The Program Planning Budgeting Systems (PPBS) approach to decision-making has been adopted by government agencies and many colleges, universities and local school systems. As a result, the quantity of literature has increased phenomenally. This bibliography is intended to assist students, researchers, and practitioners in identifying references in specific areas of PPBS. A total of 1,051 citations, ranging in date from 1936 to 1969 but emphasizing the 1963 to 1969 period, present sources in categories of systems theory, planning and control systems, planning process, program budgeting, programing and management control, investment alternatives, analysis of alternatives, education and economics, basic data for PPBS, statistical analysis in PPBS, limitations of PPBS, and bibliographies. Entries are arranged alphabetically according to author, and each of the above categories is subdivided into educational and general categories. An author index is included. Volumes I through III are available as ED 032 417, ED 032 418, and ED 035 756 respectively. (CH)
The Center for Vocational and Technical Education has been established as an independent unit on The Ohio State University campus with a grant from the Division of Comprehensive and Vocational Education Research, U. S. Office of Education. It serves a catalytic role in establishing consortia to focus on relevant problems in vocational and technical education. The Center is comprehensive in its commitment and responsibility, multidisciplinary in its approach, and interinstitutional in its program.

The major objectives of The Center follow:

1. To provide continuing reappraisal of the role and function of vocational and technical education in our democratic society;

2. To stimulate and strengthen state, regional, and national programs of applied research and development directed toward the solution of pressing problems in vocational and technical education;

3. To encourage the development of research to improve vocational and technical education in institutions of higher education and other appropriate settings;

4. To conduct research studies directed toward the development of new knowledge and new applications of existing knowledge in vocational and technical education;

5. To upgrade vocational education leadership (state supervisors, teacher educators, research specialists, and others) through an advanced study and inservice education program;

6. To provide a national information retrieval, storage, and dissemination system for vocational and technical education linked with the Educational Resources Information Center located in the U. S. Office of Education.
The work presented or reported herein was performed pursuant to a Grant from the U.S. Office of Education, Department of Health, Education, and Welfare. However, the opinions expressed herein do not necessarily reflect the position or policy of the U.S. Office of Education, and no official endorsement by the U.S. Office of Education should be inferred.
One of the major commitments of The Center for Research and Leadership Development in Vocational and Technical Education is state leadership development and training. In 1967, The Center sponsored a national conference on state leadership which is reported in *The Emerging Role of State Education Departments with Specific Implications for Divisions of Vocational-Technical Education*. One of several important outgrowths of this conference was the recognition of a greater need for rational systems for planning, programming and budgeting state educational needs.

The Vocational Education Amendments of 1968 further reinforce this concept and require states to submit state educational plans for five years. Such requirements necessitate long-range planning, development and program evaluation by states. In recent years, considerable emphasis has been placed on economic models for planning a variety of programs, including education. Planning-Programming-Budgeting Systems (PPBS) have received new eminence and are being implemented in a variety of settings. It appears that the concepts underlying PPBS will exert an even greater influence in decisions concerning vocational and technical education in the future.

In October of 1968, The Center sponsored a two-week institute on planning-programming-budgeting systems for state level personnel in vocational and technical education. Four volumes of leadership training materials on the applications of planning-programming-budgeting systems to vocational and technical education were prepared. Volume I constitutes the basis for a training program in PPBS. It outlines the parameters of PPBS and, more importantly, explores the interrelationships of the concepts and techniques undergirding the system. Supplementing this basic volume are three additional volumes which complete the total training package. Volume II presents a simulated case problem to which the concepts delineated in Volume I can be applied. Volume III contains annotations of selected references which aid the process of understanding and applying PPBS. Volume IV is a research bibliography containing a comprehensive listing of PPBS references.

We hope that this research bibliography will be of use to personnel at all levels in vocational and technical education systems. The Center is grateful to many individuals and groups
who contributed to the development of these instructional materials and bibliographies. Special recognition is due William C. Nelson, research associate at The Center, for his development of this bibliography.

Robert E. Taylor
Director
The Center for Vocational and Technical Education
INTRODUCTION

The Planning-Programming-Budgeting Systems (PPBS) approach to governmental decision-making has been adopted by the federal government and several state, city, local government units in recent years. In addition, many colleges, universities, and local school systems have or are in the process of employing PPBS techniques.

