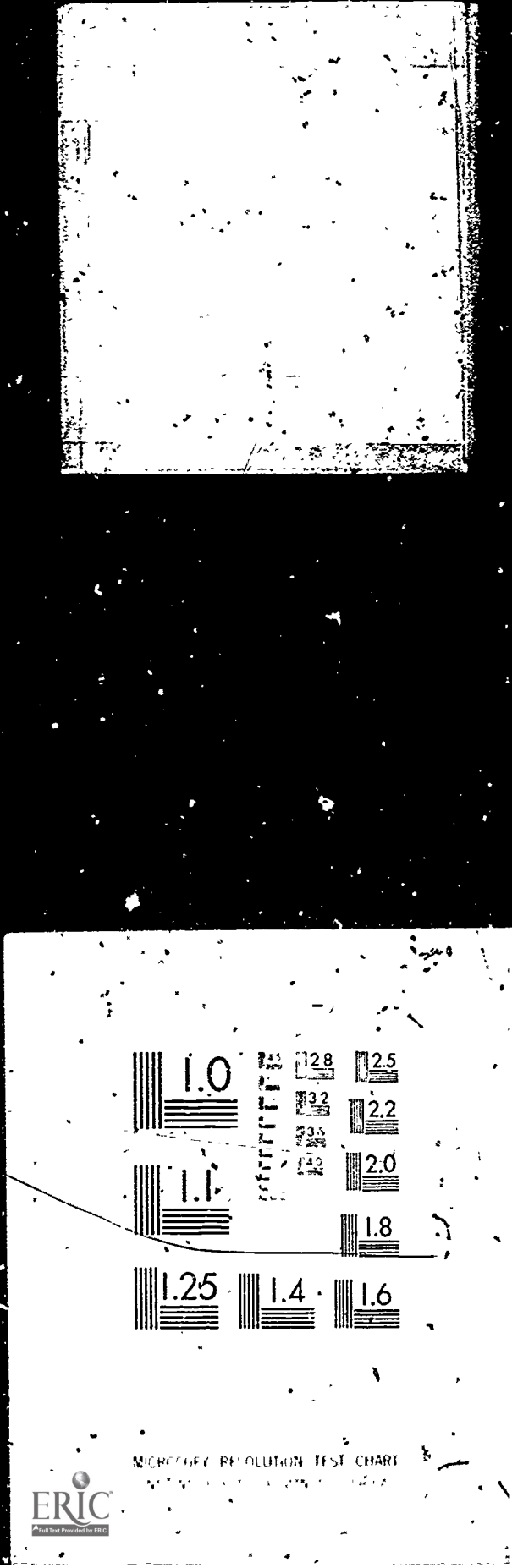

1.0
1.1
1.25
1.4
1.6
1.8
2.0
2.2
2.5
2.8
3.2
3.6
4.0
MICROCOPY RESOLUTION TEST CHART

DOCUMENT RESUME

ED 106 937 EA 007 130

AUTHOR Leggett, Stanton
TITLE Processes of Planning. Spaces for Career Preparation: Document 2.
INSTITUTION Michigan State Univ., East Lansing. Continuing Education Service.
SPONS AGENCY Michigan State Dept. of Education, Lansing. Vocational Education and Career Development Service.
PUB DATE [73]
NOTE 27p.; A Michigan Career Education Facilities Project; Related documents are ED 084 665-667 and EA 007 131
AVAILABLE FROM Council of Educational Facility Planners, International, 29 West Woodruff Avenue, Columbus, Ohio 43210 ($4.00)

EDRS PRICE MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS *Career Education; Educational Objectives; *Facility Planning; Futures (of Society); Manpower Needs; *Program Planning; School Community Cooperation; School Schedules; Secondary Education; Social Change; Space Classification

ABSTRACT

This document incorporates the findings of a project initiated to find solutions to the problems of planning, designing, constructing, and utilizing facilities to house career education. The first section in part reproduces scenarios forecasting experts' consensus of views about technological change by the years 1985, 2000, and 2025. Facilities for occupational training cannot exist independently of the educational program; an annotated outline of a career preparation plan illustrates the steps to take and the kinds of actions required to get a program operational in a community. The final section, planning career preparation facilities, considers calculating student time, defining the space necessary, describing the spaces requiring new construction or remodeling of existing spaces, obtaining community support, and the selection and duties of the planning team. (Author/MLF)

ED106937

Author STANTON LEGGETT is President of Stanton Leggett and Associates, educational consultants of Chicago, Illinois. Dr. Leggett is a graduate of Columbia University and has served nationally and internationally as an educational consultant since 1947 on a wide variety of school and college problems.

Additional copies of this publication or others in the series of documents on Spaces for Career Preparation, may be obtained from:

Council of Educational Facility Planners, Int'l.
29 West Woodruff Avenue
Columbus, Ohio 43210

$4.00

[1973]

ACKNOWLEDGMENTS

In January of 1972, The Continuing Education Service, Michigan State University, initiated a research project to become known as the Michigan Career Education Facilities Project. Funding for the Project was made available by the Vocational Education and Career Development Service, Department of Education, State of Michigan.

The relative newness of the Career Education Movement and the recognized need for planning, designing, constructing and utilizing facilities to house Career Education on the part of the educational administrators, facility planners and designers was evident. Traditional solutions, continually increasing costs and the need for greater emphasis on the learning environment prompted the State Educational Agency to give maximum attention to the options for local determination with minimum emphasis on regulating procedures. Hopefully, they will find this series of documents viable tools in their efforts.

The Committee on Architecture for Education, American Institute of Architects, reviewed the Project in its early stage and designated Les Tincknell of Wigen, Tincknell and Associates, Inc., Saginaw, Michigan, as its representative and liaison to the project.

C. Theodore Larson, Professor Emeritus, School of Architecture and Design, University of Michigan, was designated as an architect-educator advisor to the project.

A *first* step resulted in the designation of an Advisory Committee to assist in the development and evaluation of the project. Members included:

William Chase, Program Officer
U.S. Office of Education
National Center for
Educational Technology
Washington, D.C.

Richard Featherstone, Professor
Administration and Higher Education
College of Education
Michigan State University
East Lansing, Michigan

Dwayne Gardner, Executive Director
Council of Educational Facility
Planners, International
Columbus, Ohio

Ben Graves, Project Director
Educational Facilities Laboratories, Inc.
Chicago, Illinois

Milton Miller, Director
Educational Facilities Planning
Grand Rapids Board of Education
Grand Rapids, Michigan

Donald Leu, Dean
School of Education
San Jose State College
San Jose, California

The *second* step involved the appointment of an architectural-planning team whose primary responsibility was to study the recognized needs and propose options for solving local career

facility problems. The team included:

William E. Blurock
William Blurock and Partners
Corona Del Mar, California

C. William Brubaker
Perkins & Will Architects, Inc.
Chicago, Illinois

Stan Leggett
Stanton Leggett and Associates, Inc.
Chicago, Illinois

Linn Smith
Linn Smith, Demiene, Adams, Inc.
Birmingham, Michigan

Peter Tarapata
Tarapata-MacMahon-Paulsen Corporation
Bloomfield Hills, Michigan

The *third* and *final* step in the Project involved the final editing, publication and dissemination of the project findings. This is one of a series of five publications to be released to educators, planners and architects. The series include:

Document 1 Objectives and Options by William E. Blurock
Document 2 The Process of Planning by Stanton Leggett
Document 3 Facility Options by G. William Brubaker
Document 4 Planning for Change by Peter Tarapata
Document 5 Construction Options by Linn Smith

Special acknowledgment is due Robert Pangman, State of Michigan, Department of Education, for his assistance and guidance throughout this project; to William Weisgerber, State of Michigan, Department of Education, and to Casmer Heilman, College of Education, Michigan State University, for their assistance in critiquing and editing these documents; to the Michigan Middle Cities Education Association for their review and critique of the five documents; and to the Council of Educational Facility Planners, International for the printing and dissemination of the publications.

Project Co-Directors:

Floyd G. Parker, Director
Program and Staff Development
The Continuing Education Service
Michigan State University

Robert Paullin
Occupational Specialist
Division of Vocational Education
Department of Education
State of Michigan

"Career education is the total effort of the community to develop a personally satisfying succession of opportunities for service through work, paid or unpaid, extending throughout life." (1)

SETTING FOR PLANNING

The documents of which this forms a part are focused on how to plan facilities for career education.

It is as though you had asked us, "What do I do to provide good, effective facilities for career education in my community?", and we had answered, "It is a little hard to answer that question simply and directly."

So you said to us, patiently, "All I want to do is to add some shop courses to the high school so that kids coming out of school will be better able to get jobs," or "All we need is a good area vocational center." And we still say things are not that simple, and fuss about, and duck questions, and look not so wise.

Because what we would like to do is not hand you a recipe, but join you in thinking about the problem, so that your ultimate answer will be better and will use all the sophisticated knowledge that is available. Putting together your experience, and what we know, and the resources of a sympathetic and stimulating bureaucracy, we may get a synergistic effect. This is an effete word meaning that the whole is greater than the sum of its parts—which sounds silly, but is true. So use it.

(1) Hoyt, K.B.; Evans, R.N.; Mackin, E.F., and Mangum, G.L., "Career Education—What It Is and How To Do It," Olympus Publishing Company, Salt Lake City, Utah, 1972, p.1.

PLANNING AS A STRATEGY OF THINKING

There are nice, clean, linear ways of thinking about planning facilities for vocational and technical education. These are sometimes called systems thinking, or management by objectives. Usually the kind of sequence of events anticipated is as follows:

- Set Objectives
- Assess Needs
- Develop Alternatives
- Test Effectiveness of Alternatives
- Institute Program
- Evaluate Program
- Modify Program
- Recycle

Clean, neat, improbable, efficient (if the assumptions are reliable—and regrettably even when the assumptions are unreliable) yet somehow a kind of logical structure that one keeps hoping will work. Remember that Robert McNamara was a great exponent of the systems approach. The Pentagon has had some fascinating overruns, interesting disasters, and Mr. McNamara ended up questioning the assumptions.

There are also fuzzier, non-linear systems, in which the planners—you and your colleagues—use a kind of spiral thinking in which you attempt consciously to broaden the spectrum of choices that you have to deal with, so that if you do take the ordinary route to where you finally decide you want to go, it is because you chose that route, not because you didn't know other routes existed. In such a system you circle around the topic, make tentative forays into the issues, pull back, try another tack, and finally, having satisfied yourselves that you have an adequate base, you are ready to try, tentatively, a more linear attack. The trick lies in avoiding emotional commitment to your own plan, savoring a quality of skepticism, and continually going back to the beginning to check the assumptions.

