framework that education for marketing and distribution could be accomplished in other ways--private schools, company sponsored on-the-job training, U.S. Department of Labor, U.S. Department of Education, and others.

However, to date, very few others have become excited about education for marketing and distribution and thus we all pursue our alternatives as a matter of emphasis within the vocational education framework. The cost benefit analysis shown in Tables VI and VII is not only an effective means for determining where priorities should be placed within the vocational education framework, but is also an outstanding tool to be utilized by vocational educators in obtaining funds at the federal, state and local levels.

If we are to have effective cost-benefit analysis in vocational education, it will be necessary for us to do extensive comparison followup study between nonvocational and vocational graduates over an extended period of time. This along with extensive data from the U.S. Census Bureau, Department of Employment Security, U.S. Office of Education, business and industry, State Departments of Education, local school financial and statistical reports, Welfare data, and data from other social agencies will be necessary to effectively cost out vocational education and to arrive at a meaningful interpretation of benefits.

Workshop Problem - Parts V, VI, VII

Director Smith is very concerned that we are "ready to move" when the new legislation is passed. To accomplish this, it is his intention to submit a total plan for the Vocational-Technical Division's utilization of these funds to the State Board of Education (also, the State Board for Vocational Technical Education) on Tuesday, September 3, 1968. Thus, he is directing us to submit to him on Friday, August 9, 1968 our: "Five Year Program for Planning, Implementing, and Evaluating Balanced Programs in Distributive Education."

He is asking us to carry out our planning under the following conditions:

TABLE VIII

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVE 1: To provide occupational exploration in marketing and distribution for junior high youth.

	1969	1970	1971	1972	1973
Number of students served	2,000	3,900	5,520	7,500	12,150
Allocation of resources:					
Number of schools	40	60	75	100	120
Number of Instructors Full Time Equivalent	13	26	35	50	81
Cost of Instruction	130,000	273,000	385,000	575,000	972,000
Cost of Equipment	40,000	21,000	17,000	29,000	24,000
Cost of Supplies	8,000	16,000	22,000	34,000	57,000
Cost of Travel	4,000	8,000	11,000	15,000	24,000
Federal Dollars	90,000	180,000	180,000	65,000	108,000
State Dollars	46,000	13,000	67,000	261,000	430,000
Local Dollars	46,000	125,000	188,000	327,000	539,000
TOTAL COSTS	182,000	318,000	435,000	653,000	1,077,000

Nature of Program: 1 semester Distribution and Marketing Occupational Survey Course; 25 students per class; teacher has two hours for each 25 students, 1 for class and period for coordinating projects and individual work; may spend remainder of day in senior high.

TABLE IX

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVE 2: To provide pre-vocational preparation in the field of marketing and distribution for tenth graders.

	1969	1970	1971	1972	1973
Number of students served	1,000	1,950	2,625	3,750	6,075
Allocation of resources:					
Number of Schools	40 pilot schools	60	75	100	120
Number of Instructors Full Time Equivalent	13	26	35	50	81
Cost of Instruction	130,000	273,000	385,000	575,000	972,000
Cost of Equipment	20,000	25,000	30,000	34,000	40,000
Cost of Supplies	6,000	13,000	18,000	26,000	44,000
Cost of Travel	4,000	8,000	11,000	15,000	24,000
Federal Dollars	90,000	180,000	180,000	65,000	108,000
State Dollars	40,000	19,000	73,000	260,000	432,000
Local Dollars	40,000	120,000	191,000	325,000	540,000
TOTAL COSTS	160,000	319,000	444,000	650,000	1,080,000

Nature of Program: An Introductory, Pre-vocational course in marketing and distribution; 25 students per class; 75 students per full-time equivalent instructor; remainder of day to coordinate special projects and work individually with students.

TABLE X

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVE 3: To provide pre-vocational instruction and entry level instruction in the field of marketing and distribution for eleventh graders.

	1969	1970	1971	1972	1973
Number of students served	3,150	4,875	6,000	8,550	12,750
Allocation of resources:					
Number of Schools	125	140	160	190	225
Number of Instructors Full Time Equivalent	42	65	80	114	170
Cost of Instruction	420,000	683,000	880,000	1,311,000	2,040,000
Cost of Equipment	-------	-------	-------	-------	-------
Cost of Supplies	8,000	12,000	16,000	20,000	13,000
Cost of Travel	8,000	12,000	14,000	18,000	12,000
Federal Dollars	80,000	140,000	180,000	260,000	400,000
State Dollars	134,000	207,000	267,000	404,000	626,000
Local Dollars	222,000	360,000	463,000	685,000	1,039,000
TOTAL COSTS	436,000	707,000	910,000	1,349,000	2,065,000

Nature of Program: Vocational marketing and distribution course designed to prepare for entry employment either as a co-op student during senior year or as a full-time employee at graduation or as a basis for further study; designed to serve all students, many here have special needs.

TABLE XI

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVE 4: To develop entry level competencies for the field of marketing and distribution for twelfth graders.

	1969	1970	1971	1972	1973
Number of students served	1,725	2,550	3,375	4,725	6,900
Allocation of resources:					
Number of Schools	125	140	160	190	225
Number of Instructors Full Time Equivalent	23	34	45	63	92
Cost of Instruction	230,000	357,000	495,000	724,000	1,104,000
Cost of Equipment	-------	-------	-------	-------	-------
Cost of Supplies	4,000	6,000	8,000	10,000	13,000
Cost of Travel	4,000	6,000	7,000	9,000	12,000
Federal Dollars	46,000	73,000	101,000	148,000	224,000
State Dollars	71,000	108,000	150,000	218,000	329,000
Local Dollars	121,000	188,000	259,000	377,000	576,000
TOTAL COSTS	238,000	369,000	510,000	743,000	1,129,000

Nature of Program: (Same as Number 3, except does not serve as pre-co-op.)

TABLE XII

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVE 5: To provide career development competencies in marketing and distribution for eleventh graders through the cooperative method.

	1969	1970	1971	1972	1973
Number of Students Served	800	1,300	1,600	2,400	3.000
Allocation of Resources:					
Number of Schools	40	60	75	100	120
Number of Instructors	40	65	80	120	150
Cost of Instruction	480,000	813,000	1,040,000	1,620,000	2,100,000
Cost of Equipment	80,000	40,000	30,000	50,000	40,000
Cost of Supplies	20,000	32,000	40,000	60,000	75,000
Cost of Travel	20,000	30,000	38,000	50,000	60,000
Federal Dollars	540,000	732,000	804,000	1,068.000	1,137.000
State Dollars	--------	-------	---------	---------	---------
Local Dollars	60,000	183.000	344.000	712,000	1,138,000
TOTAL COSTS	600,000	915,000	1,148 000	1,780,000	2,275.000

Nature of Program: Designed primarily for the disadvantaged student: entry level training stations serve as an effective tool in social and occupational adjustment; instructor spends 2 hours per day in related instruction for one group of 20 students; remainder of day for coordination.

TABLE XIII

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVE 6: To provide career development competencies and initial specialist competencies for twelfth graders through the cooperative method.

	1969	1970	1971	1972	1973
Number of Students Served	2,875	3,920	5,280	7,220	9,675
Allocation of Resources:					
Number of Schools	125	140	160	190	225
Number of Instructors	96	130	176	240	323
Cost of Instruction	1,104,000	1,560,000	2,200,000	3,120,000	4,360,000
Cost of Equipment	21,000	47,000	65,000	100,000	115,000
Cost of Supplies	25,000	28,000	32,000	40,000	47,000
Cost of Travel	48,000	65,000	88,000	120,000	162,000
Federal Dollars	200,000	240,000	300,000	360,000	420,000
State Dollars	386,000	596,000	876,000	1,310,000	1,898,000
Local Dollars	612,000	864,000	1,209,000	1,710,000	2,366,000
TOTAL COSTS	1,198,000	1,700,000	2,385,000	3,380,000	4,684,000

Nature of Program: Vocational Cooperative Education program utilizing on-the-job training or simulated occupational experience in conjunction with a specific related class and preceded in junior year by a vocational preparatory course; designed to develop career development skills; Full Time Equivalent based on 2 sections of 15 or 15 twelfth co-op and 25 eleventh preparatory.

TABLE XIV

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVES 7 and 8: To provide entry level competencies and career development competencies for students in their first year beyond high school.
To provide career development and specialist competencies for employment in marketing and distribution at the mid-management level to second year students beyond high school.

	1969	1970	1971	1972	1973
Number of Students Served	2,500	3,630	4,000	5,280	6,000
Allocation of Resources:					
Number of Schools	25	33	40	48	60
Number of Instructors	63	91	100	132	150
Cost of Instruction	715,000	1,047,000	1,200,000	1,650,000	1,950,000
Cost of Equipment	20,000	33,000	30,000	35,000	52,000
Cost of Supplies	12,000	18,000	20,000	26,000	30,000
Cost of Travel	18,000	30,000	35,000	48,000	60,000
Federal Dollars	150,000	300,000	350,000	400,000	450,000
State Dollars	232,000	264,000	292,000	479,000	596,000
Local Dollars	383,000	564,000	643,000	880,000	1,046,000
TOTAL COSTS	765,000	1,128,000	1,285,000	1,759,000	2,092,000

Nature of Program: 1 and 2 year post secondary programs aimed at all the way from entry level to specialist in a specific field at the mid-management level.

TABLE XV

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVE 9: To provide entry level competency development for out of school youth and adults.

	1969	1970	1971	1972	1973
Number of Students Served	2,000	2,880	4,080	5,600	8,000
Allocation of Resources:					
Number of Schools	40	48	60	68	80
Number of Instructors	*	*	*	*	*
Cost of Instruction	120,000	172,000	245,000	336,000	480,000
Cost of Equipment	80,000	16,000	24,000	16,000	24,000
Cost of Supplies	20,000	29,000	41,000	56,000	80,000
Cost of Travel	10,000	12,000	15,000	20,000	25,000
Federal Dollars	230,000	229,000	325,000	428,000	609,000
State Dollars	-------	-------	-------	-------	-------
Local Dollars	-------	-------	-------	-------	-------
TOTAL COSTS	230,000	229,000	325,000	428.000	609,000

Nature of Program: Special single competency entry level courses aimed at the unemployed and underemployed.

*Specialists are brought in for duration of course; others are full time.

TABLE XVI

5 YEAR D.E. PROGRAM PLANNING

OBJECTIVE 10: To provide supplementary education in marketing and distribution for employees and employers in the field of marketing and distribution.

	1969	1970	1971	1972	1973
Number of Students Served	15,000	30,000	50,000	70,000	95,000
Allocation of Resources:					
Number of Schools	80	125	145	180	225
Number of Instructors	*	*	*	*	*
Cost of Instruction	225,000	450,000	750,000	1,050,000	1,425,000
Cost of Equipment	15,000	30,000	30,000	45,000	60,000
Cost of Supplies	15,000	31,000	52,000	74,000	100,000
Cost of Travel	25,000	30,000	35,000	45,000	60,000
Federal Dollars	140,000	140,000	140,000	160,000	180,000
State Dollars	70,000	266,000	510,000	751,000	1,054,000
Local Dollars	70,000	135,000	217,000	303,000	411,000
TOTAL COSTS	280,000	541,000	867,000	1,214,000	1,645,000

Nature of Program: Supplementary Training for employed persons in marketing and distribution.

*Not meaningful due to varying length of courses and large quantities of part-time instructors.

TABLE XVII

5 YEAR D.E. PROGRAM PLANNING SUMMARY

	1969	1970	1971	1972	1973
Number of Students Served	31,050	55,005	82,210	115,025	159,550
Allocation of Resources:					
Number of Schools	640	806	950	1,166	1,400
Number of Instructors	290	437	536	769	1,047
Cost of Instruction	3,554,000	5,628,000	7,580,000	10,961,000	15,403,000
Cost of Equipment	276,000	212,000	226,000	309,000	355,000
Cost of Supplies	118,000	185,000	249,000	346,000	459,000
Cost of Travel	141,000	181,000	254,000	340,000	439,000
Federal Dollars	1,566,000	2,074,000	2,560,000	2,954,000	3,640,000
State Dollars	979,000	1,473,000	2,235,000	3,683,000	5,365,000
Local Dollars	1,554,000	2,539,000	3,514,000	5,119,000	7,655,000
TOTAL COSTS	4,069,000	6,226,000	8,289,000	24,097,000	16,656,000

TABLE XVIII

ANCILLARY SERVICES

	1969	1970	1971	1972	1973
Administration State (Number)	8	9	10	12	14
State (Cost)	200,000	230,000	260,000	318,000	378,000
Local (Number)	6	10	15	20	25
Local (Cost)	96,000	165,000	255,000	350,000	450,000
Teacher-Educators Number	8	10	12	14	15
Cost	200,000	235,000	318,000	378,000	400,000
Curriculum and Materials Development	60,000	75,000	75,000	85,000	100,000
Research	15,000	15,000	18,000	20,000	25,000
Special Institutes	30,000	35,000	40,000	45,000	50,000
Other	50,000	65,000	80,000	95,000	110,000
TOTAL COST	651,000	820,000	1,046,000	1,291,000	1,513,000
Federal	253,000	325,000	420,000	519,000	600,000
State	250,000	295,000	340,000	413,000	488,000
Local	148,000	200,000	286,000	359,000	425,000

Evaluation System

1. Follow-up on graduates - (1 yr. 3yr. 5yr.)
   a. Present job
   b. Income
   c. Additional Specialized Training
   d. Paired comparisons for cost benefit analysis

2. Questionnaire to graduates of Distributive Education programs on all levels. Selection technique suggested: Selection at random.
   Areas to be evaluated:
   a. Curriculum
   b. Technical knowledge
   c. Significant value in meeting the graduate's needs.
   d. Others

3. Questionnaire to businessman to cover such areas as:
   a. Quality of the training
   b. Relevance
   c. Level of job entry skill
   d. Awareness of the student to his responsibility
   e. Other

4. Special Questionnaire to following selected groups for evaluation of socio-economic benefits:
   a. School administrator
   b. Guidance personnel
   c. State employment security commission
   d. Others

I. Decision

A. Include pre-high school services and interdisciplinary approaches to vocational technical education.

B. Proposed DE share under new legislation (additional amounts may be available if properly justified).

1. Disadvantaged - $300,000
2. Special Programs for Special Needs - $400,000
3. Post Secondary - $150,000
4. Research - $15,000
5. Innovative - $180,000
6. Teacher-Education - $75,000
7. Co-op Education - $400,000
8. Curriculum Development - $60,000

C. Using Parts I-IV as background, state the rationale and justification for "The Course of Action."

II. Program

A. What, Where, When, Who, Why, and How

B. Allocate Resources - people, material, time, money, etc.

III. Evaluation - develop the procedure that will be used to determine whether the needs, goals, and objectives have been met.