Since the arrival of PPBS to government agencies, the quantity of literature on PPBS has increased at a phenomenal rate. The purpose of this bibliography is to assist students, researchers, and practitioners of PPBS in identifying references in specific areas of PPBS. It is hoped that the use of this bibliography can significantly reduce the time spent in literature searches by students of PPBS and can provide practitioners with material which may not yet have attracted their attention.

This bibliography was compiled during the process of co-authoring three publications with Joseph H. McGivney. They are:


The references in this bibliography are classified under similar headings as in PPBS for Educators, Volumes I and III. In addition, the references within each major topic are subdivided into those pertaining to education and those pertaining to general PPBS applications. The last section, bibliographies, is not subdivided into education and general. All references are listed alphabetically within each subdivision or division.
Thanks are due to Joseph H. McGivney for his leadership in the initiation of this effort and for his substantial contributions to the bibliography. However, the responsibility for all errors, omissions and incorrect classifications remain with the compiler alone.

William C. Nelson
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FOR EDUCATORS,
VOLUME IV: A RESEARCH BIBLIOGRAPHY
OVERVIEW OF PPBS

EDUCATION


GENERAL


systems theory

education


GENERAL


132. Fort, Donald M., Systems Analysis as an Aid in Air Transportation Planning, Santa Monica, California, Rand Corporation, 1966.


PLANNING AND CONTROL SYSTEMS

EDUCATION


GENERAL


199. Blaug, Mark; Peston, Maurice; and Ziderman, Adrian, The Utilization of Educated Manpower in Industry, Toronto, Canada, University of Toronto Press, 1967.


204. Byer, R. J.; Hardy, R. W.; Lynch, E. J.; Morse, R. A., Jr.; Pulscak, M. W.; and Spitzer, M., "The CAPRI System for Naval Manpower Planning and Control," Design and


207. Cook, Desmond L., Better Project Planning and Control Through the Use of System Analysis and Management Techniques, Burlingame, California, OPERATION PEP, 1968.


229. Miner, J. B., *Intelligence in the United States: A Survey with Conclusions for Manpower Utilization in Education and*


234. OPERATION PEP Staff, 1967 Symposium, Burlingame, California, 1967.


GENERAL


PROGRAM BUDGETING

EDUCATION


293. Swanson, P. J., Jr., "Programmed Budgeting for a College of Business Administration," Ann Arbor, Michigan, University Microfilms, 1966.


GENERAL


EDUCATION


**GENERAL**


382. Matz, Adolph; Curry, Otherl; and Frank, George, Cost Accounting, Cincinnati, Ohio, Southwestern Publishing Company, 1957.


INVESTMENT ALTERNATIVES

EDUCATION


PEP Training Program, Burlingame, California, OPERATION PEP, 1967.


459. Miller, Donald R., Design Considerations for the Instructional Program of Operation PEP, Burlingame, California, OPERATION PEP, 1967.


467. Operation PEP, Considerations in Developing a Hierarchy of Educational Objectives, Burlingame, California, 1968.


GENERAL


ANALYSIS OF ALTERNATIVES

EDUCATION


534. Duncan, Merlin George, Instructional Unit Costs in Selected Central America Universities, East Lansing, Michigan, Michigan State University, 1964.


GENERAL

590. Aharoni, Yair, The Foreign Investment Decision Process, Boston, Massachusetts, Graduate School of Business Administration, Harvard University, 1966.


594. Bain, James, System Decision-Making, Columbus, Ohio, Ohio State University, Research Foundation, 1968.


597. Bell, Chauncey F., Cost-Effectiveness Analysis as a Management Tool, Santa Monica, California, Rand Corporation, 1964.


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<tr>
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<th>Reference</th>
</tr>
</thead>
</table>


794. Hartley, Harry J., Criteria for Selection of Economics Content in Educational Administration Preparation Programs, Columbus, Ohio, Ohio State University, 1967.


797. Hoenack, S. A., Private Demand for Higher Education in California, Berkeley, California, University of California, 1968.


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</table>


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**GENERAL**


LIMITATIONS OF PPBS

EDUCATION


954. Lovenstein, Meno, Economics and the Educational Administrator, Columbus, Ohio, College of Education, Ohio State University, 1958.


**GENERAL**


BIBLIOGRAPHIES


1026. Eidell, T. L. and Piele, P., A Bibliography of Selected Documents on Planning, Programming, Budgeting Systems,
Eugene, Oregon, University of Oregon, ERIC Clearinghouse on Educational Administration, 1968.

1027. Finn, J. D., et al., A Selective Bibliography of New Media and Instructional Technology, Los Angeles, California, University of Southern California, 1964.


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