The strategy proposed here leans to the non-linear, and agrees that all planning is a continuous process.

FOR WHAT WORLD ARE WE TRAINING?

If an average client of one secondary vocational-technical program is 18 years old in 1973, he or she will be 45 years old in the year 2000—actually in the prime of a work career. Will today's skills fit tomorrow's world?

One way to react to the question is to say "No, but we shall retrain people for new jobs." Another approach is to attempt to anticipate some of the changes and to include, consciously, in the training program, some specific education for change and some experience in change. Good planning for vocational education will result in instruction in which those elements of skills that are gauged transferable in time are identified and emphasized, and students are systematically expected to deal with change and with the unknown.

There is a variety of ways of looking into the future. One example, excerpted here, has been developed by the Institute for the Future in California, and has been reproduced in part here merely to indicate the kind of thinking that may be necessary in adapting programs to the future. This material is a series of scenarios forecasting, through the Delphi technique, experts' consensus of views about technological change by the years 1985, 2000, and 2025. Remember that our 18-year-old in 1973 will be 45 in the year 2000, and many will live to see 2025, at the then young age of 70.

EXCERPTS FROM FORECASTS OF SOME TECHNOLOGICAL AND SCIENTIFIC DEVELOPMENTS AND THEIR SOCIETAL CONSEQUENCES*

The Technological World of 1985

Solution of the foreign-body rejection problem will have greatly improved the process of organ transplantation, and to meet the need for natural transplantable organs, "parts" banks will be operating. Competition for organs will have encouraged black markets, although the importance of these markets will have been diminished by legislative regulation of transplantations within the hospital-physician community and by the development of artificial organs, including, for example, implantable artificial hearts with power sources capable of lasting five years. Research will be continuing into the use of tissue-compatible animals to provide yet another source of organs. This activity will have changed the emphasis in medicine from repair to replacement, a development accompanied by the rise of new industries, technologies, and classes of medical personnel.

Several other biological technologies will have significantly affected the world of 1985. Contraceptive drugs will have been developed which will lower fertility rates, being mass-administered as aerosols or as additions to water supplies or staples (as iodine is added to table salt). Societal acceptance of this practice will result from extensive public education about the consequences of overpopulation. But this development will have led to the possibility of a new form of warfare: surreptitious contraception. Research and development projects will have been implemented to create an anticontraceptive pill and detection system. The drug will form only one more addition to the arsenal of biological and chemical weapons.

There will have been an enormous increase in information-handling machines and in the complexities and pervasiveness of their operations. The importance of skilled programmers will have been enhanced. Central data storage facilities with wide public access will have been established and will provide library, medical, and legal data. Privacy will have been challenged by the large data banks, and new methods of computer-aided crime will have come on the scene. New computer and automation uses will include automated language translation capable of coping with idiomatic syntactical complexities and sophisticated teaching machines will utilize adaptive programs responding not only to the students' answers but also to certain physiological responses, such as extreme tensions.

*"Forecasts of Some Technological and Scientific Developments and Their Societal Consequences" by Theodor J. Gordon and Robert H. Ament (1969): The Institute for the Future, 2740 Sand Hill Road, Menlo Park, California 94025. pp. 11-47.

Perhaps most startling will be new opportunities and innovations in human reproduction. Non-surgical techniques permitting the choice of the sex of offspring (with 90% certainty) will have been demonstrated, and chromosome typing will be used to discover human abnormalities within weeks of conception. There will be concern about the very detrimental effects of fads for sexes, and regulation of the sex ratio may take the form of legislation or financial incentives to those parents who help to maintain a socially desirable sex equilibrium.

Immunizing agents will have been developed to protect against most bacterial and viral diseases. Inexpensive non-narcotic drugs for producing specific personality changes, such as euphoria, anti-aggression, and increased attention, will be available to the public, and these will have led to improvements in mental therapy, education, and criminal control.

A primitive form of artifical life will have been created and protein usable for food will have been produced, spawning new industries and offering the hopeful prospect of specialized diet additives for protein-deficient populations. Conventional agriculture will be augmented by the advent of large-scale desalination plants which may, through their methods of distribution, be instruments of international power politics.

Various high-speed transportation systems—such as VTOL-STOL, 200 mph trains, ground-effects machines—will be in wide use, but air traffic control problems and transit congestion in major urban city centers will still exist. Automobile engines, fuels, and accessories will have been produced which permit operation of vehicles without harmful exhaust. While these devices will have eased the problems of air pollution, traffic congestion will still be with us.

A manned space station of relatively long duration will be orbiting the earth. It will have brought advances in meteorology, cartography, geology, resources mapping, astronomy, geophysics, and military intelligence. Satellite-derived weather forecasting will allow regular and reliable forecasts fourteen days in advance for areas as small as 100 square miles.

The Technological World of 2000

Between 1985 and 2000, biological research and development will have led to many results, including the development of new methods of behavior control, new reproductive techniques, and advances in medical technology. Apparently the threat of starvation will have lent impetus to the development of several new food-producing techniques. There is some fear that these techniques will offer only a short-term reprieve in the onset of world starvation, that the catastophy (sic) of large-scale starvation will yet occur, since these advances will remove some incentives to the limiting of family size. To minimize this threat, some governments will have enacted legislation designed to limit family size; others may have used or encouraged the use of anti-fertility drugs. World food production will have been expanded through the development of techniques which bring fifty percent more arable acreage under cultivation. Microbial systems converting petroleum to protein will contribute significantly to world food supplies, and ocean fish farming and aquaculture will also be in extensive use. Population pressures will demand all the food the world can produce.

New methods of behavior control which stem from biological research will have included (1) the development and use of LSD-like drugs to heighten perception and learning speed of retardates, (2) knowledge of how to stimulate cognitive growth to a maximum ability in preschool children, (3) brain surgery or psychochemicals for modifying the behavior of criminals, and (4) radio stimulation of the brain of some people in society. These forms of control will have been accompanied by breakthroughs concerning our understanding of human behavior and motivation, including knowledge of the significance of dreams and REM (rapid-eye-movement) sleep in human cognitive development.

New reproductive techniques will also have been developed by 2000. For example, human ova will have been fertilized *in vitro* with subsequent implantation into a surrogate mother. The therapeutic uses of this technique will have allowed some mothers to bear children without their former

fear of undesirable gene combinations resulting. Human beings will have been successfully cloned, and the technique will be used routinely for the breeding of other animals, especially in cattle farming.

The nations of the world will be using the oceans not only as a major source of food, as mentioned earlier, but also as a source of minerals through mining of the ocean floor. This may have led to extension of national sovereignties farther into the oceans and "claim staking" with concomitant political tensions. International treaties, modeled after the 1959 Antarcitica Treaty, will probably have been used to permit more orderly exploitation of the oceans.

An essential feature of man's growing control over his environment will be the relative ease with which he can create ecological judgment as well. This new conscience will lead finally to very strong pressure to control the most threatening of all ecological problems: population expansion in the presence of inadequate food. Legislation, tax incentives, propaganda, and sterilization, as well as abortions in certain cases, will be in intensive use. Many aspects of scientific and technological development will be directed toward coping with problems which stem from the world's increasing population levels. For example, waste disposal will have become even more of a problem by the year 2000, necessitating innovations in the use of self-destroying material. Equally important will be the institution of new types of legislation and incentives which encourage the avoidance of pollution and the creation of a favorable environment.

Several other breakthroughs in physical technologies will have occurred between 1985 and 2000. Complex programmable and self-adaptive robots capable of performing many chores will have found use in the households of advanced countries. With such devices available, discretionary time will also have increased and with it the demand for educational and recreational services. Computers will have been built which comprehend standard IQ tests and score above 150. On-the-spot communication will be increasingly available to the citizens of most advanced countries; individual portable two-way communication devices will be in use, much to the consternation of teenagers required to "call in" on dates and to regulatory authorities required to allocate and control frequencies.

A permanent base will have been established on the moon. Its life support systems will be capable of sustaining ten men indefinitely. This base will provide the earth's most important radio and astronomical observatory. A radio observatory designed primarily to search for extra-terrestrial life will have been constructed. Planetary exploration, primarily unmanned, will be continuing.

The Technological World of 2025

The biological research begun in the last decades of the 20th century will have continued into the 21st, yielding new techniques of control and understanding of human development and behavior. A range of new human reproductive techniques will exist, including extra-uterine development (as a result of the successful simulation of the placenta) and parthenogenesis. Of course, the choice of sex of one's offspring and human cloning, both demonstrated earlier, will have come into wider use. All of these techniques will have raised serious threats to conventional family structuring and many other social institutions which we currently take for granted.

Of particular importance to biomedicine early in the next century will be the capability of modifying genes through molecular engineering to overcome some human hereditary defects. This development will have stemmed from better understanding of the process of differentiation and development and will provide the ability to control certain human phenotypes. Furthermore, skill in genetic engineering and deeper understanding of the genetic processes may have provided the capability to repair the central nervous system through regeneration of individual neurons; perhaps it will have been possible also to stimulate the growth of new organs and limbs in human beings.

This development will probably lead to intense discussion about which diseases should or should not be controlled. The arguments may involve the possibility of producing

specialized classes, such as menials and supermen, and will probably consider the danger that a division between socio-economic classes and, perhaps, between developed and less-developed nations will grow, depending on who has the technological capability and required financing to construct molecular engineering centers. Of course, the application of these techniques to food production will have proven beneficial to the world. The spectacular genetic breakthroughs expected earlier will have been matched by our growning control over the aging process; life expectancy at birth may have been extended chemically by fifty years, with a commensurate increase in vigor. New drugs will also have been used for raising the intelligence of some human beings and for the purposes of producing specific changes in personal characteristics, such as alterations in attitudes and life styles. This new capability of determining the effects of drugs will have resulted from the development of a theoretical pharmacologogical discipline and, thus, the prior analytic prediction of the medical effects of drugs.

The impact of these kinds of changes on social structure will have been immense. Some of the developments might be used to reward special groups, such as high-ranking officials. Scientists might organize to prevent these capabilities from being used adversely. Less-developed nations might demand being made part of the technological present.