The challenges issued to us in parts IV, V, VI, and VII of the Workshop Problem indicate that we have not expanded our horizons far enough. Tables VIII through XVI take our objectives, identify quantity served, and allocate resources.

Table XVII provides a summary of our planned program and the budget for the next five years.

Table XVIII indicates the ancillary services that will support this program.

QUESTIONNAIRE RESULTS

A follow-up questionnaire (See Appendix G) was sent to each workshop participant in January of 1969. Responses were received from 32 of the 38 individuals who completed the workshop. The follow-up questionnaire was not sent to Mr. Roger Sathre of Idaho inasmuch as he had to return to Idaho at the conclusion of the first week of the workshop as the result of the death of Mr. Sam Glenn, the state director of vocational education. No follow-up reports were received from the following states: Connecticut, Florida, North Dakota, Oklahoma, Rhode Island, and Texas.

The respondents indicated they felt that it was still too early to be able to totally evaluate the benefits from the workshop. This process will undoubtedly involve several years time. However, the reports received from the participants indicate that many activities are taking place that are outgrowths of the workshop.

Inasmuch as the structure of the workshop followed the program planning, budgeting model used at the University of Maryland (needs, goals and objectives, data, alternatives, decisions, programs, and evaluation) the responses received by the participants also adhered to this pattern.

Since the time interval following the completion of the workshop has been brief, most of the reports from the several states have involved activities centered around the first few steps of the program, planning, budgeting model; namely needs, goals and objectives, data and alternatives.

In order that individuals reading this report might be able to better evaluate programs throughout the country it was felt that summary statements describing ongoing activities in the various states would be the most beneficial recording method available. Consequently, the activities from each state will be reported individually. Anyone wishing further information with reference to particular projects may contact the representative from the state in question. (See Appendix J)

ALABAMA

A Master-plan for the Vocational Education Program of Birmingham, Alabama is underway. This is a projected five year plan that will be submitted to the State for incorporation into their total State Plan as required by the Vocational Education Amendments Act of 1968. The plan must plainly state objectives that can be measured and allows for use of alternatives since percentage of funding is still in doubt.

A city plan for inservice training for teacher coordinators has begun. It was initiated in September and continues on a semi-monthly basis. Coordinated teaching and curriculum development is the primary purpose. Secondary benefits are being realized as ideas are exchanged along with materials and resources.

Collection of data for basis of selection of alternative has been a constant activity. Basing recommendations on projected needs of business and industry has required statistical study and research.

ALASKA

A five-year program for purchasing new equipment which is to be funded by the state and will be used by the local curriculum director and business teachers is being developed. This project is indirectly related to the workshop, in developing some areas of this project.

A program that developed as a direct outgrowth of the PPBS Workshop last summer is before the Alaska State Legislature at this time. A plan has been developed for utilizing the vocational areas of the high school during the summer months. This program is to cover the entire state and will open up the vocational programs in Alaska's high schools to the young people for the first time.

The representative from Alaska to the workshop has been called on quite frequently concerning long-range planning both for the state and for the local district, as a result of his workshop training.

CALIFORNIA

A report on the workshop was written and distributed to the State Director of Vocational Education; the Chief and Supervisors in the Bureau of Business Education; and others.

A program has been developed by the Bureau that utilized knowledge from some of the workshop sessions. The PPBS program's merit has been encouraged and distributive teachers and office teachers are prompted to "look-back, take-stock, and then plan several years ahead."

DISTRICT OF COLUMBIA

A program reporting format has been developed for the District of Columbia schools. The purpose of the form is to catalog all programs in operation in the public schools. Included in the format are program objectives, program description, staffing requirements and equipment requirements.

The occupational needs of Washington are currently being studied. This will be used in the development of budget needs relative to the expansion of distributive education for the District of Columbia.

The needs of distributive education in the District of Columbia were discussed with a Committee. The nature of the local D.E. programs, goals and objectives, current employment, projected needs, and training output were discussed.

GEORGIA

A special needs program has been instituted. A proposal was submitted to the Deputy Superintendent of Fulton County Schools, Principal of Russell High and State Supervisor of Distributive Education. The proposal was accepted and put into operation. A second program has been instigated at Sylvan High in the Atlanta School System.

Students are accepted from the 8 through 11 grades. They have fallen behind their classmates grade-wise and have case histories of absenteeism and/or aggressive tendencies. These students receive an hour class period on attitude, appearance, basic math, etc. They have been placed on jobs after school so they can graduate as soon as possible.

A revision of the 12 months Curriculum Guide for Atlanta Fulton County is underway. In August 1969 a one week training in audio visual aids will take place.

The Workshop was a means of emphasizing the job each individual has to play in developing vocational education. Each service must continue to produce effective graduates qualified to enter the world of work if public support is to continue.

ILLINOIS

The workshop principles have been implemented in preparation of the annual and biennial budget for the coming years.

An exemplary pilot project proposal has been submitted. This includes a complete line budget for all items.

A conference was held with the State Director in which a workshop involving the entire staff was discussed.

IOWA

PPBS has been explained to individual coordinators in an attempt to help them utilize the basics in selling curriculum changes and equipment purchases to the members of their local school administrative staff.

Statistics are being collected to use in the projected plan for the next fiscal year. A format such as that used in the workshop would be implemented.

KANSAS

A project, "Congratulations On Becoming A Training Sponsor" has been instituted. This project is designed to explain the cooperative program to the training sponsors who are cooperating with the program. The training sponsor, the trainee, and the teacher will benefit from a well defined program of instruction.

The Kansas representative has been elected Kansas Vocational Association President. The background gained at the workshop will prove helpful as the state program design proceeds.

A project designed to keep junior high school drop-out prone students in school through pre-vocational education has been instituted. The drop-out in high school has caused tremendous concern to everyone in the past few years. The project will be aimed at the junior high school level where the drop-out attitude is building. Pre-vocational programs will be added in an effort to entice the drop-out prone student to enter vocational programs on the senior high school level.

KENTUCKY

Vocational Education has undergone a complete reorganization in Kentucky. The area vocational school concept is used in this state. With the passing of the 1968 Vocational Education Act and the order to place vocational training within the reach of all who wanted it, expansion and a period of readjustment has taken place. With the exception of the pilot programs in Distributive Education, all secondary programs are in the high schools. The placing of distributive education programs in areas that meet with the needs of the local community, as well as staying within the established budgeting and programming for programs in Kentucky, is being accomplished. Out of reorganization come a group of supporting and supervisory personnel, "Reimbursed Coordinators". One reimbursed coordinator is stationed in each area vocational school, and is consulted and advised with in establishing and locating and allocating distributive education units from the state Department of Education.

Allocation of funds, even under the minimum foundation program that exists in Kentucky, where and when to open up new programs, and ability to discuss intelligently with reimbursed coordinators, has all been assisted and enhanced by knowledge gained in the PPBS activity.

MAINE

An orientation lecture at a seminar for D.E. Coordinators in Augusta was presented prior to the opening of school in September, 1968.

Superintendents in Portland have been made aware of the effectiveness of using the basic guidelines advocated at the workshop for controlling and evaluating programs in D.E. as well as other courses of study.

An attempt is being made to inform the city vocational staff of its obligation in helping the City of Portland and the School Department become familiarized with the specifications, techniques and implementation and also the planning procedures involved which will project the metropolitan area of Portland into an era of more precise evaluation.

MINNESOTA

A conference was held in connection with the development of a service station training program at the secondary level. The opportunity will be made available to all high schools, and will be utilized through the project method. The program and curriculum are being developed. The program will be modified as the department gains experience in the field of service station operation and to accommodate the program to the changing needs of the community and the various needs of the pupils to be enrolled through this program.

The project method of instruction relates to a vocational program whereby a planned arrangement of a sequence of activities or projects provide specific training in an occupational field within the confines of the Public School System. The curriculum will involve the following areas of instruction: starting and managing a service station, pump island selling, car service, automobile and lubrication service, tire, battery, and accessory service, etc.

MICHIGAN

The material assembled in the workshop was turned over first to Miss Jeanne Reed, Director of Business Education and then to Mr. Richard Shupe, Consultant for Distributive Education in the

state department. He is devoting full-time to revising the state plan in accordance with the Vocational Amendments of 1968.

MONTANA

On a supervisory level, planning has been better organized. Written communications with instructional personnel have been more informative and helpful.

In the event of additional staff services by the appointment of an additional person in business and distributive education, more time will be allotted for planning, forecasting and supervision rather than the program of plugging holes and taking care of emergency measures.

NEBRASKA

The principles of the workshop have been implemented in planning purchases of vocational instructional equipment for next year. Questions relative to this include: (1) How great is the investment in relation to the number to be trained? (2) How long is the training period? (3) How much of the time will this equipment be in use?

When the program of PPBS filters down from the Federal through the State level and to the local school systems the system will be applied and implemented more effectively. As a result of the workshop, the gains to be expected, the total cost, and the multi-year usage of equipment are being evaluated more specifically. The training cost per individual trainee is being examined more closely.

NEVADA

Workshop information was given to the Distributive Education teachers at the summer vocational conference in August 1968.

The Distributive Education teachers, in turn, used the workshop information to help in their budgets that were turned into the individual school administrators, which were then sent to the central administrative offices. This new budget planning helped the teachers in receiving needed supplies and materials.

Workshop information was also given to all state supervisors to help in their budget proposals.

Workshop information was used in two management supervision classes. The follow-up information has indicated that the use of this information was well received.

NEW HAMPSHIRE

A D.E. Foundation is being established as a result of a $1,000.00 donation from Sperry & Hutchinson, Inc. Four D.E. promotion workshops are also being planned as a result of a Sears Foundation grant. The planning of these will be directly related to the principles of planning studied during the workshop.

NEW JERSEY

Present programs regarding current employment and placement needs in the New Jersey labor force are being surveyed. An estimation of the enrollments for the high school, post secondary, adult and special needs area is also taking place. Many of the questions incorporated were a direct result of the workshop experience.

A consultant to act as the New Jersey DECA advisor has been assigned. This will give information regarding the needs of the youth who have special needs. The consultant will also act as urban education coordinator.

Pre-service and in-service teacher education is being conducted by teacher educators. A state-wide program based upon the needs of the teacher coordinator with the theme, "Innovate, Motivate, and Educate" will be held.

The distributive education unit is being used as the experimental group following PPBS for the Vocational Division's Master Plan which is now underway and under the direction of the Director of Research.

NEW MEXICO

Information on PPBS was relayed to Ralph L. Glecker, State Supervisor, and to Distributive Education, Office Education Teacher-Educator at ENMU in Portales, New Mexico.

The State Department has recently added a new full-time position as Planning Officer. During the staff meeting for February the Planning Officer devoted the entire meeting to planning, using PPBS. A guest consultant from Utah was present in that meeting.

NEW YORK

Program planning for area occupational centers is now in effect. All area occupational centers originally funded, in part, through the use of Vocational Education Act, 1963 funds are now

being required to project their programs ahead for another 5-year program. This was done at the time of their original funding and will now be required for a second five-year period. The effect of this long range planning is to project costs, and the program expansion needs that are in harmony with job opportunities in the geographical area served by the center.

Beginning with July 1, 1969, all distributive education funding in New York State will be done on the basis of project proposals submitted by schools. The funds will support the following:

1. Extended school year or summer employment of distributive education personnel for one to eight weeks in July and August to provide services such as on-the-job supervision of employed students, organization and operation of special projects involving disadvantaged youth and adults, conduct of activities involving youth organizations including summer leadership training, tour of donor organizations, publicity and public relations assignments, etc.

2. Special innovative or demonstration activities conducted during, but not necessarily limited to, the summer months such as centralized district-wide program development and supplementary service activities; interdisciplinary or occupational mix demonstration projects, team teaching, etc.; special compensatory summer or academic year programs for disadvantaged youth involving partially subsidized employment; extended school day program involving exploratory or intensive training experience for disadvantaged youth or adults.

NORTH CAROLINA

PPBS has been applied in the local program at Frank L. Ashley High School in Gastonia, North Carolina. PPBS principles have been applied in planning the various classroom activities, club activities, and in submitting requests for various equipment and supplies which were needed to aid the instructional program.

OHIO

The Mohican Retreat Series has been developed. The purpose of the project is to develop statements of what Ohio Distributive Education is, statements of purpose and the role of Distributive Education Service State Staff, including definition of services offered and areas and depth of impact; a planned program of goals to be accomplished by the Distributive Education service--a five year plan with yearly revisions; quantitative goals for each staff member and/or functional group of staff members; determine guidelines for method, means and procedure for periodic evaluation.

OREGON

A meeting was held with the State Supervisor of Distributive Education in which possible ways of cooperating in projects utilizing the approach outlined in the workshop were discussed.

PENNSYLVANIA

PPBS is now the accepted method of budget presentation for the state of Pennsylvania. The representative from Pennsylvania at the summer workshop has participated as a consultant on PPBS in the are of Distributive Education for the State Staff Meetings.

SOUTH CAROLINA

Work groups in several areas of the state in cooperation with RCU and Media Center at Clemson University have been instituted to help supervisors or teachers in distributive education programs. Specific courses are being considered and outlines developed for presentation as a result of the PPBS workshop.

A Committee has been set up for identifying factors necessary to determine information needed, and to develop an instrument for securing this information. This is being done with the Research Coordinating Unit at Clemson University.

Surveys planned for each of 46 counties will be completed before July 1. One has been completed to date. Experienced teachers on the university level will develop teaching materials beginning June 9, 1969; plans are in progress to provide scholarship to further the in-service and pre-service teacher-education program; broadening course offerings at the University of South Carolina are being developed to meet the new and emerging needs of teachers.

Surveys will be conducted to determine vocational needs in each school district (survey to be done by a team of trained research personnel); the number of students identified; a factor will have been arrived at to determine the individual cost per student for vocational training; and a lump sum for reimbursement will be made to the district.

SOUTH DAKOTA

The representative from South Dakota, as a result of change in position, and state, lacked any information concerning the implementation of PPBS principles. However, in his new position, as Vocational Counselor at Eastern Iowa Community College, planning, implementing and evaluation of the project upon completion are major activities.

UTAH

A proposal has been made to plan and implement a new and varied vocational program in a comprehensive high school to meet the needs of all students. A survey of the community was made with the assistance of the Utah State Employment Security Office. A decision was made to improve and increase the guidance program; to offer additional courses; to make the basic education more meaningful; to increase the staff; and to promote the supervised work experience programs.