In the first part of the 21st Century, research into the means of directly stimulating the cortex may have led to demonstration of a man-machine symbiosis in which certain men (perhaps with implanted electrodes or other, less repugnant devices) extend their intelligence by being connected to a computer. This development might have the effect of multiplying human intelligence manyfold.

Significant amounts of electrical power will have been transmitted by wireless means; superconductors operating in the range of 20-30K, or even room temperature, will have been demonstrated. Use of these new materials and processes will have resulted in the development of new families of vehicles and devices; room-temperature superconductors, for example, could be used to make cars which float over magnetic highways. These techniques will permit cheaper electricity to be produced and, with it, the development of new techniques for refrigeration; communication, and transportation, amounting to a new dimension of control by man over his world. It is possible that research into the composition of matter will lead to ability to produce any element from subatomic particles. If such a capability should be attained, rare earth elements could be produced in whatever quantities needed, and alloys and materials virtually unknown today would come into wide use.

THE THIRD INDUSTRIAL REVOLUTION

Lewis Yoho, Dean of the College of Technology at Indiana State University, pointed out to me that we are now entering a third major industrial or technological revolution. The first industrial revolution harnessed energy to substitute for human energy in the accomplishment of tasks. The second industrial revolution, characterized by Frederick Winslow Taylor's work in "scientific management," essentially harnessed man to machines in order to increase the efficiency of the use of machines. The third industrial or technological revolution will free man finally as work becomes a factor that contributes increasingly to the psychological well-being of its participants.

A study by the Department of Health, Education, and Welfare entitled "Work In America"*, contains the following types of conclusions:

"Because work is central to the lives of so many Americans, either the absence of work or employment in meaningless work is creating an increasingly intolerable situation. The human costs of this state of affairs are manifested in worker alienation, alcoholism, drug addiction and other symptoms of poor mental health . . . A great part of the staggering national bill in the areas of

*Report of Special Task Force to the Secretary of Health, Education and Welfare. Prepared under the auspices of the W. E. Upjohn Institute for Employment Research: MIT Press, Cambridge, Massachusetts 1973.

crime and delinquency, mental and physical health, manpower and welfare are generated in our national policies and attitudes toward work."

The reports points out that many jobs provide the worker with a—

". . . narrow routinized task; where recent high school and college graduates end up in jobs that make little use of their training; where skills rapidly become dated; where a whole range of psychological satisfactions has become at least as important to the worker as monetary rewards."

Perhaps one of the more interesting observations was that the "strongest predictor of longevity was work satisfaction."

Another index of the importance of the worker's response to his job is found in a recent report of a Gallup poll of job satisfaction among young people.

"One-third of all the young people in the 18-29 age-bracket, working in the U.S.A., don't like their jobs.

The authority for that statement is polister George Gallup, Jr.

At a recent seminar of the American Management Association, Gallup pointed out that fully 70 percent of young workers believe they are not producing in full capacity, that much of their work is not meaningful, that there are increasingly dissatisfied with five-day work weeks, and that they don't cotton to life in urban, industrial areas.

As a result, many of them frankly admit that they loaf on jobs which provide them money but no satisfaction."

—CHICAGO SUN-TIMES
October 22, 1972

The educational program in vocations and technology cannot ignore the messages that are coming out of industry as to the importance of satisfaction on the job. One of the results is conscious "job redesign" in which a worker (or a student) sees the whole picture of the product, performs a variety of tasks, shares in decision-making and in the profits that are derived from extra effort. The educational program, too, can benefit from this kind of approach, as exemplified by the technology simulations developed at Indiana State University, and as described in the Brubaker book in this series (Document 3: "Facility Options").

KNOW YOUR OWN BIASES

No group of people in any walk of life is more strongly programmed than people in education. Teachers and school administrators are brought up in the educational system from earliest grades through graduate school. They go back into the system to work, often with a real commitment to helping their fellow men (and beware the True Believer!). School people's emotional and psychological well-being, as well as economic success, are bound up with success in the educational system. These are no boat rockers. They are us.

When you get ready to plan in career education, some searching of your own soul is in order. The good planner challenges all the assumptions.

Remember that schools, for the most part, train only in academic talents, and leave other talents—like creativity—untouched. And remember that career education can become just as academic—and, indeed, there is great pressure to make it so, under the guise of respectability.

Take a good look at your own biases, and try systematically to find people, ways, or situations to challenge them. After a while you may even enjoy it.

THE OVERALL PLAN FOR CAREER PREPARATION

Facilities for occupational training cannot exist independently of the educational program. The Career Education Plan is the base for facilities planning.

An annotated outline of a Career Preparation plan follows, illustrating the steps to take and the kinds of actions required to get a hard-hitting program operational in a community.

Develop An Understanding And Support Of Career Education In The Community

- Use William Blurock's pamphlet in this series of documents "Goals and Options" to get an overview of the program, to stimulate thinking, and to get underway.

  This will lead you to many more materials.

- Organize a group to think about Career Education, make it widely representative and full of action-oriented people—

  Representatives from Parents
  Students
  Students
  Employers
  Unions
  Public Agencies
  Service Clubs
  Schools
  Others

  should make up the study group.

  Make the group large. Set up sub-groups, sub-committees to work in specific areas. Have a good steering committee.

- Develop some agreed-upon objective for Career Education.

  Develop a simple instrument that illustrates the impact of Career Education.

  Test the instrument in the community:

  Use it as a questionnaire:
  Which response best describes your reaction?

  I agree heartily
  I agree reluctantly—
  I disagree—
  I don't think the idea is important—

  Test through interviews:

  Through open ended question—

  Test it through study meetings:

  Have group rewrite the objectives—

  Revise the objectives until you get widespread participation and reasonable support from the community.

Following is one man's objectives. Use it or discard it It may stimulate you to produce a much-better one.

SAMPLE OF QUANTATIVE STATEMENTS OF OVERALL OBJECTIVES FOR A CAREER PREPARATION

OBJECTIVE	STATE GOAL	LOCAL PLAN YEAR 1	YEAR 5	YEAR 10
1. TO PROVIDE AN INTRODUCTION TO WORLD OF WORK THROUGH:				
1A. Career Development Theme in Elementary School.				
(1) Enrollment—Elementary school				
(2) Percent Elementary population enrolled in Career Development program				
(3) Number Elementary school students enrolled in Career Development program				
1B. Career Development Program at Middle School.				
(1) Enrollment—Middle school				
(2) Percent Middle school population enrolled in Career Development theme				
(3) Number Middle school students enrolled in Career Development programs				
1C. Career Development Program at Secondary School				
(1) Enrollment—Secondary school				
(2) Percent Secondary school enrolled in Career Development program				
(3) Number Secondary school students enrolled in Career Development programs				

OBJECTIVE	STATE GOAL	LOCAL PLAN YEAR 1	YEAR 5	YEAR 10
2. TO GUARANTEE THAT NO STUDENT ENTERING HIGH SCHOOL LEAVES WITHOUT OPPORTUNITY OF GAINING AN ENTRY LEVEL SALABLE SKILL REGARDLESS OF HIS CAREER CHOICE				
2A. Percent Secondary school students involved in career preparation				
2B. Number Secondary school students involved in career preparation				
2C. Percent students enrolled completing Secondary program				
2D. Number students enrolled completing Secondary program				
2E. Percent of students available for work, placed in full-time jobs following training				
2F. Number of students available for work, placed in full-time jobs following training				
2G. Percentage of Secondary students, leaving High school and available for work, placed in full-time jobs.				
3. TO PROVIDE PROGRAMS OF ADULT CONTINUING EDUCATION TO ALL CITIZENS OF THE COMMUNITY WHO NEED OR DESIRE SERVICE				
3A. (1) Number of people age 18-24 in school district				
(2) Percentage of population age 18-24 enrolled in post-Secondary Career Preparation				
(3) Number of population age 18-24 enrolled in post-Secondary Career Preparation				
3B. (1) Number of adults in district				
(2) Percentage of adults enrolled in Preparatory programs in Career Preparation				
(3) Number of adults enrolled in Preparatory programs in Career Preparation				

OBJECTIVE	STATE GOAL	LOCAL PLAN YEAR 1	YEAR 5	YEAR 10
4. TO PROVIDE OCCUPATIONAL PROGRAM FOR SECONDARY SCHOOL STUDENTS WITH SPECIAL NEEDS				
4A. Number of Disadvantaged by Level				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
4B. Percentage of Disadvantaged enrolled in career preparation by level				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
4C. Number of Disadvantaged persons for whom appropriate and effective career preparation programs are provided				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
5. TO PROVIDE APPROPRIATE VOCATIONAL EDUCATIONAL TRAINING FOR ALL HANDICAPPED PERSONS WHO CAN PROFIT FROM SUCH TRAINING				
5A. Number of handicapped persons in district by level				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
5B. Percentage of handicapped persons to be enrolled in career preparation programs				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				
5C. Number of handicapped persons to be enrolled in career preparation programs				
(1) Secondary				
(2) Post-Secondary				
(3) Adult				

DEVELOP AN APPROPRIATE CAREER EDUCATION PROGRAM FOR YOUR COMMUNITY THAT WILL MEET YOUR OBJECTIVES

A good plan—

Restates the objectives in detail and as far as possible quantitatively.

Purposes appropriate programs and services to meet the objectives.

Identifies and secures the resources necessary to meet the objectives—in the community and in the school's staff & facilities

the focus → of this booklet

Installs and operates the programs and services.

Evaluates.

Reshapes the programs and services as a result of experience and evaluation to improve performance in meeting objectives. From time to time, evaluation may result in revision of objectives.

A check list is often useful and an example is included to illustrate what you can do to provide an overall framework for planning. If the general idea of the check list is acceptable, the first task is to revise and make more detailed and specific the tasks to be done.

A CHECKLIST FOR CAREER EDUCATION PLAN INDLUDING SPECIFIC OBJECTIVES FOR CAREER EDUCATION

Checklist #1

A CHECKLIST FOR CAREER EDUCATION PLANS

TASKS	Elementary	Middle School	High School	College	Adult & Continuing Ed.
1. Set Objectives					
2. Develop Programs to Meet Objectives					
2A Modify Existing Programs					
2B Install New Programs					
3. Modify or Add to Support Services to Meet Objectives					
3A Counselling					
3B Occupational Guidance					
3C Placement					
3D Follow-up					
4. Use Community Resources to Meet Objectives					
4A Planning					
4B Establishing					
4C Providing Location					
4D Operating					
4E Evaluating					
5. Retrain Staff to Meet Career Preparation Objectives					
6. Resources Necessary to Meet Career Preparation Objectives					
6A Staff					
6B Materials					
6C Facilities					
6D Funds					
7. Install and Operate Programs to Meet Objectives					
8. Evaluate Programs to Determine Success in Meeting Objectives					
9. Develop and Operate Mechanism Necessary to Revise Career Preparation Program to Meet Objectives					

SPECIFIC OBJECTIVES	Included LOCAL PLAN Yes	No
S1 District Offers Five or More Career Preparation Program Areas (Agr., D.E., Health, H.E., OE and T and I)		
S2 District Offers a Comprehensive Program of at Least 25 Areas of Career Preparation		
or		or
S3 District Is Part of a Designed Area Center		
S4 Community College Controls All Local Career Preparation for Adults		
S5 Long Range Career Preparation Planning Takes Place on a Regional Level		
S6 District Uses Performance Criterion as a Basis for Instruction		
S7 Uses General Occupational/ Technical Advisory Board and Occupational Advisory Committee		
S8 Uses Advisory Committee to Evaluate Program		
S9 Utilize Facilities at Least 12 Hours a Day		
S10 Utilize Year Round Operation of Facility		
S11 Demonstrates Instructional Programs for Potential and Actual Dropouts		
S12 Demonstrates Intensive Training Programs for Out-of-School Youth and Adults		
S13 Demonstrates Instructional Programs for Now and Emerging Occupations		
S14 Demonstrates Effective Guidance and Placement Programs for Students		
S15 Provides for Disadvantaged Students		
S16 Provides for Handicapped Students		
S17 Protects Rights of Minorities and Poor for Job Training and Placement as a Priority Target Group		

HOW TO DEVELOP A CAREER PREPARATION FACILITIES PLAN AS A SUBSYSTEM WITHIN A CAREER EDUCATION PLAN

Within career education, there is a major component dealing with helping students to learn skills that are useful in business, industry, service occupations and the whole gamut of employment. These skills, embodied in a comprehensive career preparation plan, include:

Salable skills—welding, typing, assisting a social worker, etc.

Less specific but important skills such as:

- ability to respond to change
- ability to get along with others
- honest desire to work
- interest in contributing to the job
- choosing jobs

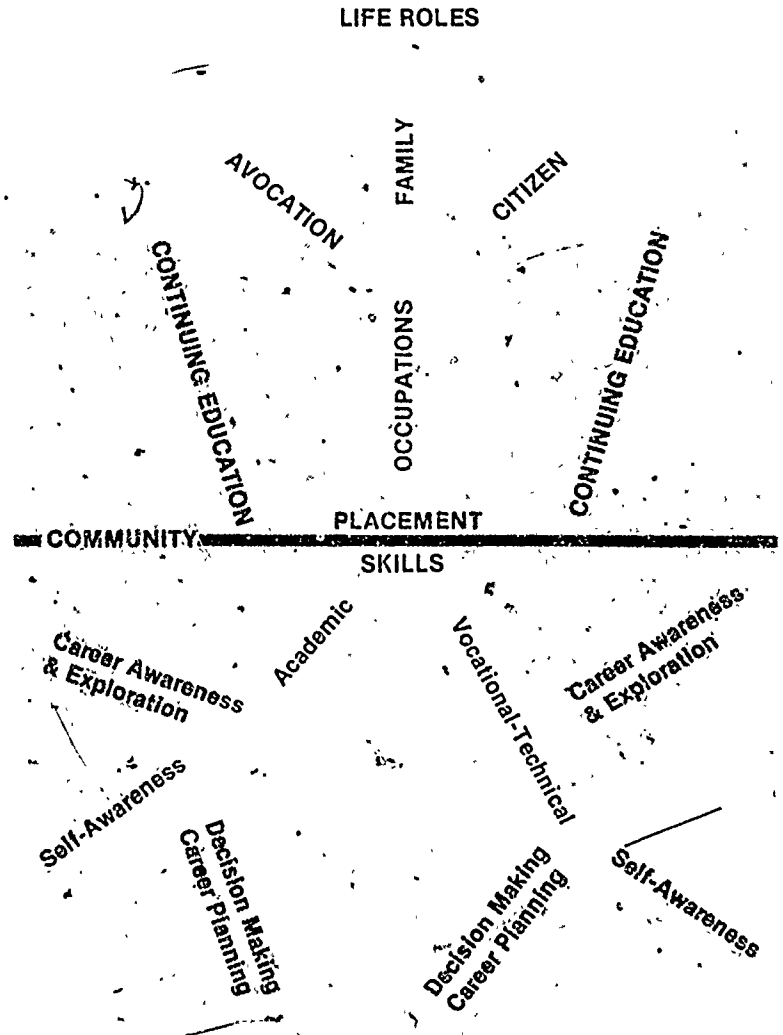
Skills in communication that are a general responsibility of education but which can be reinforced or, indeed, developed around vocational learning situations:

- reading—operating manuals
- writing—technical reports
- speaking—to communicate
- listening—to instructions

When the career preparation is good, it is a base for retraining in other occupational skills as these become needed with changes in jobs and industries. This is the difference between education and training that is so specific as to be of little use when change strikes.

How Do All These Concepts Fit Together?

TREE MODEL OF CAREER EDUCATION



Developed by the Michigan Department of Education, February 1973

The major outlines of Career Preparation Faoilities Plan are given below.

1. HOW MUCH STUDENT TIME?
   All the students involved and the time they will spend in Career Preparation activities
2. HOW IS STUDENT TIME APPORTIONED to Career Preparation?
3. HOW IS THE SPACE DEFINED that is necessary to absorb the student time apportioned to programs? The characteristics of the space and the capacity to absorb student time are involved.

A CONTROLLING PRINCIPLE—DO IN EDUCATIONAL INSTITUTIONS ONLY WHAT CANNOT EFFECTIVELY BE DONE IN THE COMMUNITY.

4. WHAT CAPACITY DOES SPACE IN THE COMMUNITY HAVE to absorb student time?
5. WHAT UNMET NEEDS EXIST FOR SPACE to absorb student time after appropriate community space has been planned to be utilized?
6. WHERE SHALL EDUCATIONAL INSTITUTIONAL SPACE BE PROVIDED to meet unmet needs for Career Preparation space to assure student time.
7. HOW SHOULD SUCH SPACE BE PROVIDED in educational institutions?

Each of these topics is dealt with in sequence in the following material.

1. HOW MUCH STUDENT TIME?

The equation is the number of students in the career education plan who are targeted as the objectives of the plan for Career Preparation multiplied by the number of hours per weeks involved in the Career Preparation Activities. The product is expressed in weekly student hours.

number of students	x	number of hours of involvement week	=	number of weekly student hours
derived from objectives of career preparation plan		determined by professional staff and verified or revised by evaluation		arrived at by simple multiplication

The number of students is determined by the plan (sample quantitative statement p. 7). If, for example, 100% of the students in secondary school are expected to learn a entry level skill, the number of students that must be dealt with is 100% of the number of students estimated to be enrolled now and estimated to be enrolled in five and 10 years. Since it might be impossible to move to 100% involvement at once, the move from the present enrollment to the goal may be undertaken in a period of time.

Let's work out the mathematics:

DERIVATION OF NUMBER OF HIGH SCHOOL STUDENTS TO RECEIVE ENTRY LEVEL SKILL	PLAN—ANYWHERE U.S.A. HIGH SCHOOL Year 1	Year 5	Year 10
Expected number of students—boys and girls—in upper two years	500	550	600
Goal—percent securing salable skill	14%	50%	100%
Number receiving salable skill	70	225	600

This table could be interpreted to mean that in a high school with 500 students enrolled currently in the upper two years, 14% or 70 now are involved in Career Preparation activities. By Year 5, the number involved will increase to 225 and by Year 10, to 600. The last year all students in the upper two years are getting entry level skills, the high school has increased slightly in size and the objective of 100% getting a entry level skill has been reached, even though 10 years may seem to be a long time.

DERIVATION OF TIME SPENT AT LEARNING ENTRY LEVEL SKILLS

The factor of time is added by the decisions made as to the amount of time required to learn entry level skills at the varying level of skill multiplied by the number of students involved at each level.

For example, at Year 5, there could be a distribution of students like this—still only an example.

Number of Students Gaining a Entry Level Skill

50% of the total in upper two grades, or 225

125 students are enrolled in two year medical technician programs taught three hours a day five days a week.

The number of weekly student hours in a two year medical technician program is 125 students x three hours a day x five days a week = 1875 W.S.H.

50 students are enrolled in welding programs for one year—two hours a day five days a week

½ (50) students x two hours a day x five days a week = 250 W.S.H.

The number of students is divided in half because in the two years under consideration, the students are enrolled in a welding program only one year or ½ the time.

50 students are enrolled in a truck driving program for one hour a day, five days a week for a semester

¼ (50) x one hour a day x five days a week 62.5 W.S.H.

Total = 2187.6 W.S.H.

To the data for Anywhere USA High School for students in the upper two years should be added the following kinds of measures of student time.

DROP-OUTS OR POTENTIAL DROP-OUTS

A special program may be set up for students who are in grades nine and ten who may drop out of school. The number of students can be estimated from past experience. A goal of 100% of such students can be calculated to be reached at once. The program may be, for example, full time or six hours a day five days a week for one month. If there is a peak time for the target students to drop out, this month should set the time—for example at the peak 12 students are potential clients for six hours a day five days a week or 360 W.S.H.

This amount of time should be added into the equation for time, using peak demand in this example, because the plan does not want any vulnerable students like these to leave without help.

COMMUNITY COLLEGE STUDENTS

Treat in a fashion similar to high school students, with obviously different percentages of expected enrollments involved.

ADULTS

Set a percentage of adults 18-24 at one level and a percentage of 24 and older at another level, for example. Base it on present enrollments and look is the State plan or communities with successful programs to set the goals. Readjust goals as experience suggests but keep these out of reach.

SPECIAL TARGET POPULATION

Handicapped and disadvantaged people are special priority targets for career preparation. Estimate the numbers and make sure they are involved in the program at the level planned as soon as possible.

STUDENTS FROM OTHER COMMUNITIES

Sometimes the number of students to be cared for is increased by students sent to the training system by other communities. These should be allowed for in the student

time equations.

A GROUP OF COMMUNITIES AND AREA FACILITY PLANNING

Add together the student time calculations for each community—separate out the student time demands to be met centrally from those to be met in each participating school.