Behavioral objectives were written to cover the program; procedures and evaluative criteria were outlined; and a budget was prepared. The evaluation of the program will be made by a committee of businessmen, state specialists, educators and the schools personnel. The budget was approved and justified on the basis of the program objectives.

VERMONT

The New York State Distributive Education Association, Annual Meeting and Workshop was held. The outline used during the Workshop was used to present the material to the Vermont coordinators and later to the State Department of Education. The arrangement and logic built into the presentation encouraged the Department to approve the project for all Vermont coordinators--for the first time. The Vermont coordinators and New York coordinators participated jointly in six workshops.

A teacher education program at Casleton State College has been completed. The initial moves and outlines were based on the workshop material.

VIRGINIA

A project to develop a five-year budget for the Distributive Education Service of the Roanoke City Public Schools is in progress. The plan includes developing a budget which is based on an objective oriented program for Distributive Education in Roanoke. The budget will be prepared in terms of a 5 year projection. The purpose is to look at the whole program in terms of major goals instead of on the basis of money requested in previous years.

It is anticipated that there will be a direct spinoff from the Roanoke PPBS experiment and its subsequent implementation at the state level to the pre-service and in-service teacher education. The pre-service and in-service teacher education will benefit from the state-wide use of the new budgeting system.

Channels of communication between the local and state personnel have already been strengthened as a result of the workshop. This includes the local supervisor, director of instruction, superintendent and the state supervisor of distributive education, his assistant, and the assistant state supervisor of vocational education.

WASHINGTON

A cashier checker training Mobile Unit project is in progress. The need for the project was developed through the cooperative efforts of the State Division of Vocational Education and the Washington State Food Dealers Association.

A State Plan for Vocational Education project is also in progress. Steps used are PPBS. In addition, October and August Teacher Training Conferences were held. In annual goals and budget requests the staff used the PPBS method.

WEST VIRGINIA

As the result of West Virginia not having a Distributive Education Supervisor at the present time, it is very doubtful that any work on projects concerning PPBS will be undertaken until a full-time D.E. supervisor is employed.

WISCONSIN

Madison Area Technical College will acquire additional space by June 1969. Most current activities relate to requests for and utilization of space and equipment. As a direct result of the workshop, emphasis is now being placed on complete planning to insure better communications with staff and administration.

The workshop has assisted in establishing guidelines for improving, planning, implementing, and evaluating activities. Benefits should be apparent at the state and national level through improved communications when reporting data. The primary reports given are three quarterly reports submitted every three months and a year end annual report summarizing all activities for the fiscal year.

The PPBS system was used in consulting the Milwaukee Public Schools concerning new programs for the disadvantaged. The principles of PPBS were beneficial in establishing their goals and objectives. Suggestions have been made to teacher educators to learn to evaluate their programs in terms of benefits.

CONCLUSIONS

The following are the conclusions concerning the achievement of the objectives of the Workshop on Planning, Implementing and Evaluating Balanced Programs in Distributive Education.

1. The participants developed a greater understanding and appreciation of the processes involved in program planning and budgeting systems as a result of the workshop.

2. The participants developed an understanding of the social and economic problems facing vocational education.

3. The participants became acquainted with the various types of base line data needed to develop balanced programs in distributive education.

4. The participants developed an understanding of the scope of the distributive education program, including pre-high school services and interdisciplinary approaches to vocational education.

5. The participants developed a model for use in program development and evaluation.

6. The participants will be able to assist in implementing program planning and budgeting techniques in their respective states and metropolitan areas.

RECOMMENDATIONS

1. Further follow-up conferences and workshops should be conducted to be certain that program planning and budgeting techniques are implemented in the various states. This is especially true for those states which were not represented at the workshop.

2. Visiting consultants should be required to submit written presentations prior to the time presentations are made. This should be mandatory for all U.S. Office of Education sponsored activities.

3. Workshops which are designated as being for state and metropolitan supervisory personnel should not be attended by local coordinators who are requested to attend by their state supervisors. Since these individuals are not concerned with the problems related to PPB they are not as concerned with implementing.

4. Follow-up studies should not be held so soon after the workshop is completed. Reports from the several states indicated that although work is progressing in PPB, relatively few impacts have been started six months following completion of the workshop.

5. More concentrated effort should be made either upon the part of the U.S. Office of Education or the states to provide for dissemination of workshop information by those in attendance. This should be done by providing funding for participants to attend area conferences to make these reports to interested individuals in their respective states.

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PLANNING - PROGRAMMING - BUDGETING

And

SYSTEMS ANALYSIS

GLOSSARY

U. S. ACCOUNTING OFFICE
January 1968

FOREWORD

This glossary related to planning-programming-budgeting (PPB) and to systems analysis was prepared for use by professional staff members of the United States General Accounting Office. It is a revision of a similar glossary in booklet form dated September 1967.

The definitions and descriptions contained herein are general in nature and do not deal with the various difficulties and problems involved in using the techniques. For this reason users may want to refer to books and publications that are more technically oriented and exact than this booklet is intended to be.

The Report of the President's Commission on Budget Concepts, dated October 1967 (for sale by the U.S. Government Printing Office), adopts a special meaning for some PPB terms. Where considered appropiate, the special meanings of the Budget Commission are noted. Certain recommendations of the Budget Commission were adopted for use in the fiscal year 1969 budget presented to the Congress in January 1968.

Suggestions and comments on the glossary are welcomed. If they are made in writing, they should be addressed to the Director, Office of Policy and Special Studies, U.S. General Accounting Office, 441 G. Street, N.W., Washington, D. C. 20548.

The Planning-Programming-Budgeting System

The Planning-Programming-Budgeting System (PPBS) represents an effort by the Executive Branch of the Federal Government to prepare budgets in such a systematic way as to make them most useful in establishing priorities, in forward planning, in choosing between programs, and in measuring costs against meaningful performance yardsticks.

In August 1965, the President of the United States prescribed that the major Federal departments and agencies adopt a PPB system which had been instituted, with good results, in the Department of Defense in 1961. All other agencies were urged to also work toward adopting the system.

In essence, PPB calls for:

1. Designing for each government agency an output-oriented program structure under which data on all operations and activities can be presented in categories that reflect the agency's purpose or objectives.

2. Making analyses, in terms of costs and benefits, of possible alternative objectives of an agency and of alternative programs for meeting those objectives.

3. Translating decisions on programs to be carried out into financial budgets for consideration and action by the President and the Congress with subsequent devising of operating budgets for management control purposes.

In general, there are a number of direct benefits which can be expected to emerge from the adoption of this system. These benefits are those that will result from:

1. The disciplines of long-range planning.

2. Documented analyses of alternate courses of action.

3. More systematic consideration of ways and means of accomplishing the purposes for which Government agencies exist.

4. Better decisionmaking processes as to the use of the resources that governments can command.

PPB involves selecting long-range objectives, deciding on specific courses of action to be followed, and translating planning and programming decisions into specific financial plans for relatively short periods of time. To accomplish its objectives, PPBS requires orderly procedures for handling multi-year inputs and outputs (costs and benefits) of Federal programs. Its usefulness depends, in part, upon the existence of an analytical capability for systematically examining the resource implications of programs and for selecting the least-cost means of achieving program objectives.

Systems Analysis

Systems analysis may be viewed as a search for and evaluation of alternatives which are relevant to defined objectives, in order that such evaluations can be presented to decisionmakers for their consideration.

There are several aspects of systems analysis which should be noted. First, a systems analysis consists of both procedures and techniques. The procedures involve construction of a model to show the interrelations between the system variables or inputs and the output sought, the quantification of the relationships between inputs and outputs or benefits and the determination of the choice of inputs that produces the desired result.

The techniques of systems analysis include the various methods of quantitative analysis, mathematical statistics, mathematical operations research and techniques known as decision theory. However, systems analysis is not synonymous with the application of sophisticated techniques, and many of the most important systems analyses may not use them.

Second, in carrying out a systems analysis it is usually necessary to make numerous assumptions. It is the responsibility of a good systems analyst to obtain a prior knowledge of the decisionmaker's preferred assumptions. The most helpful analysis is one which confirms or rejects anticipated results based upon those assumptions. This is not to say that the systems analyst should use no imagination. His analysis may, in fact, identify alternatives and assumptions which the decisionmaker will prefer to those originated by himself.

Third, a systems analysis usually deals with only part of a problem area. Although the ideal result of an analysis is the identification of the best overall system and its manner of operation, suboptimization is usually necessary because alternatives at all levels of decision-making cannot, as a practical matter, be analyzed in depth simultaneously. However, it is possible to consider broader program interrelationships at successively higher echelons by using less sophisticated models, and this practice will be increasingly helpful as an aid to the judgment of the Congress and of top executives in the agencies.

Fourth, systems analysis is not an attempt to measure the unmeasurable. But one of the opportunities that systems analysis offers for creative work is seeking ways of giving valid measurement to things previously thought to be unmeasurable. An analyst should not leave considerations that cannot be quantified out of the analysis. Inevitably, such considerations will be left out of the calculations, but an analyst should list and describe such factors.

Finally, systems analysis is not a substitute for the decision-maker's judgment. It is an aid--a tool--that can be used by the decisionmaker to sharpen his judgments.

PLANNING-PROGRAMMING-BUDGETING
AND
SYSTEMS ANALYSIS
GLOSSARY

Accrual Accounting

An accounting system in which revenues and expenditures are recognized as they are earned or occur regardless of when payment of expenses is made or when the income is actually received. An accrual accounting system reflects the resources available to an agency, the receipt of goods and services, the use of resources in relation to work performed and benefits derived during a particular time period, and the liabilities of the agency. For management it enables more effective controls because it provides data on all available resources and on expenses that can be compared with and related to program performance during a given period. Accrual accounting in Federal agencies is required by P.L. 863 (August 1, 1956). Frequently it is contrasted with the cash basis of accounting which emphasizes cash receipts and disbursements during a given period.

Accrued Expenditures

The monetary amounts of goods received, services rendered, expenses incurred, assets acquired (except as noted below), construction performed, and grants earned during a given period, regardless of when payment is made, or of whether invoices have been received. The portion of any such expenditures which is unpaid at a given point in time is a liability. The portion of payments made for which the expenditures have not accrued (such as advances and prepayments) is an asset. As noted by the Budget Commission, accrued expenditures should not be confused with program costs. Accrued expenditures measure resources acquired, while program costs measure resources used. The Budget Commission recommended that the Federal budget be presented on an accrued expenditure basis and expressed the belief that once "expenditures" have been redefined for budget purposes to fit the accrued expenditures concept, there will be no need to use the term "accrued expenditures," and the term "expenditures" will automatically apply to the budget figures developed on the accrual concept.

Activity

A program category (q.v.) expresses the purpose of a program; activity is a term which is sometimes used to refer to a way in which the purpose may be accomplished. For example, research and development, standards and regulation, distribution of information, and training of personnel, may be activities applicable to a particular agency program.

Administrative Budget

The most familiar of three types of Federal budgets used prior to fiscal year 1969. It excludes expenditures from trust funds such as social security benefits and grants to states for highway construction, and certain receipts such as social security contributions and excise taxes which are earmarked for trust funds. Amounts shown in the administrative budget are on a cash basis except for interest expense which is on the accrual basis. Expenditures and receipts of government enterprises, such as the Post Office, are shown only if wholly owned by the Federal Government and are shown net, i.e., difference between expenditures and receipts. See also: Budget, Consolidated Cash Budget; National Income Accounts Budget.

Algorithm

A set of ordered procedures, steps, or rules, usually applied to mathematical procedures, and assumed to lead to the solution of a problem in a finite number of steps. A familiar algorithm is the process of finding a square root--a process in which various steps are repeated until a satisfactory solution is obtained.

Allotment Procedure

A procedure whereby an agency head or other authorized agency employee distributes the agency's apportioned funds to those authorized to incur obligations. See also: Apportionments.

Alternatives

Within any one agency, this term means other possible programs besides those already decided upon. It suggests a comparison of two or more programs (i.e. two or more possible approaches) toward fulfilling the same objective. Used in this context the term is output-oriented; it suggests substituting an entirely different program (and therefore a different output or outputs) for a program already planned or in process. On the other hand, alternative ways to do a given job takes the program as given, and raises possibilities for changing the mix of inputs.

Analog Method of Cost Estimating

A graphical method of cost estimating which is based on historical costs that are too limited to allow statistical estimating and which is more economical to prepare than an engineering estimate. Graphical analysis is often helpful to more clearly understand the degree of relationship of the data points. The analog estimate is normally adjusted by deducting historical costs of components which are not comparable and adding estimated costs

of new components. See also: Statistical method of cost estimating; Cost estimating relationship; Engineering method of cost estimating; Regression analysis.

Apportionment

A distribution made by the Bureau of the Budget of amounts available for obligation and expenditure in an appropriation of fund account into amounts available for specified time periods, activities, functions, projects, and objects, or combinations thereof. The amounts so apportioned limit the obligations to be incurred or, when so specified, expenditures to be accrued.

Appropriation

Ordinary current appropriations (either no-year or one or more years) are budget authorizations granted currently by Congress, both to incur obligations and to make expenditures in a definite specified amount. Has excluded contract authorizations and authorizations to spend debt receipts. Under the Budget Commission's recommendations, these latter types of authorizations are also called appropriations, but appropriations to liquidate contract authorizations would not be counted as new appropriations.

Authorization

An act of Congress which authorizes Federal programs, obligations, or expenditures. The term sometimes refers to basic substantive legislation setting up a program or an agency, and authorizing appropriations to be made for them, but not actually providing authority to spend. See also: Appropriation.

Attribute

A quality. Sampling for attributes is sampling where each unit is found either to have or to lack some characteristic. This is contrasted with sampling for variables, where a numeric measurement is recorded for each item. In sampling for attributes the objective is to estimate the number of times a characteristic occurs in a population, often expressed as a percentage of the total.

Bayesian Statistics

The translation of subjective forecasts into mathematical probabilities. Statisticians traditionally base probabilities on empirical research. Where there are no empirical probabilities available, Bayesian statistics uses best estimates as if they were firm probabilities.

Benefit-Cost Analysis

See: Cost-benefit analysis.

Benefit-Cost Ratio

An economic indicator of efficiency, computed by dividing benefits by costs. Usually, both the annualized benefit stream and the cost stream are discounted so that the ratio reflects efficiency in terms of the present value (q.v.) of future benefits and costs.

Boolean Algebra

A process of reasoning, or a deductive system of theorems using a symbolic logic, and dealing with classes and propositions. It employs symbols to represent operators such as AND, OR, NOT, EXCEPT, IF. . . .THEN, to permit mathematical calculation.

Budget

A financial plan serving as a pattern for and control over future operations; hence, any estimate of future costs; any systematic plan for the utilization of manpower, material, or other resources. In the report of the Budget Commission, the term "budget" also refers to the summary totals of appropriation, receipts, expenditures (excluding net lending), expenditure account surplus or deficit, gross and net lending, total expenditures, and total budget surplus or deficit. The budget Commission recommended that a unified summary budget statement be used to replace the three (Administrative Budget, Consolidated Cash Budget, National Income Accounts Budget) or more competing budget concepts. This recommendation was carried out in the fiscal year 1969 budget submitted to the Congress in January 1968.

Budgeting

Budgeting is the process of translating planning and programming decisions into specific projected financial plans for relatively short periods of time. Budgets are short-range segments of action programs adopted which set out planned accomplishments and estimate the resources to be applied for the budget periods in order to attain those accomplishments.

Capital Coefficient
(Capital-Output Ratio)

In general, the amount of capital necessary to produce an additional unit of output. In national income analysis, the ratio of the total stock of capital goods (book value of plant and equipment net of depreciation) to the gross value of total production

Central Limit Theorem

If small independent random samples are drawn with replacement from a sufficiently large population and the mean of each sample is used to form a distribution of sample means, the distribution will be approximately normal with a mean approximately equal to that of the true population and a standard deviation divided by the square root of the number of sample means.

Coefficient of Correlation (r)

A measure of how well a linear regression line (q.v.) fits the data. This measure, when squared, equals the coefficient of determination (r^2) which is a measure of the proportion of the total variation (squared deviations from the average) in the dependent variable explained by variation in an independent variable. A high coefficient of determination indicates a good fit for the regression line. Thus a coefficient of correlation of 0.9 indicates that the least-squares regression of the dependent variable on the independent variable accounts for 81 percent (the coefficient of determination) of the variance in the dependent variable. The limit of the coefficient of determination and of the coefficient of correlation is 1.0.

Coefficient of Determination

See: Coefficient of correlation.

Coefficient of Variation

A means of dispersion in the form of a number which is not influenced by the scale of measurement; computed as the ratio of the standard deviation (q.v.) to the arithmetic mean. Because of differences in scale of measurement, standard deviations cannot be compared as easily as the coefficients of variation.

Consolidated Cash Budget

A Federal budget which shows receipts from and payments to the general public, i.e., all non-Federal Government units, including trust funds and some Federal-government sponsored enterprises. A deficit shows that the public is accumulating cash or government securities. This budget stresses the financial impact of the overall Government program. See also: Budget, Administrative budget; National Income Accounts budget.

Consumer's Surplus

In economics, the difference between the price that a consumer pays for a good or a service and the amount that he would be willing to pay rather than be deprived of the good or service.

Continuous Distributions

A probability distribution in which a variable can assume all values (or all values within a certain interval). Example: The amount of rainfall per month in the District of Columbia, the time a car spends on the Chesapeake Bay Bridge if it enters between 5:15 and 5:30 p.m.

Correlation Analysis

A statistical technique which relates a dependent variable to one or more independent variables in order to determine the closeness of their relationship. When more than one independent variable is involved, the relationship is called multiple correlation. See also: Regression analysis.

Cost-Based Budgets

Budgets in which activity levels are measured in terms of value of resources consumed in carrying out the activity, rather than in terms of obligations (q.v.) incurred. These resource requirements, when distributed to program elements and categories and time phased to obligation requirements, provide a cost basis for PPB.

Cost-Benefit Analysis
(Benefit-Cost Analysis)

An analytical approach to solving problems of choice which requires the definition of objective and identification of the alternative that yields the greatest benefits for any given cost, or what amounts to the same thing, that yields a required or chosen amount of benefits for the least cost. The term usually applies to situations in which the alternative outputs can be quantified in dollars. A chief characteristic of cost-benefit analysis is that its aim is to calculate the present value of benefits and costs, subject to specified constraints. See Also: Cost-effectiveness analysis.

Cost Curve

A graphical representation of the relationship of cost to another variable, such as output. It is conventional to construct curves with costs along the vertical axis and the related variable along the horizontal axis.

Cost-Effectiveness Analysis

An analytical approach to solving problems of choice which requires the definition of objectives, identification of alternative ways of achieving the objective, and identification of the

alternative that yields the greatest effectiveness for any given cost, or what amounts to the same thing, that yields a required or chosen degree of effectiveness for the least cost. The term is usually used in situations in which the alternative outputs cannot be easily quantified in dollars. See also: Cost-benefit analysis.

Cost-Estimating Relationship (CER)

Any numerical relationship which is useful in computing estimated costs of materials or activities. These relationships range from simple averages and percentages to complex equations derived by regression analysis (q.v.) which relate cost (dependent variable) to physical and performance characteristics (independent variables). Estimated costs of an aircraft airframe, for example, may be determined by regression analysis to be a function of airframe weight, delivery rates, and speed. The CER shows how values of these independent variables are converted into costs.

CPM and PERT

CPM (Critical Path Method) and PERT (Program Evaluation and Review Technique) are network analysis models. Each has its own modeling language, but they differ in only one fundamental respect: CPM seeks to determine the expected times of completion of the total project and times of completion of the subprojects of which it is composed. PERT goes further and seeks to estimate variances associated with these expected times of completion.

Criteria

Premises on which priorities are established among alternatives in order to measure relative degrees of desirability.

Crosswalk

The expression of the relationship between the program structure and the appropriation/budget structure. A crosswalk can be viewed as a table, the stub (rows) of which lists program categories and the columns of which show appropriations and budget activities.

Decision Variable

A variable over which one can exert some control, whose value one can choose as a result of a decision. The decision variable might be the amount of food one must eat to satisfy hunger. If the

relationship between the values of the decision variable and the level of goal attainment can be defined, one can then find the value of the decision variable that maximizes the attainment of the goal.

Degrees of Freedom

Refers to the size of the sample (**n**) less the number of parameter estimates "used up" in the process of arriving at a given unbiased estimate. For example, to estimate the arithmetic mean needed to calculate the variance of a population it is necessary to use the arithmetic mean of the sample, thus using up one degree of freedom. The estimate of the population variance would thus have n-1 degrees of freedom. In the case of regression analysis, one degree of freedom is lost for each of m variables; thus the regression variance has n-m-2 degrees of freedom.

Demand

Usually means "demand schedule" which is the relationship between price and quantity demanded. The demand schedule expresses how much of the good or service would be bought at various prices at a particular point in time.

Sometimes changes in the quantity demanded are confused with changes or shifts in the demand schedule. A shift in the demand may mean, for example, that consumers will demand more of the good or service at all possible prices than they would have previously demanded at the same prices. On the other hand, an increase in the quantity demanded (the market demand) would result only by decreasing the price of the good or service.

Depreciation

Depreciation is a reduction in the value of assets, usually because of wear, aging, obsolescence, etc. Depreciation accounting is a system of accounting which aims to distribute in a systematic and rational manner the cost or other recorded value of tangible capital assets, less salvage value, over the estimated useful life of the assets. Such accounting is a process of allocation, not of valuation.

Deterministic Model

A model in which variables can only take on known values, i.e., a model that does not permit any uncertainty as to the size of inputs or outputs. For example, a set of simultaneous equations for which there is a unique solution. See also: Probabilistic model; Simulation.

Diminishing Marginal Utility

The principle that, as the rate of consumption of a good is increased, a point is reached where additional units provide less and less utility.

Diminishing Returns
Variable Proportions--Law of

The economic principle that, as there is an increase in the quantity of any variable input which is combined with a fixed quantity of other inputs, the marginal productivity of the variable input must eventually decline. For example, additions of capital to a fixed quantity of labor may result in an increase in output, but subsequently the marginal output and then the average output associated with the variable input (capital) will begin to drop.

Discounted Cash Flow

See: Present value; Internal rate of return.

Discrete Distributions

A distribution in which a variable can assume only specific values (usually integer values 0, 1, 2,...). Example: The number shown on a die, baseballs lost per game, cars waiting for the Chesapeake Bay Bridge at 5:15 p.m.

Dynamic Programming

See: Linear programming.

Economic Efficiency

That mix of alternative factors of production (resources, activities, programs, etc.) which results in maximum outputs, benefits, or utility for a given cost; alternatively, it represents the minimum cost at which a specified level of output can be maintained.

Economic Good

A physical object which is both useful, in the sense that it satisfies a want or need, and relatively scarce. Both qualities are necessary. Air, while useful, is not scarce, and is not an economic good. See also: Free good.

Economies of Scale

Factors that reduce average production costs as the size of a plant increases. Economies of scale may be classified either as (1) internal, resulting from the increased size of an individual firm, or (2) external, resulting from the increased size of an industry as a whole.

Effectiveness

The performance or output received from an approach or a program Ideally, it is a quantitative measure which can be used to evaluate the level of performance in relation to some standard, set of criteria, or end objective.

Elasticity

In economics, a measure of the responsiveness of the quantity demanded or supplied to changes in price. Elasticity measures the degree to which price is effective in calling forth or holding back quantity. The concept is further defined under absolute elasticity, proportional elasticity, and unit elasticity in the following paragraphs.

Absolute Elasticity

The absolute change in quantity (demanded or supplied) which results from a unit absolute change in price. At any point, absolute elasticity is measured by the gradient or slope (q.v.) of the demand and supply curves. A steep curve is inelastic, a unit change in price (vertical axis) producing only a small change in quantity (horizontal axis). A flat curve is elastic, a unit change in price producing a large change in quantity.

Proportional (Marshallian) Elasticity

The ratio of the proportional change in quantity demanded or supplied to the proportional change in price. It may be viewed as the percentage change in the quantity (demanded or supplied) which would result from a 1 percent change in price. If supply elasticity is 3.5, a 1 percent price increase will result in a 3.5 percent increase in quantity supplied. If demand elasticity is -0.8 a 1 percent increase in price will result in a 0.8 percent decrease in quantity demanded.

Unit Elasticity

A term used to describe the case where a percentage change in price causes the same percentage change in quantity demanded. A 2 percent increase in price would result in a 2 percent decrease in quantity demanded.

Engineering Method of Cost Estimates

A traditional means of cost estimates which depends on a well-defined description of a proposed system, availability of detailed bills of material, detailed operations, and specialized judgment. The method produces good results for systems involving standard components and no high-risk developments.

Expenditures

See: Accrued expenditures.

Fiscal Policy

Federal Government economic stabilization policies designed to foster economic goals such as high employment, stable growth and prices, and balance of payments equilibrium, through changes in taxes and levels of Government spending as distinct from monetary policy (q.v.).

Free Good

A good (or service) that is so abundant, in relation to the demand for it, that it can be obtained without paying, money, without exchanging another good, or without self-exertion.
See also: Economic good.

Gaming (Game Theory)

A type of simulation concerned with situations of conflicting interests. Mathematically, it is a process of selecting an optimum strategy in the face of an opponent who has a strategy of his own. The theory of games refers to a branch of mathematical analysis developed by von Newmann and Morgenstern to study tactical and decisionmaking problems in conflict situations.

Gross National Product (GNP)

The total market value of all final goods and services produced in the Nation in one year. The GNP was about $443 billion in 1957 and about $785 billion in 1967.

Heuristic

Solution of a problem by a trial and error approach frequently involving the act of learning and often leading to further discovery or conclusions without providing proof of the correctness of the outcome.

Hurwicz Criterion

This criterion seeks to base decisions under uncertainty somewhere between the conservative maximin (or minimax) and the optimistic maximax principles. The criterion employs a device called the coefficient of optimism (alpha) which measures the expectations of the decisionmaker on a scale from 1 (optimistic) to 0 (pessimistic). Maximum payoffs are multiplied by the coefficient and minimum payoffs by 1 minus the coefficient. The criterion is the sum of these products and the strategy with the maximum sum is selected. See also: Maximin criterion.

Incremental Cost

In incremental analysis, the total cost associated with a significant change in the level or output. See: Marginal cost.

Indifference Curve

A graphical representation of alternative combinations of two variables that are related to a constant value of a third variable. The slope of an indifference curve is known variously as "the marginal rate of substitution," "the substitution ratio," and "the relative marginal utility ratio." See also: Iso-quant curve.

Input-Output (Interindustry, or Leontief) Analysis

A systematic technique for quantitatively analyzing the interdependence of producing and consuming units in an economy. It studies the interrelations among producers as buyers of each others outputs, as users of scarce resources and as sellers to final consumers. Generally, the assumption is that producers have little choice as to factor proportions in the short run and react to demand by changing output rather than price. The technique has been useful for structural analysis and policy guidance, less so for prediction.

Internal Rate of Return

The interest rate which, when used to discount future costs and benefits to the present, results in an equality of costs and benefits. Proposed public investment projects may be ranked by their internal rate of return (IRR) for decisionmaking purposes provided the projects are not mutually exclusive. Ranking projects in this manner implies that funds produced by the projects are reinvested at the IRR. The IRR must be compared with some minimum discount or interest rate before a decision to invest or not to invest can be made. The IRR is also referred to as the interest rate of return, the marginal efficiency of capital, and project yield. See also: Present value.

Iso-quant Curve

An indifference curve (q.v.) showing the different combinations of two factors of production that will yield the same physical output.

Iterative Process

A process for calculating a desired result by means of a repeating cycle of operations, which comes closer and closer to the desired result.

Laplace Criterion

This criterion bases decisions under uncertainty upon the assumption that, because the probabilities of future states of nature are unknown, they should be considered to be equal. If a decision is based on the Laplace criterion, equal probabilities are assigned to each possible state of nature, and the alternative which maximizes expected value is selected. The Laplace criterion is sometimes called the "Principle of Insufficient Reason."

Learning (or Progress) Curve

A curve which describes the set of points conforming to the observed phenomenon that cost reductions yield a constant percentage decrease for each doubling of the cumulative quantity produced. This means that, for example, the curve as drawn may show that the cost of manufacturing unit 2 will be a certain percentage of the cost of manufacturing unit 1; the cost of unit 4 will be the same percentage multiplied by the cost of manufacturing unit 2, etc.

Linear Programming

A deterministic model (q.v.) which assumes linear behavioral relationships and in which an optimal solution is sought (maximizing or minimizing) subject to one or more limiting constraints. Linear programming is used to determine the best or optimum use of resources to achieve a desired result when the limitations on the resources can be expressed by simultaneous linear equations. Every solution has a primal and a dual aspect, that is, a solution maximizing something (primal) also minimixing something (dual). The solution first sought is usually the primal regardless of the objective of the analysis. Linear programs are static; in those instances where change is introduced as a factor the analytic technique used is known as dynamic programming. See also: Simplex method; objective function.