2. HOW TO DISTRIBUTE STUDENT TIME TO PROGRAMS

Programs are sequences of activities that result when completed in a pre-determined level of occupational skill and understanding.

There can be a short term program in welding teaching a specific welding skill.

There can be a long term program in automotive mechanics that produces, in high school, a competent beginning employee in a garage.

The previous section provided a fix on the number of weekly student hours of time in Career Preparation. The next problem is to distribute that time among appropriate programs.

There are three elements in the equation.

- Manpower needs
- Student interests
- Number of program units

2A. HOW ARE MANPOWER NEEDS DETERMINED?

The information collected in this area is aimed at finding out what Career Preparation is needed in the area; what programs are no longer needed and what modifications of emphasis or number of students may be desirable.

There are three ways to get at this data:

A comprehensive manpower survey

- By personal interview
- By mail questionnaire
- By telephone survey.

A specific area manpower survey, the health-related occupation, or a specific skill—welding—for example, using the same techniques.

Using data for the region developed by associate agencies

For items 1 and 2 there are substantial sources of examples of procedures and forms to be used. Among them are:

Illinois Occupational Curriculum Project, "Occupational Program Identification", State of Illinois Board of Vocational Education and Rehabilitation, Springfield, Illinois, 1972.

Arnold, Joseph P. et al. "Determining Occupational Emphasis for High School Programs". The Center for Vocational and Technical Education, Ohio State University, Columbus, Ohio 1970.

Michigan State Department of Education, Division of Vocational Education.

A large number of publications on reported state and national manpower requirements exist and recent ones are useful.

An experimental program, OTIS, or Occupational Training Information System, has been developed cooperatively by the Oklahoma State Department of Vocational and Technical Education, the U.S. Department of Labor, and the Research Foundation of Oklahoma State University. This is an attempt to establish compatibility among the major sources and users of manpower data and to develop a versatile system for utilizing existing data to project manpower data. Another approach is being developed in Kansas through Kansas State University. Although the OTIS system is not yet generally available, the advance findings suggest that this will be a reliable tool for planners in this area.

2B. HOW ARE STUDENT AND PARENT INTERESTS DETERMINED?

The interests of students and parents of students in areas of occupational training are of critical concern in developing programs for Career Preparation. These are most frequently obtained by questionnaire and by personal

interview. Parent interviews are useful in determining the ways in which parental choice influences decision-making by students in career choices. These serve also to educate parents particularly as to the great diversity of jobs available.

Increasingly the use of computer-assisted occupational guidance programs, such as CVIS, will provide useful data about student interests in terms of the way students match themselves to needs and requirements of jobs in various industries and businesses.

2C. HOW ARE THE NUMBER OF PROGRAM UNITS DETERMINED?

A program unit is a statistic that attempts to define one teacher's task in a program in terms of the amount of student time for which the teacher is accountable. The program unit is expressed in weekly student hours.

Example:
A program unit, expressed in weekly student hours, is the number of hours per day a teacher works in the program times the number of days in a week, times the expected class size—or, as an example, 6 hours a day x 5 days a week x 24 class size, or 720 W.S.H.

The total number of weekly student hours generated divided by the W.S.H. value of a program will equal the number of program units you will have to play with.

2D. WHAT IS THE BEST METHOD TO DISTRIBUTE STUDENT TIME TO PROGRAMS?

At this time there is no simple or complex formula. Further, there would be some hazard for one State to decide that five auto mechanics would be needed during the next year, and then only to train five individuals. This would mean that the State would decide who among those applying would be auto mechanics, which is not the kind of State we want. We literally must overtrain for jobs to prevent closing out the chances of students to get the job they want or to get a better job than their father has.

Further, ours is a mobile population and an auto mechanic trained in Massachusetts may get a mechanic's job in Arizona.

Finally, our system of forecasting manpower needs is not and cannot be reliable. Too many decisions affecting jobs are political decisions. Too little is known to forecast properly. An example is the forecasts up to 1968 for severe shortages of teachers when, in fact, the oversupply of teachers was just beginning to be felt.

You will have to develop your own way to rationalize the wallcover from data on supply and demand for jobs and student interests to installation of programs.

You will also need to provide in your planning for dropping programs where students or jobs do not materialize. You will substitute new programs and pragmatic policies of doing what works will be the final test. This means you must be able to change programs rapidly.

This does not mean that the search should not continue for a formula to relate manpower needs and student interests to program identification and selection.

One approach is to add manpower needs and interests together somehow to provide an index or ranking of occupational program, and by use of the ranking of program by need, allocate program units by judgment. When this is done, it is possible to weight student interest and manpower needs to gain—pragmatically—a workable scale of need.

A suggested procedure—

1. Identify programs that are appropriate to your area. Assume that there are 100 and you can justify 40 program units.
2. By inquiry, rank the student interest from 100 (greatest interest) to 1 (lowest interest).
3. By inquiry and regional data, rank the manpower needs from 100 (the greatest need or greatest job opportunity) to 1 (the lowest).
4. Weight student interest with respect to manpower needs. Francis G. Connell in a study of occupational training in Westchester Co., N.Y., suggested this procedure and used twice the weighting for student interest as compared to manpower needs. If you don't weight these you give each the same importance.

5. Apply the weighting to the raw rank and add together the rank to provide a combined rank of need or importance. For example, if health occupations were ranked fourth in manpower needs at 97, and 21st in interest at 80, and you used a factor of 1.5 in weighting interest, the combined score would be 97 + 1.5 (80), or 97 + 120, or 217, which would rank high in priority, the highest possible ranking being 300. Food service occupations, on the other hand, might be third in manpower needs at 98, but the student interest was 10th from the bottom. This indicates the kids know the jobs are dead end, poor working conditions, and, for most part, low-paying. Apply 1.5 to 10 for 15, add this to the manpower index of 98, and get a combined score of 113. This is not a high priority program.
6. Use judgment in distributing the number of program units to the weighted rank order of need. Obviously, more than one program unit can be allocated to a program. Business education is a general cluster of programs that will command high manpower needs and fairly high student interest. In an established program where students have freely enrolled, the present number of weekly student hours generated can be multiplied by factors related to changes in the total number of students to be served and divided by a program unit to determine how many program units to be devoted to that area.

2E. TABLUATING STUDENT TIME DISTRIBUTED BY PROGRAMS

The following sample table may be of some use in summarizing your experience in allocating student time to programs.

The tabulation can be filled in and tested. An exercise should be gone through to link a cluster program that cannot be offered to other programs to provide the needed service.

Weekly student hours are used again to encompass the wide variety of time allocations that are probably going to be characteristic of the school of the future. Modules or building blocks of courses can best be accommodated in a time matrix, too. There probably will be much less of a two year course and much more of a composite of learning modules or bits put together to form an individualized learning prescription for a specific individual.

Sample Table
Summarizing Distribution
of Student Time to Programs

Program (1)	Rank Order In Student Interest (2)	Weighted Rank Order In Student Interest Col. 2 x weight (3)	Rank Order In Manpower Needs (4)	Composite Rank Order Col. 3 x Col. 4 (5)	Number Program Units Allocated (6)	Number of W.S.H. Col. 6 x W.S.H. program unit (7)
					TOTAL*	(1)

*This number should add up close to the total number of weekly student hours available for distribution.

3. HOW TO DECIDE THE LOCATIONS OF VOCATIONAL PROGRAMS?

The vocational programs will be located in a variety of places. The total amount of student time in them has been forecast and the programs to be offered have been determined.

Now space must be designated, captured, formed or constructed to absorb the required amount of student time. The space must have characteristics that will satisfy the physical needs of the programs planned. The equation is:

The total of amount of student time to be provided for = the capacity of the following spaces to absorb that time:

1. Existing high school spaces specifically designed for Career Preparation activities.	1. The area vocational center provides certain career preparation activities efficiently and economically.
2. Existing high school space freed by the emphasis in student time allocation on Career Preparation activities.	2. When you divert a good deal of student time into occupational education, you take it away from college preparatory education. Perhaps the shift of function will free space in the high schools that can be converted to career preparation. The big areas of employment for the future are in services, not in manufacturing, and this makes a difference in space.
3. Community college space available for high school use.	3. Sometimes community college/high school joint planning will result in a shared laboratory when neither one could justify having a laboratory separately. Some high school students should take some of their work in the community college. The walls between the two agencies are disappearing.
4. Community space available for work experience programs of all types.	4. Work experience in the community can absorb a significant amount of student time and should be built into the formula.
5. Community space available for conversion to Career Preparation activities.	5. Community space is described and ways to use it are developed in "Facilities Options" by C.W. Brubaker, one of the reports in this series.
6. Needed new construction to house Career Preparation activities.	6. New construction is what you do when you have exhausted all the other possibilities.

4. TRANSLATING STUDENT TIME INTO SPACE

Capacity is the ability of a space to absorb weekly student hours of student time. Expected number of students at a time x hours of use = capacity of space expressed in W.S.H.

Capacity is an art form best represented by a schedule, which, in turn, is a plan to use time—either of students or teachers.

The expected number of students in a space is a policy. Some programs have moved to clusters of faculty and students in open-space; usually expressed multiples of classes. Others have developed individual student learning paths through common tools.

The number of hours of use is also a policy. Most programs in area vocational centers run two sessions a day for high school students and one in the evening for adults during the normal school year. Other programs will operate continuously 24 hours a day year round. Still others fall in-between somewhere.

When planning facilities, the capacity should be established for a shift. If the day shift is the heavy load, the same capacity will house the evening shift. The pattern of use of the facility will determine the number of shifts, and hence the capacity.

The essential calculation is divide the number of weekly student hours generated by a program or cluster of programs by the capacity of a space or cluster of space to absorb weekly student hours in that program.

Doing this by steps is as follows:

1. Take the weekly student hours generated for a program, and expressed in the Summary Table of Student Time Distributed by Programs.
2. Divide that figure by the capacity of the space.

For example:

Dental assistants may have an allocation of 720 W.S.H. A dental assistant's laboratory may accommodate three sections of day students, 20 students at a time, for three hours each session, five days a week—so that the space could absorb 3 x 20 x 3 x 5, or 900 W.S.H. One laboratory would do. If the school operated only two sessions a day, the capacity would be 2 x 20 x 3 x 5, or 600 W.S.H. One laboratory would not absorb the time. You will have the following alternatives:

1. Restrict enrollment
2. Move to three sessions a day
3. Increase class size
4. Utilize work experience to provide for the excess enrollment
5. Think of something else to do to survive

Another example is Typing I as a course in business education.