Lorenz Curve

A curve which is often a graphical depiction of income distribution. It is derived by plotting the cumulative proportion of people, from the poorest up, against the cumulative share of total income which they receive. If everyone received the same income, the Lorenz curve would be a 45 degree straight line.

Macroeconomics

The division of economics which deals with aggregates--total income, total output, total employment, the general price level, the general level of wages, etc. Macroeconomic analysis may also be referred to as aggregate economic analysis or income and employment theory. See also: Microeconomics.

Marginal Analysis

The process of identifying the benefits or costs of alternative behaviors as unitary changes in the alternative variables occur and equalizing the benefit-cost ratios to form a point of indifference (trade-off) for decisionmaking purposes. See also: Indifference curve.

Marginal Cost

In a marginal analysis (q.v.) the change in total cost due to a one unit change in output. Theoretically, a purely competitive firm will maximize profits by increasing output until marginal cost equals price, while an imperfectly competitive firm will equate marginal cost to marginal revenue (q.v.).

Marginal Revenue

The change in total revenue due to a one unit change in output. See also: Marginal Cost.

Marginal Utility

The change in total utility due to a one unit change in the number of goods and services consumed, e.g., the additional satisfaction that a purchaser derives from buying an additional unit of a commodity or service. Marginal utility is a psychological rather than an objectively measurable concept.

Markov Analysis

A method of analyzing the current movement of some variable in an effort to predict the future movement of that same variable. A first-order Markov process is based on the

assumption that the probability of the next event depends on the last event and not at all on any previous event. A second-order Markov process assumes the next event depends on the past two events, etc.

Mathematical Expectation

In any experiment or game in which numerical values are attached to each of the mutually exclusive events in an exhaustive set, the sum, over that set of events, of the products of the values of the events and the probabilities of occurrence of the events is called the "mathematical expectation of the values," the "expectation," or the "expected value."

Matrix

An array of quantities into rows and columns, usually capable of being subject to a mathematical operation by means of an operator or another matrix according to prescribed rules. It is normally enclosed by two parentheses to distinguish it from a determinant which is enclosed by parallel lines. Whereas a determinant can be solved for its numerical value, a matrix, taken as a whole, has no numerical value. A matrix can be used, by a process of inversion, to solve a set of simultaneous equations. A matrix with one column is called a column vector and a matrix with one row is called a row vector. See also: Vector.

Maximax Criterion

This criterion bases decisions under uncertainty upon the optimistic hypothesis that the decisionmaker should select that strategy which produces the maximum of the maxima. See also: Hurwicz criterion; Maximin criterion.

Maximin Criterion (Wald Criterion)

This criterion bases decisions under uncertainty upon the conservative hypothesis that the alternative which produces the maximum of the minimum returns should be selected. This criterion can also be employed (as can the Laplace, et.al., criteria) in minimizing as well as maximizing problems. In minimizing problems, one seeks the alternative which gives the minimum of all maxima. The criterion in these circumstances is called minimax rather than maximin. See also: Hurwicz criterion; Maximax criterion.

Minimax Criterion

See: Maximin criterion.

Microeconomics

The division of economics which is concerned with the income of a firm, the output of a firm or single industry, the price of a single commodity or service, the wage rate of an individual worker, or the wage bill of one firm or industry. PPBS and systems analysis draw heavily upon the analytic tools of microeconomics. See also: Macroeconomics.

Model

A schematic representation of the relationships that define a situation under study. A model may be mathematical equations, computer programs, or any other type of representation, ranging from verbal statements to physical objects. Models permit the relatively simple manipulation of variables to determine how a process, object, or concept would behave in different situations.

A decision model is a model which, in effect, performs management's planning and control functions--to the extent that management so delegates when the model is constructed and implemented.

Monetary Policy

Federal Government economic stabilization policies, primarily executed by the Federal Reserve System, designed to achieve economic goals such as high employment, stable growth and prices, and balances of payments equilibrium, through influence on the money supply, interest rates, and credit availability, as distinct from fiscal policy (q.v.).

Monte Carlo Methods

A catch-all label referring to methods of simulated sampling. When taking a physical sample is either impossible or too expensive, simulated sampling may be employed by replacing the actual universe of items with a universe described by some assumed probability distribution (q.v.) and then sampling from this theoretical universe by means of a random number table.

National Income Accounts Budget

A Federal budget concept which emphasizes the economic impact of Government programs. Receipts (other than taxes withheld from income) are shown on the accrual basis. Expenditures are shown on a "goods delivery date" basis and do not include loan repayments and expenditures on land and existing assets. District of Columbia amounts are excluded. See also: Budget, Administrative budget, Consolidated cash budget.

New Obligation Authority (NOA)

The total of all budget authorizations, provided by current or prior actions of the Congress, of whatever type, of a given year which provide new authority to incur obligations. NOA has consisted of appropriation, contract authority, or authority to spend debt receipts. Under the Budget Commission's recommendations, the word "appropriations" will be applied to this concept of NOA.

Objective Function

The measure of effectiveness used in linear programming models (q.v.) which is to be maximized or minimized. In business the objective function may be profit; in Government agencies the objective may be minimization of costs of maximization of program output with given costs. See also: Linear programming.

Objectives

Goals, or results that the decisionmaker wants, or should want to attain. Hence, the end product or output of a program.

Obligations

Obligations in Federal accounting represent commitments to acquire materials or services or to make payments under certain conditions (such as loans, grants, subsidies, and contributions). The Congress has specifically prescribed the kinds of transactions that may be recorded and reported as obligations of the Government of the United States. Total obligations incurred would thus be the amounts of orders placed, contracts awarded, services received, and similar transactions requiring disbursement of money. In contrast, under the accrual basis of accounting, expenditures represent the receipt of funds, property, or services within a given period of time. See: Accrual accounting.

Operating Program

Conceptually, a mix of activities and resources under common management which represents the most detailed organizational or budgetary level whose identification is required in the information system. The purpose can be identified by one one program category (q.v.). Alternatively, the operating program may serve more than one such purpose, in which case each part of the operating program identified by a discrete program category is a program element.

Operations Research (OR)

The use of analytic methods adopted from mathematics and other disciplines for solving operational problems. Among the common techniques used in operating research are: linear programming (q.v.), probability theory, information theory, Monte Carlo methods (q.v.) and queuing techniques (q.v.).

Opportunity Cost

The measurable advantage foregone as a result of the rejection of the next best alternative use of resources. For example, the opportunity costs of assigning auditors to undertake a particular examination are the benefits that would have been achieved by assigning the auditors to the next best alternative audit.

Optimum, Solving for the

An optimum may be derived mathematically by differentiating a function with respect to each variable, setting the resulting equations equal to zero, and solving them.

Parameter

A value which is held constant during some calculation. The parameters of a system or model are characteristic, some of which may be assigned selected values while examining the effects of variation in other characteristics of the system.

Payback Period

The length of time required for the stream of net cash proceeds produced by an investment to equal the original cash outlay required by the investment. One of several project evaluation methods. Generally considered by analysts to be inferior to the present value method (q.v.) because it ignores project benefits and costs once the cash outlay for the investment has been recovered. Also called payoff period.

Performance Budget

A budget based upon functions, activities, and projects, whose principal analytical orientation is the measurement of efficiency of operating units. For example, such a budget in an agency might require computation of the cost per unit of mail processed for one branch of the agency and the cost per loan application processed in another branch. See also: Program budget.

PERT

See: CPM

Planning

Planning is the selection or identification of the overall, long-range objectives of the organization and the making of systems analyses (q.v.) of various possible courses of action in terms of relative costs and accomplishments or benefits in order to aid managers in deciding on courses of action (i.e. Programs) to be followed in working toward achieving those objectives. These analyses are variously referred to as cost-effectiveness, cost utility, or cost-benefit (benefit-cost) studies.

Essentially, this level of planning involves deciding on what the organization is in business to do and generally how it is to be done. This is also called strategic planning.

Population

In statistics, the total collection from which a sample is to be drawn. Sometimes referred to as the universe.

Present Value (Net Present Value)
or Discounted Present Value

The maximum amount that an investor or agency could pay for or invest in a project without being financially worse off. The present value method of project evaluation requires the analyst to use an interest rate to discount future benefits and costs to the present. A cost of capital concept is used by commercial enterprises to select the discount rate whereas the Government borrowing rate and the social opportunity discount rate (q.v.) are often advocated for use by agencies of the Federal Government. The present values (P.V.) of $100 payable in two years can be defined as that amount of money necessary to invest today at compound interest in order to have $100 in two years. Thus, P.V. depends on the rate of interest, the frequency of compounding, and the time horizon selected. See also: Internal rate of return.

Probabilistic Model

A model in which variables may take different and unknown values, hence, a set of simultaneous equations for which the various possible outcomes form a probability distribution containing an unexplained error term. Such models are sometimes called stochastic, which means, literally, "making a best guess." See also: Deterministic Model.

Probability

The ratio of the number of outcomes that would produce a certain event to the total number of possible outcomes.

Objective Probability

A probability for which there is definitive historical evidence and common experience to support an estimate of the probabilities.

Subjective Probability

A probability for which historical evidence is not available for decisionmaking; the decisionmaker must rely on his own estimation of a situation and the likelihood of various possible outcomes.

Probability Distribution

A model for the prediction of the relative frequencies of outcomes arising from random events.

Program

A major agency endeavor, mission oriented, which fulfills statutory or executive requirements, and which is defined in terms of the principal actions required to achieve a significant end objective.

Program and Financial Plan (PFP)

A multi-year budget forecast based on the program structure (q.v.) which projects the future (usually five years) output and cost implications of current decisions and shows comparative data for the fiscal year just past, the current year, and the budget year.

Program Category

A classification within a program structure (q.v.) which expresses the purpose of the program.

Program Element

A subdivision of a program category (q.v.) which comprises the specific products that contribute to an agency's objective (s). If an agency's operating program (q.v.) is distributed over several program categories (q.v.) each part of the operating program identified by a discrete program category is a program element.

Program Memoranda (PM)

Documents which (a) succinctly present an agency's major program recommendations within a framework of agency objectives; and (b) summarize relevant information on objectives, effectiveness,

cost of alternatives considered, and the supporting analyses. They also provide background for the development of annual budget and legislative programs.

Programming

Programming is the process of deciding on specific courses of action to be followed in carrying out planning decisions on objectives. It also involves decisions in terms of total costs to be incurred over a period of years as to personnel, material, and financial resources to be applied in carrying out programs.

Program Structure

A set of program categories (q.v.) usually refers to the set of program categories of an agency.

Queuing Techniques

Techniques used when a problem involves providing a supply of goods and services in order to satisfy random arrivals demanding these goods and services. More specifically, the techniques, associated with operations research, which determine the amount of delay that will occur when operations (e.g. supplying goods or services) have to be provided in sequences for objects (e.g. customers) arriving randomly. Queuing theory may be applied to any operation in which the objects to be dealt with arrive at irregular intervals and in which the operating facilities are of limited capacity.

Regression Analysis

The association of one or more independent variables with a dependent variable. Under static conditions the analysis is called correlation. When used for predictive purposes, it is referred to as regression. The relationships are associative only; causative inferences are added subjectively by the analysts.

Where only one independent variable is used the technique is known as simple regression and takes the form of a regression line (q.v.) of the equation:

$$y = a + bx$$

When more variables are added, a dimension is added with each variable, making graphical representation impossible beyond two independent variables. However, the general analysis is the same for multiple regression, taking the general equation form:

$$y = a + bx_1 + cx_2 + dx_3 + \ldots + zx_n$$

For effective regression analysis to be undertaken, the data base must meet certain requirements.

Regression Line

A least squares equation meeting these assumptions: a stochastic (q.v.) relationship in which the random error term is from a normally distributed population with zero mean and constant variance. See also: Regression analysis.

Regret Criterion (Savage Criterion)

This criterion bases decisions under uncertainty upon a computation of the difference between (1) the payoffs realized when various states of nature occur and (2) the maximum payoff possible. The decisionmaker acts to minimize this difference, called regret.

Rent, Pure Economic

The reward of a fixed factor of production over and above the minimum reward necessary to keep that factor in production. Rent may also be defined in economics as any return over the opportunity cost (q.v.) of a fixed factor. It is often impossible in theory to distinguish between profit and rent.

Risk

"Measurable uncertainty" per the economist Frank Knight. In decision theory, the distinction is made that risk is measurable while uncertainty (q.v.) is not. In situations of risk, the probabilities associated with potential outcomes are known. The term "risk" may be associated with situations of repeated events, each individually unpredictable but with the average outcome highly predictable. In situations of uncertainty, the probabilities are not known.

Saddle Point

An element of a matrix that is both the lowest element in its row and the highest element in its column. In game theory, the saddle point is called the minimax solution. However, a saddle point is not a necessary matrix requirement, and therefore, does not always exist.

Satisficing

A term, advanced by Herbert Simon, which relates to decisionmaking as a process of reaching satisfactory positions rather than optimal positions, where the standard of satisfactory is given by complex psychological and sociological considerations.

Scalar

A quantity having magnitude but no direction as contrasted with a vector (q.v.) which has both. A scalar is the multiplier by which multiples of a vector may be formed (by multiplying each coordinate o. the vector by the scalar).

Scenario

A description of the environment of the problem area under analysis.

Secondary Benefits

Benefits from a project that accrue indirectly to an external entity. An example of derived secondary benefits is the increased net income of farmers and others from processing, transporting, and selling products in the area of a Bureau of Reclamation project. An example of an induced secondary benefit resulting from the project would be the net income of a new plant that located in the project area solely because of the project.

Sensitivity Analysis

A procedure by which different judgments are made about the value of a parameter and then an analysis is run with each of the different values to see what different effects result. The technique may be employed when the data base is nonexistent or of such poor quality that other analytical methods cannot be employed reliably.

Shadow Price

An imputed value; an exchange rate other than a market price. In economics (especially in appraisal of public investment projects), the estimates of the intrinsic value of the scarce factors of production available. Shadow prices may be used when market prices (particularly those of capital and labor) diverge from the values that would prevail if (1) the investment under consideration were actually carried out, and (2) no fundamental disequilibria existed in the market. In linear programming (q.v.), shadow price is the amount of change in objective achievement per marginal change in some constraint.

Simplex Method

A systematic, iterative, but still trial and error method of solving linear programming problems where (1) the number of variables prohibits graphical methods or simple algebraic solutions; and (2) the "stepping stone" trial and error method is inappropriate or infeasible. The simplex method starts with one possible solution and makes a systematic search for a superior one; then the procedure is repeated. See also: Linear programming.

Simulation

An abstraction or simplification of a real world situation. Hence, in its broadest sense any model is a simulation, since it is designed to replicate some existential condition (s). Simulations may take the form of either deterministic models (q.v.) or probabilistic models (q.v.).

Man-machine simulation

Man-machine simulation is simulation in which both calculating machines and human decisionmakers interact in simulating a process or system.

Pure-machine simulation

Refers to those simulations that are carried out solely by machine. This is in contrast to man-machine or all-man simulation in which human decisionmakers serve as part of the model.

Slope

The algebraic change in the dependent variable (y) per unit increase in the independent variable (x), as a point P. moves along the line. Thus, if y increases as x increases, the slope is positive and the line rises to the right. If y decreases as x increases, the slope is negative and the line falls to the right, or rises to the left. If y remains constant as x increases, then the slope is zero and the line is parallel to the x axis. Stated in symbols, a number, m, called the slope of L is defined by the ratio:

$$m = \frac{Y_2 - Y_1}{x_2 - x_1}$$

Social Opportunity Cost Discount Rate (SOC)

A discount rate used to measure the value to society of the next best alternative uses to which funds employed in a public investment project might otherwise have been put by taxpayers. In a perfectly competitive economy the cost of such funds would be represented by the market rate of interest. Some economists believe that evaluations of proposals for Federal Government projects require that future costs and benefits be discounted at a discount rate which reflects both the social time preference rate (q.v.) and the productivity of funds in private investment.

Social Time Preference Rate (STP)

A discount rate which is used to assign current values to future consumption and which, however, it may be computed, theoretically reflects society's evaluation of the relative desirability of consumption at different points in time. Not all economists agree on the source and significance of the STP rate. Selection of an STP rate reflects an implicit balancing of the marginal time preference and the marginal productivity of investments; however, because of numerous market imperfections this should not be taken to mean that the market rate of interest is a measure of both time preference and the productivity of capital; selection of an STP rate requires the exercise of judgment. See also: Social opportunity cost discount rate.

Spillover

An economy or diseconomy for which no compensation is given (by the beneficiary) or received (by the loser). Spillover is sometimes synonymous with externality and with external economy or external diseconomy. See also: Secondary benefits which is a closely related concept.

Standard Deviation

A measure of the spread of a set of values around the arithmetic average; the tendency of individual values to vary from the mean. Mathematically, it is the square root of the mean of the squares of the deviations of the observed values from the mean.

Standard Error of Estimate

A measure of the quality of a regression relationship; another form of the concept of standard deviation (q.v.)

in which the deviations are measured from the arithmetic line rather than from an arithmetic mean. Another measure of the quality of a regression relationship is the coefficient of correlation (q.v.). See also: Regression analysis.

Statistic

A measure, quantity or value which is calculated from a sample rather than from the population (q.v.).

Statistical Inference

Using information contained in a sample to make predictions about a larger set, the population (q.v.).

Statistical Method of Cost Estimating

A method of cost estimating utilizing statistically determined cost estimating relationships (q.v.) which express cost as a function of the characteristic s specified for the case in question. A valuable aspect of statistical estimating is that an objective statement regarding cost uncertainty can be provided. See also: Analog method of cost estimating; Cost estimating relationship.

Stochastic

A variable or process involving randomness. A variable is stochastic if the value it assumes is governed by chance and the values it may assume can be described by a probability distribution.

Stochastic model

See: Probabilistic model.

Suboptimization

Selection of the best alternative course of action which pertains to a subproblem, i.e., to only part of the overall problem or objective. Suboptimization is usually necessary because alternatives at all the various levels of decisionmaking cannot, as a practical matter, be analyzed simultaneously before decisions are made at any level. Also referred to as any intermediate stage in a long-run goal attainment program.

Supply

Defined similarly to demand (q.v.) except from the seller's rather than the consumer's viewpoint.

Systems Analysis

Systems analysis may be viewed as the search for and evaluation of alternatives which are relevant to defined objectives, based on judgment, and, wherever possible, on quantitative methods, with the objective of presenting such evaluations to decisionmakers for their consideration. In this sense, systems analysis encompasses both cost-benefit (q.v.) and cost-effectiveness analyses (q.v.) and other analyses which may be more limited in scope.

Target Group

A group within the general population toward which a program is aimed or on which it has a significant impact.

Technical Coefficients

Coefficients obtained from an input-output matrix which show what given or fixed percentage input from each sector is required to produce a unit of output. See also: Input-Output analysis.

Transfer Payments

In economics, grants of money that do not call for any quid pro quo. Examples are: (1) payments from social insurance programs that are not self-supporting, and (2) veterans' bonuses. In national income accounting, transfer payments are not included in Gross National Product (q.v.) but are included in personal income accounts.

Uncertainty

In general, uncertainty and risk (q.v.) are used as synomous terms. A distinction sometimes made between risk and uncertainty is that an event is risky if a probability distribution can be ascertained. It is uncertain if the probability of success or failure cannot be ascertained.

Universe

See: Population.

Utility

In economics, the real or fancied ability of a good or service to satisfy a human want. Usually synonymous with satisfaction, pleasure, or benefit. See also: Marginal utility.

Variable

A quantity that may increase or decrease without other essential changes.

Variance

The variance is found by calculating the deviation of each item from the mean or average, squaring these deviations, and calculating the average of the sum of the squared deviations.

Vector

A quantity having magnitude and direction as contrasted with a scalar (q.v.) which has magnitude only. Vectors are described by a set of numbers, much the way a point on a map has coordinates. A crucial property of vectors is the "parallelogram law of combination." Vectors are important because a variety of things in science and mathematics have both magnitude and direction and combine according to the parallelogram law. See also: Matrix.

Zero-Sum Game

A game in which the sum of the gains (X wins two points) exactly equals the sum of the losses (Y loses two points).

APPENDIX A

April 11, 1968

Dear State Supervisor:

Enclosed are copies of the brochure and application blanks for the Workshop on Planning, Implementing and Evaluating Balanced Programs in Distributive Education. Will you please distribute these applications to metropolitan supervisors in your states.

In the event you are not able to personally apply to attend the workshop, will you please notify us as to your choice to attend from your state. Metropolitan supervisors will be selected on the basis of recommendations made by State supervisors.

You will note that the enclosed materials must be returned to us no later than May 6, 1968. Thank you for your cooperation and consideration in this matter.

Respectfully,

Gary R. Smith
Director

Enclosures

APPENDIX B

May 27, 1968

Congratulations! You have been selected to attend the Workshop on Planning, Implementing and Evaluating Balanced Programs in Distributive Education at Utah State University, July 29 through August 9, 1968. We are looking forward to having you as our guest in Logan.

We are forwarding under separate cover several brochures describing Utah, our University and the surrounding area. We are also enclosing a form concerning your transportation and lodging that should be returned immediately to Professor Gary Smith, Department of Business Education and Office Administration, Utah State University, Logan, Utah 84321.

The program is now in the final development stage and it promises to be a rewarding two weeks. We are anticipating a successful experience together.

In order to bring our budget into line with the U.S. Office figures we were forced to cut part of the travel allowance. We have it arranged so that all participants will be able to receive full air fare, only rather than this figure equalling coach fare, it will be necessary to ask some participants to come by excursion fare. We will advise you as to the exact amount you will receive in a later letter, however it will be between and . We hope you will appreciate our predicament in this situation and we assure you that under no circumstances will you receive less than the excursion fare.

If any emergency arises which makes it impossible for you to attend, please let us know immediately so that another applicant can be selected.

Respectfully,

Gary R. Smith
Director

APPENDIX C

W O R K S H O P S C H E D U L E

MONDAY July 29	8:30	Welcome. . . President Glen L. Taggart Dean Robert P. Collier Mr. Walter Ulrich Mr. Gary R. Smith
	9:00	Purpose of the Workshop. . . Harvey Hirschi Vern Buehler
	9:30	The Role of PPBS as viewed by the United States Office of Education. . . Miss Mary Marks
	10:00	Break
	10:30	Needs, Survey & Analysis, Population Trends, Occupational Changes, Technological Changes, Societal Needs, Characteristics, Population Served, Employment Opportunities. . . . . Dr. Garth Mangum
	12:00	Lunch
	1:00	The Future Role of Vocational Education Reorientating Vocational Education. . . Dr. Garth Mangum
	2:00	Pretest. . . Ron Strand
	2:30	Break
	3:00	Orientation to Groups, Organization of Groups, Introduction of Case Problem. . . Ron Strand
	4:30	Registration
TUESDAY July 30	8:30	Overview and History of PPBS. . . Dr. Joseph McGivney
	10:00	Break
	10:30	Overview and History (continued)
	12:00	Lunch
	1:30	Theory of Systems. . . Dr. Joseph McGivney
	3:30	Planning and Control Systems (Strategic Planning and Management Control)

Workshop Schedule

WEDNESDAY July 31	8:30	The Planning Process. . . Dr. Joseph McGivney
	10:00	Break
	10:30	Programming and Management Control (Program, Budgeting, Accounting). . . Dr. Joseph McGivney
	12:00	Lunch
	1:30	Programming and Management Control (continued)
	3:00	Break
	3:30	Programming and Management Control (continued)
	6:00	Steak Fry - Middle Spring Hollow - Logan Canyon
THURSDAY August 1	8:30	Student and Staff Accounting Systems. . . Dr. Joseph McGivney
	10:00	Break
	10:30	Student and Staff Accounting Systems (continued)
	12:00	Lunch
	1:30	Program Budgeting in Vocational Education. . . Dr. Joseph McGivney
	3:00	Break
	3:30	Role of Computors in Planning and Management
	7:00	Case Problem. . . Ron Strand
FRIDAY August 2	8:30	Data Sources—Pertinent—Valid—Factual— Assumptions—Qualitative and Quantitative Analysis. . . Dr. Norman Hyatt
	10:00	Break
	10:30	Analysis and Interpretation of Data as Related to Distributive Education. . . Dr. Bernard Nye
	12:00	Lunch

Workshop Schedule

1:00 Group Discussion on Data Sources and Uses... Dr. Bernard Nye

2:00 Interaction and Discussion of Application of Material In the Case. . . Ron Strand

3:00 West Yellowstone

MONDAY
August 5

8:30 ERIC Clearinghouses - Their Role in Vocational Education. . . John Stephens

9:15 Framework for Analysis: Input-Output Relationships.
1. The Educational Production Process
2. The Factor—Factor Model—How to Produce?
3. The Factor—Product Model—How Much to Produce?
4. The Product—Product Model—What to Produce?
. . . Mr. Bill Nelson

10:00 Break

10:30 Framework (continued)

12:00 Lunch

1:00 Determination of Value—Prices
1. Demand
2. Supply
3. Equilibrium Prices. . . Mr. Bill Nelson

2:30 Break

3:00 Case Problem. . . Mr. Ron Strand
Problem will demonstrate the application of economic analysis to resource allocation and program determination in vocational education

TUESDAY
August 6

8:30 Educational Investment Alternatives
1. Needs—Objectives—Means
2. Identification of Benefits
3. Identification of Costs
4. Problems of Measurement. . . Mr. Bill Nelson

10:00 Break

10:30 Interest and Returns to Investment
1. Determination of Interest Rates
2. Logic of Discounting
3. Investment Criteria
4. Evaluation of Investment Criteria. . .
Mr. Bill Nelson

Workshop Schedule

12:00 Lunch

1:00 Role of Statistics in PPBS
1. Descriptive Statistics
2. Inferential Statistics
3. Assumptions and Limitations
4. Role in Planning, Programming and Budgeting. . . Mr. Bill Nelson

2:30 Break

3:00 Case Problem
Problem will be a benefit-cost analysis of a specific vocational education program and will emphasize some of the critical assumptions through the application of sensitivity analysis.

WEDNESDAY
August 7

8:30 Act of Decision Making. . . Dr. Quinn McKay

10:00 Break

10:30 PPB Rational & Justification for Decisions Made. . . Dr. Quinn McKay

12:00 Lunch

1:00 Program Development, What, Where, When, Who, Why, How: Plan, Responsibility, Flexibility, People, Material, Time, Money, Occupational Categories, Educational Levels, Geographical Locations, Educational Subdivisions, Auxillary Services, Non-Educational Services. . . Vernon Buehler

3:00 Break

3:30 Case Problem. . . Ron Strand

THURSDAY
August 8

8:30 Evaluation Techniques of PPB, Concept, Process, Products, Total Program: Courses, Teacher, Student, Methodology, Facilities, Analysis, Interpretations & Impact, Quantitative and Qualitative Data. . . Mr. Norman Hyatt

10:00 Break

10:30 Objectives Achieved, Desired Change, Required Change, New Directions & Emphasis, Continuous-Planned. . . Mr. Norman Hyatt

Workshop Schedule

	12:00	Lunch
	1:00	Case Problem. . . Ron Strand
	3:00	Break
	3:30	Post test
FRIDAY August 9	8:30	Reports on Workshop Case Problems. . . Ron Strand
	10:00	Break
	10:30	What's Next for PPB & DE. . . Ron Strand
	12:00	Lunch
	1:00	Workshop Evaluation. . . Harvey Hirschi
	3:00	Stipend Receipt

APPENDIX D

WORKSHOP PROBLEM

Part I

Mr. Samuel A. Smith, Vocational Director for Transylvania, has just returned from a National Meeting for State Directors of Vocational Education. He is very excited about the prospects for increased funding of Vocational Education over the next five years. He has requested that you identify the <u>needs</u> of all the people of Transylvania as they relate to the distributive occupations. It is intended that this be a five year projection and that it include special sections on inner city as well as statewide needs.

Specifically, Mr. Smith has requested that you identify:

A. Current employment
*B. Expansion needs in labor force
*C. Replacement needs in labor force
*D. Training output
    1. Vocation D.E.
    2. Other sections

*Each year for the next five years (1969-73).

Relate labor demand to labor supply for the distributive occupations and the implications for programs inherent in this relationship.