Assume 300 students are allocated to business education typing 1 hour a day, 5 days a week.

300 x 1 x 5 = 1500 W.S.H.

If a usual 35 student typing classroom, well planned, used 5 out of 6 periods a day, 5 days a week, the room would absorb 875 W.S.H.

You now need two regular typing rooms to accommodate the W.S.H. generated. On the other hand, you may install an individualized learning system with multi-channel dictating equipment and decide that this can be done with large group instruction. Allowing for variations in size of groups, 300 students in a 6 period day could be expressed as 50 students a period, corrected to 60 students x 6 periods a day x 5 days a week is 1800 weekly student hours.

Once you have decided on number and kind of teaching stations and capacity of the teaching station in terms of W.S.H., which can be translated readily into number of students at one time, the problem becomes one of the space necessary to house the students.

5. DESCRIBING THE SPACE

The spaces requiring new construction or remodeling of existing space to provide learning space for outside of the real world having been established, these spaces must be described to help an architect understand what is needed to house the program.

This description can be developed in words, in diagrams and in quantitative terms. The architect should know what the process is that will be carried on in the laboratory. Casettes, film strip, trips to parallel programs and words will help him get a feeling of the task.

You will need to describe the space in diagrams of relationship, state the capacity, and list the various areas in square feet. Details about finishes, utilities, special conditions and location are required. A general idea of equipment is most helpful.

6. THE PLANNING TEAM

The development of a plan for Career Preparation facilities, or something else for that matter, has a series of expected outcomes. These may be classified as:

1. A plan for the facility
   - 1A. An operational plan
   - 1B. Contract documents for construction or modification of space
2. Support for the plan, which causes the plan to be put into effect
3. Training of those who must make the operational plan or the physical facility work. Curiously, there is no better time to reeducate a faculty than during a building or remodeling project. Perhaps it is because, by moving to consideration of a facility, no one is threatened by the suggestion that what has been done in the past is not necessarily perfect.

If you play your cards right, you get all three results for the price of one—a classical example of synergism.

The careful developer of a planning team has all the outcomes in mind. Support for the plan is one of the most significant factors that enters into the selection of the planning team. Without support, the work of the team will be ineffectual and may actually set back outcome 3, reeducating staff.

The power base in dealing with support is divided between the voters of a community who must support the project and the State from whence flows much of the cash. The local governing body of the educational agency has many legal obligations. It may or may not represent community thinking, and this is not necessarily a good sign of whether or not the community will support the plan. Of course, one of the real tests of a good administrator is whether or not he can read "the community" accurately. There is really no "community"—there are many. The final action of a school district in voting is a resultant of a large series of independent decisions. To tap into community power, one reads the community as it really is, and assures that those whose communication systems within the community are effective are included in membership in the planning team.

Dealing with the State is not as capable of local influence. The State becomes a bureau of the State Education Department, and this finally becomes people. The quality of the people who will work with you from the State is an unknown but, in view of the great and growing concern about career education, probably pretty high. There are two basic choices in dealing with State agencies, and obviously the agencies influence this too. One is to prepare a plan and submit it to the agency for review at such intervals as may be required. The other is to include representatives of the agency in your planning team, as a partner in planning. Under the first approach, your plan is reviewed according to the agency's criterion. Under the second approach, through joint effort leading to greater understanding, the criterion are modified or refined in the light of real local needs.

Support represents a criterion for arrangement of the planning team. Information, and its corollary learning, also represents an important element. People who contribute information to the planning process put themselves in a

good position to learn. The welter of decisions that must be made on the basis of information, eventually produces a setting in which, in a good planning team, thinking takes place. This is an admittedly dangerous outcome, but it adds excitement to the planning process and may, if it is not killed somewhere along the line, contribute to a significant plan.

Information-learning contributors to the planning process include:

Teachers and educational staff members, including non-public schools participating

Representatives of management and labor in business and industry

Students and parents

Representatives of the State agency

Others—university faculty members, community college staff, writers of books and articles, speakers at meetings, people met on the street, etc.

For the first objective, the development of an operational plan and the development of a facilities plan, you will lean more heavily in some aspects of the planning upon professionally trained people on the staff or those hired as temporary members of the staff. Development of technical documents related to learning by objectives, or working drawings and specifications for construction of a facility, require professional competence which can respond to general community needs, but which has within the task professional standards and demands that must be met.

Thus, the team includes elements of support, of information and learning, and professional skills. The one factor that is not accounted for is judgment. So a measure of the team is the quality of the people involved. There are a variety of functions in the planning process that, excluding professional skills in carrying out tasks, are critical and should be looked for in assembling people.

Someone leads . . .

Keeps things in perspective, allows wide-ranging discussion yet gets things done, is organized, has a keenly developed sense of time, knows when important questions are under consideration and when unimportant issues are cluttering up the place, often respected, sense of humor useful, charismatic.

There are people who think . . .

Real wisdom is a rare commodity. These are the people who keep turning ideas over, who examine alternatives, who are not always for the new yet not enraptured by the past. When one of these members of the planning group feels comfortable with a decision, you probably have made a good decision.

There are workers who do things . . .

Every group has those who are willing to do things—collect data, study information, interview people, and so on.

There are members who represent . . .

A planning team has its roots in the various segments of a community so that the ideas and interests of a group in the community can find their way easily into the deliberations of the planning team. Manufacturers, students, union members, teachers, businessmen, parents, foremen, non-public school parents, school board members, mechanics, community college staff members and newspaper reporters are samples of community members representing interested parties.

In a good team, the same people perform many functions. A reliable thinker may be a reliable worker who represents a point of view and exercises leadership.

There is no one good planning team organization. Each community will find its own way toward an effective organization. Generally these functions are served:

1. A governing body with legal authority to make decisions, responsible ultimately to the voters and to the requirements of Federal and State laws.
2. A decision-making group for the project. In some cases this is the governing body. In other cases the governing body may delegate some of its authority and much of the problem to an *ad hoc* planning or steering committee.

3. Committees of the steering committee, reporting on specific matters, increasing the opportunity to involve people from within the community and within the school system.
4. The administrative staff of the school system, providing services and professional skills for the decision-making group and including, on a temporary basis as members of the administrative staff, persons skilled in architecture, building, education, or such other areas as may be thought necessary.

Thus, there is a governing body. It will either act as the steering committee, will insert itself into the steering committee by asking others to be members, or will ask a group to serve as an *ad hoc* steering committee. Assuming that the last choice has been made, the composition of the steering committee is of paramount importance and the size becomes a problem. Generally, a steering committee could fall between nine members and fifteen members. It can be expanded to a larger committee on occasion by including members of its subcommittees. Alternatively, a large committee can be asked to serve—100 members plus or minus—and be organized into the steering committee and subcommittees.

Subcommittees are set up as study committees on specific tasks to be undertaken as a part of the plan. A subcommittee might be developed for each of the major topics—such as, how many students?, what programs?, where offered?, impact of year-round program?, etc.

For example, a subcommittee attempting to deal with the question of what instructional programs should be offered could include, in addition to their support function, the following kind of people in information/learning roles:

a) Someone from the State agency engaged in development of a manpower information system model
b) Local personnel officers
c) Guidance people from the schools
d) Union representatives, particularly if there are apprenticeship and union membership problems
e) Students and parents
f) Representative of the local branch of the State Employment Service
g) Teachers

The flow of ideas into the committee from all sources should be encouraged. The process of learning on the job should be applied to as large a number of staff members as can conveniently be worked into the structure without overloading the planning staff with school people.

The above notes have dealt with the deliberative side of the planning. The professional side, in-curricular matters and in factors related to building or remodelling, have their own dynamics. The school system should have developed, or will develop if it is a new organization, a way to secure maximum effective participation of faculty and staff members in planning. The introduction of specialists, on temporary hire, from outside the system has complications that should be considered.

6A. SELECTING THE TEMPORARY MEMBERS OF THE PLANNING TEAM

Architect

Usually an architect will be required to assist the district in preparing plans and specifications for new construction or remodelling of existing space.

The American Institute of Architects at 1735 New York Avenue N.W., Washington, D.C. 20006, will happily provide suggestions on how best to select and employ an architect.

Construction Manager

See Linn Smith's booklet on "Construction Options" for a discussion of the role and performance of a construction manager.

Educational Consultants

These are temporary employees of the school system who bring with them a considerable experience which may be lacking in the school system and an ability to broaden the spectrum of choices that the school system selects from. Educational Consultants are not designed to make your decisions for you. They can help you.

7. PUTTING IT ALL TOGETHER

The planning team and the planning process has brought you down the path of educational planning preparatory and basic to facilities planning.

Three booklets in this series take you the rest of the way:

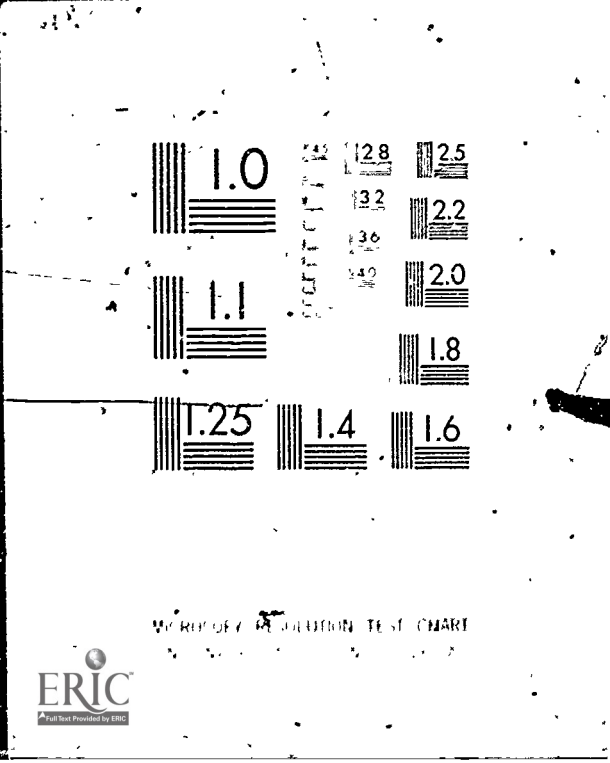
C.W. Brubaker "Facilities Options"
Stretch your mind with this exposition of the wide variety of ways people are dealing with vocational facilities.

Peter Tarapata "Planning For Change"
A stimulating discussion of keeping options open in building for change and development of a procedure for facilities management.

Linn Smith "Construction Options"
A pentrating look at a wide variety of new ways to get better buildings.

and don't forget frequently to return to:

William Blurock "Goals and Options"
. . . or what it is all about.


1.0
1.1
1.25
1.4
1.6
2.0
2.2
2.5
1.8
MICROCOPY RESOLUTION TEST CHART

DOCUMENT RESUME

ED 106 964 EA 007 157

AUTHOR Tudor, Dean
TITLE Planning-Programming-Budgeting Systems: Revised Edition Including Exchange Bibliographies No. 121 and No. 183. Exchange Bibliography No. 289.
INSTITUTION Council of Planning Librarians, Monticello, Ill.
PUB DATE Jun 72
NOTE 30p.
AVAILABLE FROM Council of Planning Librarians, P.O. Box 229, Monticello, Illinois 61856 ($3.00)

EDRS PRICE MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS *Bibliographies; Government (Administrative Body); *Management Systems; Planning; *Program Budgeting; Resource Allocations; *Systems Approach

ABSTRACT

This bibliography is intended to inform administrators of the availability and wide scope of programming-planning-budgeting systems (PPBS) and their applications. The basic objectives of PPBS are: (1) to define jurisdictional objectives clearly and to relate them to defined needs and goals; (2) to stimulate the indepth analysis of all existing and proposed new programs in terms of their costs and benefits; (3) to link the planning and budgeting process through the annual review of multiple year plans; (4) to measure actual and planned performance; and (5) to provide a systematic way of integrating all these elements to arrive at a more effective system for the allocation and management of resources. (Author/MLF)

Council of Planning Librarians · EXCHANGE BIBLIOGRAPHY

JUNE 1972

289

PLANNING – PROGRAMMING – BUDGETING SYSTEMS: Revised edition including Exchange Bibliographies No. 121 and No. 183

Dean Tudor, Librarian
Ontario Department of Revenue

EA 007 157

Mrs. Mary Vance, Editor
Post Office Box 229
Monticello, Illinois 61856

COUNCIL OF PLANNING LIBRARIANS Exchange Bibliography #289

PLANNING-PROGRAMMING-BUDGETING SYSTEMS:

Revised Edition Including Exchange Bibliographies #121 and #183

by

Dean Tudor, Librarian
Ontario Department of Revenue

INTRODUCTION

The increasing complexity of modern life and the public's demand for administrative governments on all levels to provide services geared to this life have made the task of policy makers, planners, and managers within the jurisdictional areas increasingly difficult. The range of problems, the possible range of responses to these problems, and the chronic shortage of funds to fulfill all demands, calls into question old methods of establishing priorities, designing appropriate programs, managing operations and controlling budgets. These "old methods" were probably adequate for the conditions which prevailed when they were developed; however, it is now recognized that there are a number of weaknesses inherent in the "old method":

(a) vagueness of objectives;

(b) limited analysis of alternatives;

(c) partial costing of programs;

(d) inadequate consideration of future year implications of present decisions;

(e) short review and decision period;

(f) emphasis on expenditure control instead of performance; and

(g) gap between planning, budgeting, and control.

In the last few years there has emerged a body of knowledge and a group of techniques, which can provide great assistance to policy makers and managers in their work. The system or management approach known as Planning-Programming-Budgeting (P.P.B) sometimes known as Program Budgeting is now employed in a number of jurisdictions for this purpose.

A reading of the literature on P.P.B. can lead to two distorted views on what the system is and does.

On the one hand, a number of papers and lectures have appeared making P.P.B. synonymous with abstract, advanced, mathematical Systems Analysis. This approach, in its emphasis on the use of complex mathematical model building, programming and optimizing techniques, creates the impression that a P.P.B. system cannot exist unless these sophisticated econometric and mathematical models are employed. This might be called the "abstract theory" view.

Another view which is often presented represents P.P.B. as an advanced accounting and control system. In this view, the essential elements are a new way of presenting budgets and controlling expenditures. These changes are accompanied by the inclusion of longer range projections of costs and the introduction of a form of performance reporting. This might be called the "book-keeping" approach.

Neither view is adequate or acceptable if a P.P.B. system is to perform a useful function. To some people, the "abstract theory" view seems to imply that the entire decision-making power can be turned over to the Systems Analyst and that managers become wholly dependent upon the mathematical wizardry of these analysts. Analysis of issues, objectives and alternative courses of action is the backbone of a well functioning P.P.B. system, but the inference that only very sophisticated analysis constitutes P.P.B., or that P.P.B. cannot exist without sophisticated analysis is dangerously misleading. Often the greatest insights come from orderly but essentially simple analyses.

If, on the other hand, the "book-keeping" approach were adequate, and nothing but the basic ways of submitting plans and estimates and of reporting on operations were changed, the system would be a matter of substituting one form of paper for another with no essential change in the basic thinking and analysis. In fairness, there is no real evidence that authors and lecturers intend to create either of these impressions, but these impressions do seem to emerge in the minds of readers and listeners fairly frequently.

A good P.P.B. system will require a number of standardized procedures and reports, and it will undoubtedly encourage the use of advanced analytical techniques when they are needed. Its essential value to managers comes, however, not from the techniques used in analysis or the forms used in reporting, but from the degree to which it assists in the attainment of excellence in planning, resource allocation, and management of operations.

The basic objectives of a P.P.B. system are:

(a) to define jurisdictional objectives clearly and to relate them to defined needs and goals;

(b) to stimulate the in-depth analysis of all existing and proposed new programs in terms of their costs and benefits;

(c) to link the planning and budgeting process through the annual review of multiple year plans;

(d) to measure actual and planned performance; and

(e) to provide a systematic way of integrating all of these elements in order to arrive at a more effective system for the allocation and management of resources.

The adoption of P.P.B. systems by more and more governments usually means that those agencies which advise, report to, or rely on governments must begin to think in terms of P.P.B. Their criteria for evaluation must closely approximate the needs of governments for input into the P.P.B. system. The main criticism leveled against state planning is that the state has failed to take advantage of new management technology (P.P.B. systems, information systems and analysis, modeling and simulating). If this is true, then the following bibliography should be a worthwhile step towards informing state agencies of the availability and wide scope of P.P.B. systems and its applications.

PPBS BIBLIOGRAPHY

Alfandary-Alexander, Mark, comp. Analysis for planning programming budgeting; 2d Cost-Effectiveness Symposium; sponsored by the Washington Operations Research Council. Potomac, Maryland: 1968. 174 p.

American Society of Planning Officials. "PPB System: Tool for Breakthrough." Planning, 1967, p. 81-99. 19 p.

Bales, Carter F. "Implementing PPBS in the city of New York." Municipal Finance Officers Association, Special Bulletin series, 1969C. 1969. 8 p.

Balls, H.R. "The Budget and Its Function." Cost and Management, October 1967, p. 25-28. 4 p.

Balls, H.R. "The Budget and the National Accounts." Cost and Management, November 1967, p. 28-31. 4 p.

Banks, Robert and Arnold Kotz. "The Program Budget and the Interest Rate for Public Investment." Public Administration Review, December 1966, p. 283-292. 10 p.

Bateman, Worth. "An Application of Cost-Benefit Analysis to the Work-Expense Program." American Economic Review, May 1967, p. 80-90. 11 p.

Bateman, Worth. "Assessing Program Effectiveness." Welfare in Review, 6: 1-10, January-February, 1968. 10 p.

Bauer, Raymond A., comp. Social Indicators. Cambridge, Massachusetts: M.I.T. Press, 1966. 357 p. (American Academy of Arts and Sciences. Technology, Space, and Society, 2).

Bayer, Sylvan. "PPBS - A New Management Tool." Federal Accountant, 17: No. 4, p. 82-90. 9 p.

Benson, E.J. "Budget Breakthrough: Adoption of PPB." Canadian Tax Journal, May-June, 1968, p. 161-167. 7 p.

Berg, R.D: "Systems Help Educational Planning and Control." Journal of Systems Management, 21: 8-14, December 1970. 7 p.

Bierman, Harold, Jr. "A Use of Probability and Statistics in Performance Evaluation." Accounting Review, July 1961, p. 409-417. 9 p.

Blatt, Donald B. "A local government approach to a planning-programming-budgeting system." Planning, 1967, p. 81-87. 7 p.

Blick, Larry N. "An approach to implementing PPB." Municipal Finance, 41: 148-154, May 1969. 7 p.

Böhret, Carl. Entscheidungshilfen für die Regierung. Modelle, Instrumente, Probleme. Köln und Opladen : Westdeutscher Verlag, 1970.

(Apart from the discussion of the U.S. PPB system, which is backed up by an own empirical study, the book contains an interesting discussion of a number of other techniques for government decision making and a conceptual model of a "political rationality").

Bolton, W.B. "Government Finance Statistics and Their Relevance to Program Planning Budget Systems." Canadian Statistical Review, Vol. 43, August 1968, p. ii-v. 4 p.

Borus, Michael E. "A Benefit-Cost Analysis of the Economic Effectiveness of Retraining the Unemployed." Yale Economic Essays, Fall 1964, p. 371-429. 49 p.

Borut, Donald J. "Implementing PPBS: a practitioner's viewpoint" in John P. Crecine (ed.). Financing the Metropolis, Beverly Hills: Sage Publications, 1970. (Urban Affairs Annual Review, Vol. 4), p. 285-310. 26 p.

Botner, Stanley B. "The Bureau of the Budget: Efforts to Integrate PPB and Traditional Appropriation Brasses." Federal Accountant, Summer 1970, p. 108-113. 6 p.

Botner, Stanley B. "Four Years of PPBS: an appraisal." Public Administration Review, July/August, 1970, p. 423-431. 9 p.

Botner, Stanley B. "Implementing PPBS: Bureau of the Budget; Integrated System Development Effort." Federal Accountant, 18: 95-101, June 1969. 7 p.

Botner, Stanley B. "Municipal Budgeting: problems and developments," Business and Government Review, March-April, 1969, p. 14-26. 13 p.

Botner, Stanley B. "The States and PPBS." Budgeting, July/August, 1968, p. 17-21. 5 p.

Bridgeman, J.M. "Planning Programming Budgeting Systems." O & M Bulletin, Fall 1969, p. 167-178. 12 p.

Bridgeman, J.M. "Planning-Programming-Budgeting Systems II." O & M Bulletin, 25: 16-27, 1970. 12 p.