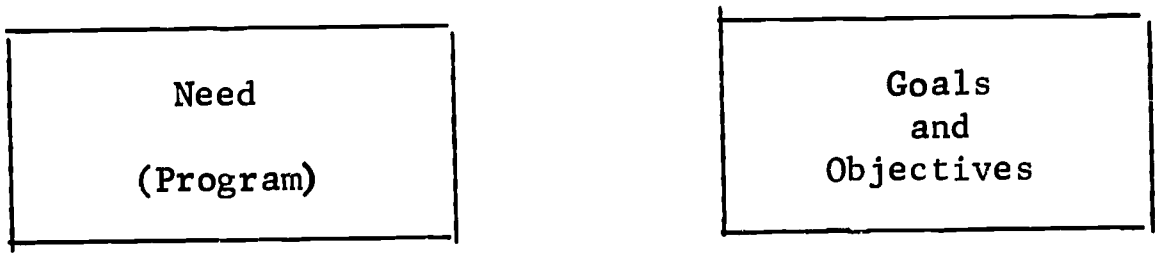
DISTRIBUTIVE OCCUPATIONS

Employees, Supervisors or Managers for Transylvania

1965 Census Bureau

Occupation	Male	Female	Total
Buyers and Department Heads, Retailing	14,997	3,489	18,486
Credit Managers	1,872	638	2,510
Floor men and Floor Managers - Retailing	132	238	370
Purchasing Agents and Buyers	4,166	309	4,475
Salaried Managers, Officials and Proprietors of Construction, Manufacturing, Transportation, Communications, Utilities and Sanitary Services, and Wholesale Trade	103,522	13,373	116,895
Managers, Officials and Proprietors Salaried for all the Retail Trade	23,374	3,449	26,823
Managers, Salaried of Banking and other Finance	9,545	1,618	11,163
Managers, Salaried of Insurance and Real Estate	5,203	972	6,175
Managers, Business Services	1,862	456	2,318
Managers, Salaried Personal Services	2,071	974	3,045
Managers, Salaried, Miscellaneous Industries	7,234	2,770	10,004
Managers, Officials, and Proprietors - self-employed for Construction, Manufacturing, Transportation, Communications, Utilities and Sanitary Services and Wholesale Trade	76,728	10,798	87,526
Managers and Proprietors, Self-Employed - Retailers	39,242	7,222	46,464
Managers, Self-Employed - Banking and other Finance	811	28	839
Managers, Self-Employed - Insurance and Real Estate	1,330	168	1,498
Managers, Self-Employed - Business Services	1,349	163	1,512
Managers, Self-Employed	3,413	1,627	5,040
Agents (Transportation)	5,494	1,344	6,838
Bank Tellers	1,541	3,922	5,463
Cashiers	2,558	16,538	19,096
Collectors - bill and account	598	141	739
Insurance Adjusters, Examiners and Investigators	2,431	293	2,724
Shipping and Receiving Clerks	9,778	835	10,613
Sales Workers of all Types	165,391	99,659	265,050
Decorators and Window Dressers	1,104	838	1,942
Attendants, Auto Service and Parking	17,474	317	17,791
Delivery men and Route men	18,065	338	18,403
Counter and Fountain Workers	809	4,061	4,870
Attendants, Recreation and Amusement	2,414	324	2,738
Porters	1,582	48	1,630
Ushers, Recreation and Amusement	653	146	799
Waiters - Waitresses	3,343	44,107	47,450
Warehouse men	5,422	408	5,830
Stock Clerk and Storekeeper	10,603	1,714	12,317
Ticket, Express and Station Agents	3,622	561	4,183
TOTAL	549,733	223,886	
GRAND TOTAL - Distributive Occupations			773,619

WORKSHOP ON PLANNING, IMPLEMENTING AND EVALUATING BALANCED PROGRAMS IN DISTRIBUTIVE EDUCATION



Workshop Problem

Part II

Mr. Joseph Johnson, Director of Planning, Vocational-Technical Division, State Department of Education for the State of Transylvania has participated in a national conference on PPBS and is now conducting an "in-house" PPBS conference for the Voc-Tech. Division. It is a "working" conference and each program unit has been asked to state their goals and objectives for the next five years beginning with 1968-69.

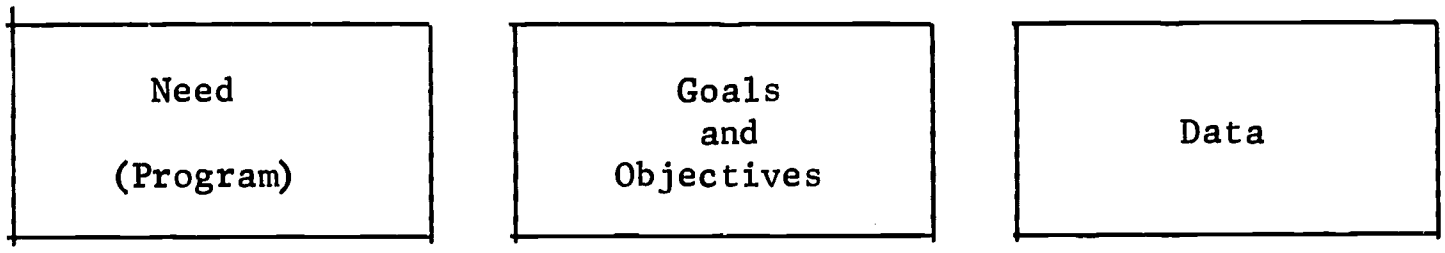
Prior to "turning-us-loose" on this task, Mr. Johnson asks Mr. Smith to make a few remarks. Our director reminds us that our objections should:

(1) Be explicit
(2) Be specific
(3) Reflect society's current attitude towards voc. ed.
(4) Be quantitatively measurable
(5) Reflect the fact that we are not sure of the amount of funds we will have and, thus, our objectives should be placed in priority with the most important first.
(6) Provide for a special set of objectives for each of our two largest cities, Serling and Vamp.
(7) Reflect the proposed legislation which will provide additional funds for programs for the disadvantaged work experience programs, pre-vocational programs, innovative programs, etc.; this will be especially important in our inner city objectives.

Upon the completion of Mr. Smith's remarks, Mr. Johnson asks the staff to divide into their program unit areas (Ag., DE, Health, Home Ec., Industrial Arts, OE, Technical, and T&I).

You, of course, are the DE unit and proceed to "tackle" the above task.

WORKSHOP ON PLANNING, IMPLEMENTING AND EVALUATING BALANCED PROGRAMS IN DISTRIBUTIVE EDUCATION



Workshop Problem

Part III

Mr. Johnson, Director of Planning, has asked Mr. James Green, Accountant, Vocational-Technical Division, to address our "in-house" PPBS Conference. Mr. Green provides us with rather substantial financial data on our division for the past five years (see attached data) and the proposed 1968-69 budget.

Mr. Smith then addresses the group and he requests us to:

(1) assign total dollar costs to each of our objectives
(2) indicate by each objective the amounts for federal, state, local, and other sources
(3) make a "laundry list" of the types of data necessary to accomplish the above.

Part III - SUPPLEMENT

Vocational-Technical Expenditures, and Enrollments for Transylvania 1963-68

Expenditures	1963-64	1964-65	1965-66	1966-67	1967-68
Total	25,000,000	35,000,000	40,000,000	45,000,000	50,000,000
Federal	1,000,000	4,000,000	5,000,000	6,500,000	7,000,000
State	11,825,000	14,800,000	16,250,000	17,000,000	18,800,000
Local	12,000,000	16,000,000	18,500,000	21,000,000	23,500,000
Private (Equip, & Supplies)	150,000	172,000	205,000	440,000	625,000
Private (cash)	25,000	28,000	45,000	60,000	75,000
Total for DE	473,400	782,800	1,065,000	1,300,800	1,648,000
Federal	35,000	70,000	90,000	125,000	145,000
State	202,000	324,000	461,000	526,000	705,000
Local	231,000	379,000	497,000	622,000	754,000
Private (equip. & supplies)	3,000	6,000	6,000	12,000	24,000
Private (cash)	2,400	3,800	11,000*	15,000	20,000
Secondary Prep Instruction	--	162,000	297,000	406,800	560,000
Secondary Co-Op Instruction	205,000	258,000	306,000	333,000	390,000
Secondary Instructional Equipment	13,000	21,000	44,000	36,000	50,000
Secondary Travel	17,000	21,000	27,000	33,000	36,000
Post-Secondary Instruction	75,000	122,000	146,000	195,000	240,000
Post-Secondary Equipment	6,000	12,000	8,000	18,000	24,000
Post-Secondary Supplies	3,000	5,000	6,000	7,000	9,000
Adult Prep Instruction	--	4,000	8,000	12,000	18,000
Adult Supl. Instruction	63,000	72,000	78,000	90,000	108,000
Special Needs Instruction	--	--	--	--	--
Special Needs Travel	--	--	--	--	--
Special Needs Equipment	--	--	--	--	--
Local Administration	30,000	33,000	36,000	40,000	45,000
State Administration	22,000	24,000	42,000	46,000	50,000
Teacher Education	33,000	35,000	50,000	60,000	72,000
Research	--	4,000	6,000	7,000	10,000
Materials Development	--	--	1,000	2,000	4,000
DECA (Total)	2,400	3,800	11,000**	15,000	20,000
Scholarships	--	--	2,500	4,000	5,000
Awards	300	400	800	1,000	1,400

Expenditures	1963-64	1964-65	1965-66	1966-67	1967-68
Conferences	1,200	2,000	3,800	4,400	6,000
Supplies and Materials	200	300	400	700	1,000
Leadership Development	--	--	500	700	1,000
Public Relations	100	100	500	1,000	1,500
National Dues	600	1,000	2,000	2,400	3,100
National Diamond Club	--	--	500**	800	1,000
Enrollment Data					
Number of High Schools	62	76	98	110	118
Grade 11 (Non-Co-op)	--	600	1,000	1,500	2,130
Grade 12 (Non-Co-op)	--	300	650	760	957
Grade 12 (Co-op)	1,240	1,520	1,700	1,850	2,097
Number of P. S. Institutions	8	12	14	20	24
Grade 13	240	360	420	660	932
Grade 14	170	210	330	380	620
Number of Adult (Prep) Program	--	4	6	11	15
Adult (Prep)	--	120	250	400	607
Number of Adult (Suppl.) Programs	21	24	26	31	35
Adult (Suppl.)	4,200	4,800	5,200	6,000	7,205
Number of Teacher Educators	3	3	4	5	6
Number of Teacher Educator Inst.	2	3	3	4	4
Output of Teacher Educators	17	21	19	27	34
Status of D.E. Teachers					
Full-time Secondary	51	56	66	71	75
Part-time Secondary	11	20	33	39	43
Full-time Post Secondary	9	14	17	22	26
Part-time Post Secondary	1	2	2	3	4
Full-time Adult	3	3	5	6	7
Part-time Adult	121	129	138	157	172
Full-time and Part-time Special Needs	--	--	--	--	--
Local Supervisors	3	3	3	3	3
State Supervisors	2	2	3	3	3

*Includes student dues, conference registrations, and business and private contributions
**DECA Diamond Club Started

STATE AND FEDERAL FUNDS AVAILABLE FOR 1968-69

Categories	Under Current Legislation	Under Proposed Legislation
Total Federal Comprehensive Grant	7,000,000	15,000,000
Total State	23,000,000	23,000,000
D. E. (Federal)	150,000	500,000
D. E. (State)	1,200,000	1,200,000
Special Programs Under Proposed Legislation		
*25% of comprehensive state grant for disadvantaged		2,000,000
Special Programs for Special Needs		2,400,000
*Post Secondary		2,000,000
Research		100,000
Innovative Programs and Projects		900,000
Teacher-Education		500,000
Administrative Training Programs		500,000
Cooperative Education		1,200,000
Curriculum Development		420,000

*25% of new comprehensive grant.

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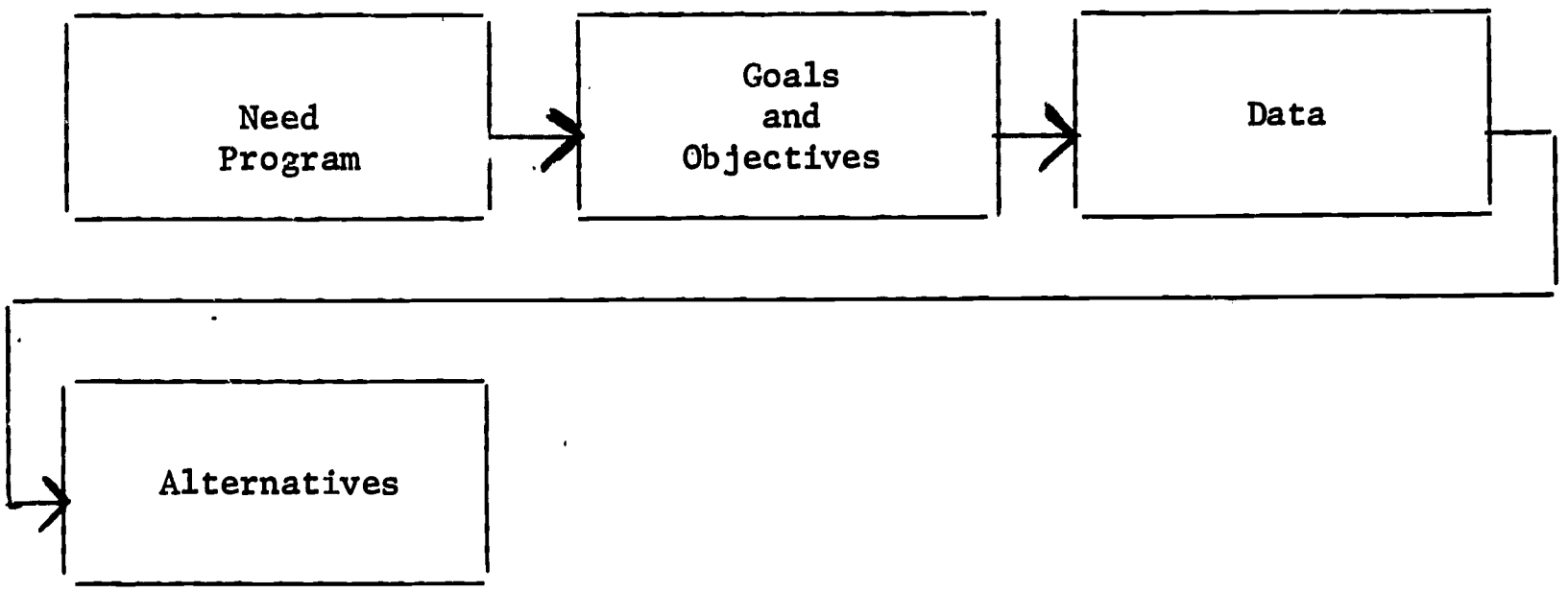
BALANCED PROGRAMS IN DISTRIBUTIVE EDUCATION



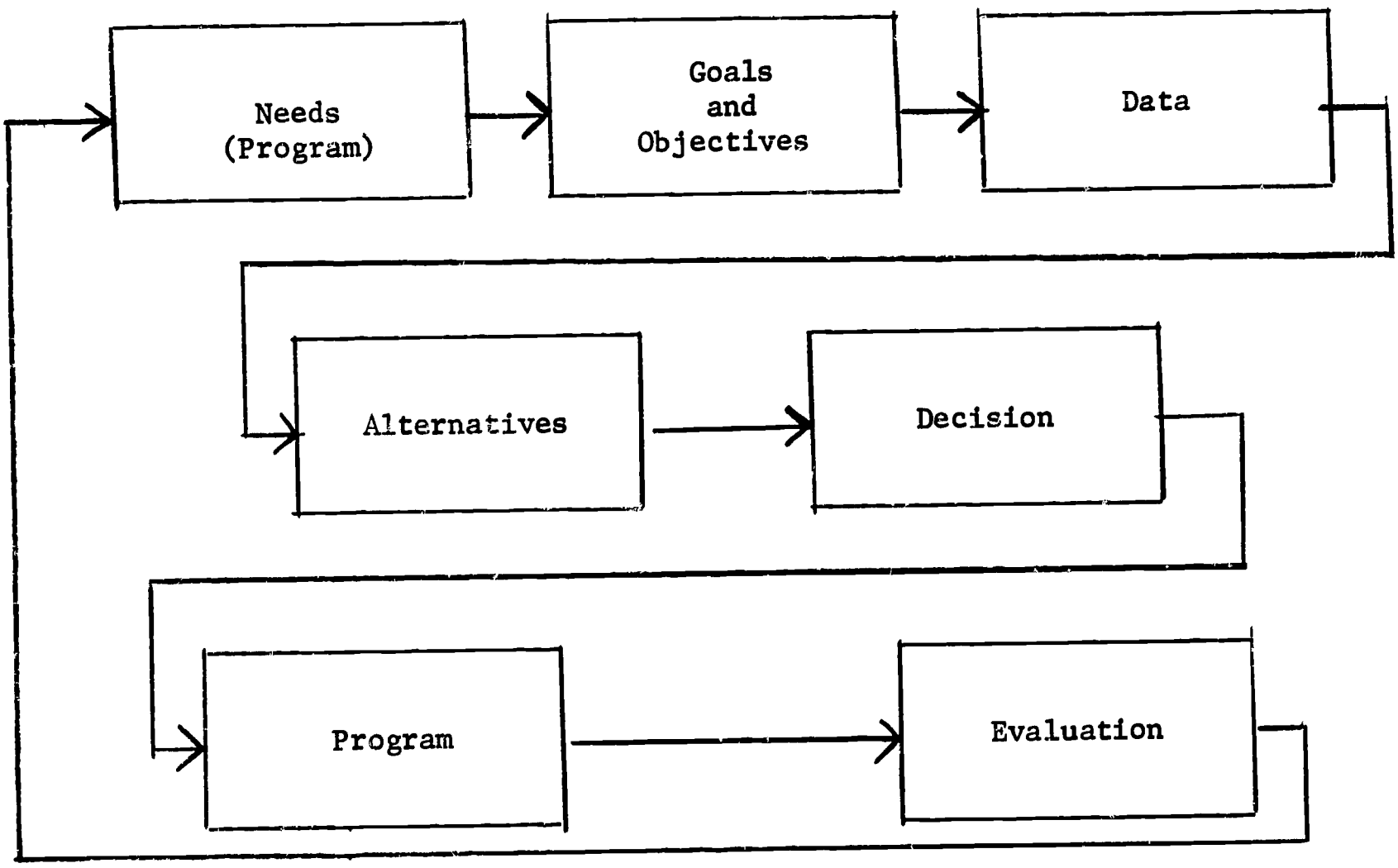
Workshop Problem

PART IV

Mr. Smith is very pleased with the progress being made in our "in-house" PPBS Conference. He is encouraging us to move rapidly in view of current developments in Congress. He is still very excited by the proposed federal legislation and feels that the major emphasis for Transylvania should be on post-secondary vocational-technical education.

However, he is leaving the "door open" in his challenge to us: "using cost-benefit analysis, identify those alternatives which can best attain the above goal or justify another course of action."

WORKSHOP ON PLANNING, IMPLEMENTING AND EVALUATING
BALANCED PROGRAMS IN DISTRIBUTIVE EDUCATION



Workshop Problem

PARTS V, VI, VII

Director Smith is very concerned that we are "ready to move" when the new legislation is passed. To accomplish this, it is his intention to submit a total plan for the Vocational-Technical Division's utilization of these funds to the State Board of Education (also, the State Board for Voc-Tech. Education) on Tuesday, September 3, 1968. Thus, he is directing us to submit to him on Friday, August 9, 1968 our: "Five Year Program for Planning, Implementing, and Evaluating Balanced Programs in Distributive Education."

He is asking us to carry out our planning under the following conditions:

I. Decision

   A. Include pre-high school services and interdisciplinary approaches to voc-tech education.

   B. Proposed DE share under new legislation (additional amounts may be available if properly justified).

1. Disadvantaged - $300,000
2. Special Programs for Special Needs - $400,000
3. Post Secondary - $150,000
4. Research - $15,000
5. Innovative - $180,000
6. Teacher-Education - $75,000
7. Co-op Education - $400,000
8. Curriculum Development - $60,000

C. Using Parts I-IV as background, state the rationale and justification for "The Course of Action."

II. Program

A. What, Where, When, Who, Why, and How

B. Allocate Resources - people, material, time, money, etc.

III. Evaluation - develop the procedure that will be used to determine whether the needs, goals, and objectives have been met.

APPENDIX E

WORKSHOP GROUP ASSIGNMENTS

Group 1

Hall, Homer
Joy, Robert
McLain, Hans
Moncrief, Russell
Sathre, Roger
Simmerman, Jayne

Group 2

Blair, Mildred
Gormley, Ray
Guatney, Charles
McDannel, John
Tapp, Gerald

Group 3

Brensing, Darrell
Burke, Edgar
Demman, Rosamond
Heley, Ray
Talbott, Robert
Ahrens, Robert

Group 4

Carpenter, Leonard
Chambers, Dorothy
Enoch, Lloyd
Fehlau, Martin
Madson, John
Weatherford, J. W.

Group 5

Harrison, Wayne
Johnson, Rulon
Tweten, Leslie
Peterson, Donald
Ricci, Fred

Group 6

Hailes, William
Lind, Ann
McCartney, LeRoy
McDougall, Glen
McNulty, Ed
Setzer, Giles

Group 7

Dorn, Etta
Friedman, Gus
Jaffe, Sydney
Johns, Elden
Martin, Joseph

APPENDIX F

WORKSHOP ON PLANNING, IMPLEMENTING AND EVALUATING BALANCED PROGRAMS IN DISTRIBUTIVE EDUCATION

_____
Date

_____
Name

_____
State

PPBS PRE-TEST*
(Answer and Explain Your Answer)

True or False

_____1. PPBS tends to decentralize decision making.

_____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.

_____3. Total wages of employed vocational graduates should be counted as benefits.

_____4. PPBS will eliminate the need for subjective opinions in decision-making,

_____5. In economic terms, the demand for a commodity refers to the quantity of that commodity which is desired by consumers.

_____6. PPBS is basically a method to save money.

_____7. The average level of benefits and costs are more important than the incremental benefits and costs when evaluating program changes under PPBS.

_____8. Program benefits and costs are usually considered seperately under PPBS.

_____9. Changes in the level of the interest rate cannot reverse the results of benefit-cost analysis.

*Developed by Dr. Joseph H. McGivney, The Center for Research and Leadership Development in Vocational and Technical Education, The Ohio State University.

_____10. The basic approach and method of PPBS to resource allocation decisions is essentially the same as that of the "Scientific Management School."

_____11. PPBS refers to Politics, Priorities, and Budgeting Systems.

_____12. Linear models and regression analysis are more important in budgeting than planning.

Multiple Choice: Choose the answer most nearly correct.

1. Educational data sources are primarily:

_____ (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
_____ (c) establish specific objectives
_____ (d) establish monetary costs

3. A program budget contains:

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

4. A program structure and financial plan usually covers:

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

5. PPBS is primarily concerned with:

_____ (a) obtaining resources
_____ (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)
_____ (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
_____ (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
_____ (d) more than one rate of interest

9. Cost-effectiveness Analysis should include only:

_____ (a) Fixed costs
_____ (b) sunk costs
_____ (c) future costs
_____ (d) variable costs

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

_____ (a) schedule classes
_____ (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

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 subject 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 selected to conduct in regional workshops (Federal USOE Regions)?

APPENDIX G

January 15, 1969

Dear Workshop Participant:

The day of reckoning has come. Five months have passed since the Workshop on Planning, Implementing and Evaluating Balanced Programs in Distributive Education. By now most of you should have some success stories or at least progress reports or project plans to report for inclusion in our follow-up analysis of workshop outcomes.

At this time we are not so much interested in whether in retrospect you rate the workshop as good, bad, or mediocre, rather we need brief relative descriptions of things you have done this year or are definitely planning to do which are either (1) a direct outcome of, or (2) influenced by the summer workshop.

Please prepare a brief report following the enclosed guide for the follow-up report. Your report should reach us by February 10, 1969, in duplicate.

Respectfully,

GARY R. SMITH
Director

GRS:jh

Enclosure

GUIDE FOR FOLLOW-UP REPORT

WORKSHOP ON PLANNING, IMPLEMENTING AND EVALUATING
BALANCED PROGRAMS IN DISTRIBUTIVE EDUCATION

The purpose of this follow-up report is to determine activities or accomplishments since the Workshop on Planning, Implementing and Evaluating Balanced Programs in Distributive Education which illustrate your use of ideas, information, or techniques gained during the workshop. Summary of the responses by workshop participants will be included as part of the final report. Your prompt responses will greatly assist in the evaluation of the workshop and will provide information for future workshops directed toward the improvement for planning programs in all vocational-technical areas.

Please follow the outline as closely as possible. Be brief. If you have products (publications, project reports, and so forth) please send us copies (three of each if possible). Even if you send project reports or products, please be sure you include a brief discussion in your final report as this will make our summary work easier.

1. What projects or activities which were influenced by the workshop have you completed, in progress, or definitely plan to complete to help Supervisors or Teachers in their Distributive Education programs? Use the following outline to report each project:

   Name of the project or activity

   Status of the project (completed, in progress, or planned)

   Influence of workshop (direct outgrowth or indirectly related)

   Brief description of project or activities including your personal estimate of its effectiveness or problems encountered.

2. What projects, activities or program or orginizational changes have you completed, in progress, or definitely plan to complete to improve your State Level Supervisory program and services? Use the outline under Item 1 above to discuss each activity or change.

3. What projects or activities have you completed, in progress, or definitely plan to complete to assist in the strengthening of Pre-service or In-service Teacher Education services in your state or area. Use outline under Item 1 above in responding to this question.

4. In a paragraph or two list or describe specific activities, attitude changes, improved communication, or other signs of change which can be attributed to the summer workshop. You may leave this section blank if you feel you have covered everything in responding to the first three questions.

Please send all follow-up reports, materials, and communications to Gary R. Smith, Distributive Education, Utah State University, Logan, Utah 84321.

APPENDIX H

SOME CONSIDERATIONS FOR SYSTEMATIC PROGRAM PLANNING

1. NEED (Problems)
   Identify - Define - Specify:

   Survey & Analysis
   Population Trends
   Occupational Changes
   Technological Changes
   Societal Needs
   Characteristics, Population Served
   Employment Opportunities

2. GOALS & OBJECTIVES

   Broad & Specific
   Measurable
   Long & Short Range
   Projected
   Time - Complexity - Prediction
   Behavioral Change

3. DATA

   Source - Pertinent - Valid
   Factual - Assumptions
   Projections
   Quantitative & Qualitative
   Analysis & Interpretation
   Presentation

4. ALTERNATIVES

   Courses of Action
   Feasible
   Impact
   Weighted
   Costs: People, Material,
   Time, Money
   Prediction

5. DECISION

   Rationale & Justification
   The Course of Action

6. PROGRAM
   What, Where, When, Who
   Why, How:

   Plan, Responsibility,
   Flexibility, People, Material,
   Time, Money

   Occupational Categories
   Educational Levels
   Geographical Locations
   Educational Subdivisions
   Ancillary Services
   Non-Educational Services

7. EVALUATION

   Concept - Process - Products
   Total Program: Courses, Teacher, Student
   Methodology, Facilities
   Analysis, Interpretation & Impact
   Quantitative & Qualitative Data
   Objectives Achieved
   Desired Change
   Required Change
   New Directions & Emphasis
   Continuous - Planned

APPENDIX I

TERMINOLOGY

MISSION: Imposed by legislation or other means. It describes the organization's reasons for existence, its general functions, and the limits of its jurisdiction.

GOALS: Established by the organization's leaders. They are the long-range accomplishments towards which programs are directed in fulfillment of the mission. They do not set time limits.

OBJECTIVES: Established by the organization's leaders. They describe the outcomes to be accomplished within specified time limits in fulfilling the mission and goals. They are measurable.

There is a progression from the broad terms of the Mission, through the more detailed description of intent contained in the Goals, to the specifics of <u>what</u> is to be accomplished and <u>when</u> it is to be accomplished described by the Objectives.

PROCEDURE FOR FORMULATING OBJECTIVES

1. Formulate a GOAL.	A Goal describes <u>what</u> is to be done. It ignores the question of <u>how</u> it will be done.
2. Identify the ULTIMATE PRODUCT.	This is the Objective, the Outcome expected if the Goal is accomplished. It states <u>what</u> will exist and the <u>time span</u>, and thus is measurable.
3. Consider PROCESSes.	This is the means by which we close the gap between the Ultimate Product and what now exists. Not until this step do we consider <u>how</u>.
4. Identify INTERIM PRODUCTS.	These are sub-objectives, checkpoints. They are the outcome of each step in the selected process. They specify both Product and time and thus are measurable.

SPECIFYING OBJECTIVES AS MEASURABLE OUTCOMES

Why do we need measurable objectives?

1. So we can tell with precision when an objective is reached.

2. So we can identify areas of potential failure in time to make corrections.

3. So we can identify what is needed -- the deficiency between products desired and products that already exist.

4. So we can accumulate data on what works or does not work and on how well it succeeds.

How will measurable objectives help you?

1. They give you the ability to evaluate on the basis of facts:

   (a) On-going evaluation, via the Interim Products, for early identification of potential weakness;

   (b) Final evaluation, based on the Ultimate Product, in which success is measured in terms that have been clear from the beginning and which are not subject to the whims of interpretation.

2. They permit realistic identification of outcomes, thus providing:

   (a) An easier answer to the question, "What must we add to existing resources if we are to attain this objective?"

   (b) Realistic allocation of priorities and funds.

What other benefits can be expected?

1. Facts, rather than opinions, for determining policy and setting future objectives -- very important when one is innovating.

2. Channeling of effort and creativity into relevant activities.

APPENDIX J

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