Bromberg, Erik. "Simplified PPBS for the Librarian" prepared for The Dollar Decision Pre-Conference Institute, sponsored by The Library Administration Division of the American Library Association at Dallas, Texas, June 17-19, 1971. 12 p.

Bundesministerium der Verteidigung (BRD). Bundeswehrplanung im Bundesministerium der Verteidigung. Erlab vom 19.9.1968.

(This is still the basis of the German defense planning system which is being restructured along PPB lines. It is going to be replaced by the new "Planungserlab" which is due to appear late this fall).

Burkhead, Jesse. Government Budgeting. New York: Wiley, 1966. 498 p.

Burns, Leland S. "Cost-Benefit Analysis of a Social Overhead Project for Regional Development." Regional Science Association Papers; 1965 (Vol. 16), p. 155-161. 7 p.

Byers, Barbara B. "PPB - An Aid to Decision-Making." in Special Libraries Association, Toronto Chapter, Bulletin, Vol. 31, 1971, p. 12-19. 8 p.

Byron, R.J. "Reviewing a Program Budget System in a Municipality." Journal of Systems Management, 22: 33-9, April 1971. 7 p.

Calland, R.H. "Performance Budgeting." Municipality, (Wisconsin), 62: 59-60 plus, March 1967. 3 p.

Canada. Department of Finance. Treasury Board. Financial Management in departments and agencies of the government of Canada. Ottawa: 1966. 71 p.

Canada. Department of Manpower and Immigration. "Program Budgeting in the Department of Manpower and Immigration. (Paper presented to Senior Officers Conference, Province of Ontario, Guild Inn, Toronto, May 18, 1967). Processed. 35 p.

Canada. Treasury Board. Planning, Programming, Budgeting Guide. Ottawa: Queen's Printer, July 1968. 57 p.

Canada. Treasury Board. Management Improvement Branch. Expenditure coding. August 4; 1966. (Proceeded). 27 p.

Canada. Treasury Board. Management Improvement Branch. Planning and the program review; a guide for program officers. Ottawa, n.d. 58 p.

Capron, William M. "PPB and State Budgeting." Public Administration Review, March/April, 1969, p. 155-159. 5 p.

Chartrand, Robert L., et al. Information Support, Program Budgeting, and the Congress. Spartan, 1968. 231 p.

hase, Samuel B., Jr. Problems in public expenditure analysis. Washington, D.C.: Brookings Institution, 1968. 269 p. tables.

Churchman, C.A. and A.H. Schainblatt. "PPB: How Can It Be Implemented?" Public Administration Review, March/April, 1969, p. 178-189. 12 p.

"Civil Service: all do PAR." Economist, 238-39, February 6, 1971.

Cleland, David I. and W.R. King. "Planning-Programming-Budgeting and Systems Analysis." in their Systems Analysis and Project Management, New York: McGraw-Hill, 1968, p. 113-132. 20 p.

Committee for Economic Development. Budgeting for National Objectives. New York: 1966. 65 p.

Congress and the Federal Budget, Washington, D.C.: American Enterprise Institute for Public Policy Research, 1965. 209 p.

Conseil d'Europe. Prospective et Planification à long terme. Planning Programming Budgeting System (le PPBS). Strassbourg, le 21 janvier 1970 (par M. Gerard Gastaud).

Cookingham, L.P. "Make Performance Budgeting Practical." American City, 72: 141-42, May 1967. 2 p.

Cotton, John F. "Planning-Programming-Budgeting Systems for Local Government." Municipal Finance, 41: 26-33, August 1968. 8 p.

Crihfield, Brerard and George A. Bell. "Budgeting for State and Local Government Services." American Academy of Political and Social Sciences. Annals, September 1968, p. 31-38. 8 p.

Crowe, Eugene B. and Delmas D. Ray. "Planning-Programming-Budgeting Systems." Economic Leaflets, Vol. 28, No. 5, 6, 7, May-July, 1969. 12 p.

Cutt, James. "Efficiency and Effectiveness in Public Sector Spending: The Programme Budgeting Approach." Canadian Public Administration, Winter 1970, p. 396-426. 31 p.

Davis, Otto A., M.A.H. Dempster and Aaron Wildavsky. "A Theory of the Budgeting Process." American Political Science Review, 40: 323-341, September 1966. 19 p.

Dean, Alan L. "Planning, programming and budgeting in the United States." Management in Government, 1: 67-80, October-December, 1969. 14 p.

Denhardt, Robert B. and David F. Paulsen. "PPBS and the cities." Managerial Planning, May/June, 1969, p. 13-17. 5 p.

Don Vito, P.A. Annotated bibliography of systems cost analysis. RAND, March 1967. (REM-4848-1-PR), p. 24-32. 9 p.

Dougharty, L.A. "Developing Corporate Strategy through planning, programming, and budgeting." Long Range Planning, Vol. 2, No. 3, March 1970, p. 24-29. 6 p.

Downs, Anthony. "PPBS and the evolution of planning." Planning, 1967, p. 91-99. 9 p.

Drew, Elizabeth. "HEW Grapples with PPBS." Public Interest, p. 9-29, Summer 1967. 21 p.

Dror, Yehezkel. "PPB and the Public Policy-Making System." Public Administration Review, March/April, 1969, p. 152-154. 3 p.

Dyer, J.S. "Use of PPBS in a public system of Higher Education: is it cost-effective?" Academic Management Journal, 13: 285-99, September 1970. 15 p.

Eckstein, Otto. Water-resource-development: the economics of project evaluation. Cambridge, Massachusetts: Harvard University Press, 1958, 1965. 300 p. illus. (Harvard Economic Studies, 104). Bibliography, p. 283-290.

Eghtedari, Ali and Frank Sherwood. "Performance budgeting in Los Angeles." Public Administration Review, Spring 1960, p. 63-69. 7 p.

"Elements of program budgeting." Journal of Accountancy, 131: 84-6, April 1971. 3 p.

Elkin, Robert. "Applying PPBS to Public Welfare." Management Controls, 26: 237-242, November 1967. 6 p.

Else, Peter. Public expenditure, parliament and PPB. London: Political and Economic Planning, November 1970. 92 p. (Its Broadsheet, 522).

Engel, E.L. "Performance Reports Used with Performance Budgets (Albuquerque, New Mexico)." Public Management, 44: 63-64, March 1962. 2 p.

Ervien, M.G. "Performance Budgeting, Its Value and Shortcomings." American City, 72: 129, March 1957. 1 p.

Escarraz, Donald Ray. "PPBS and the National Government: Alternative approaches." National Tax Journal, 21: 130-140, 1968. 11 p.

Exton, Elaine. "Here's how HEW Department applies Planning-Programming-Budgeting System." American School Board Journal, 153: 5-7 plus, December 1966. 4 p.

Exton, Elaine. "State Legislations Urged to Install Planning-Programming-Budgeting System." American School Board Journal, February 1967, p. 13-16. 4 p.

Faulkner, Paul J. "A Systems Approach to Programming." Certified General Accountant, October 1967, p. 19-27. 9 p.

Fazar, Willard. "Program Planning and Budgeting Theory." Special Libraries, September 1969, p. 423-433. 11 p.

Feldstein, Martin S. "Opportunity Cost Calculations in Cost-Benefit Analysis." Public Finance, 19: 117-141, 1964. 25 p.

Fisher, G.H. "The World of Program Budgeting." Long Range Planning, 2: 50-80, September 1969. 11 p.

Fletcher, T.W. "A New Look at Budgeting; Budgetary Control and Evaluation." Public Management, 46: 26-28, February 1964. 3 p.

Forrester, Jay W. Industrial dynamics. Cambridge, Massachusetts: M.I.T. Press, 1961. 464 p.

Fowke, Donald V. "PPB for Provinces." Canadian Public Administration, 12: 72-77, 1969. 6 p.

Fox, Thomas G. An Introduction to Planning-Programming-Budgeting Systems (PPBS). Pennsylvania State Institute for Research on Human Resources, February 28, 1967. (Processed). 14 p.

Gabis, Stanley T. Mental Health and Financial Management: some dilemmas of program budgeting. East Lansing: Michigan State University, 1960. 68 p.

George Washington University, Washington, D.C. Planning programming budgeting for city state county objectives: P.P.B. notes. Washington, D.C.: June 1968 - Series.

George Washington University, Washington, D.C. What is P.P.B.? Planning programming budgeting for city state county objectives. Washington, D.C.: January 1967. 8 p.

Gillhespy, N.R. "The Tay Road Bridge: case study in cost-benefit analysis." Scottish Journal of Political Economy, 15: 167-183, 1968. 17 p.

Gordon, Jay H. "Accounting problems of Planning-Programming-Budgeting Systems." Municipal Finance, 41: 122-126, February 1969. 5 p.

Gorham, William. "Notes of a Practitioner." Public Interest, Summer 1967, p. 4-8. 5 p.

Gorham, William. "Sharpening the knife that cuts the Public Pie." Public Administration Review, 28: 236-241. 6 p.

Graese, C.F. "Program Budgeting for Government." Management Controls, September 1967, p. 201-202. 2 p.

Granados, Hermenegildo F. "Budget Administration in the Philippines." Federal Accountant, 14: 19-34, Spring 1965. 16 p.

Greaney, Walter T. A Program Budget for Massachusetts. Amherst: Bureau of Government Research, University of Massachusetts, 1963. 36 p.

Greenhouse, Samuel M. "A 'Distributed Output' Concept for the Planning-Programming-Budgeting Systems." Personnel Administration, July-August, 1967, p. 35-41. 7 p.

Greenhouse, Samuel M. "The Planning-Programming-Budgeting System; rationable, language, and idea-relationships." Public Administration Review, December 1966, p. 271-277. 7 p.

Gross, Bertram M. "The New Systems Budgeting." Public Administration Review, March/April, 1969, p. 113-137. 25 p.

Hamelman, P.W. "Missions, matrices, and university management." Academic Management Journal, 13: 35-47, March 1970. 13 p.

Hamill, Harold L. "Numbers Game." Library Journal, 90: 3563-66, September 15, 1965. 4 p.

Hammond, Richard J. "Convention and Limitation in Benefit-Cost Analysis." National Resources Journal, April 1966, p. 195-222. 28 p.

Hansmeyer, K.H. (ed.). Das Rationale Budget. Köln:Kölner Universitatsverlag, 1971.

(The volume contains articles about the "optimal budget", cost-benefit-analysis, anticyclical budgeting, PPBS, and the German version of middle range financial planning. Best is undoubtedly the article about CBA, which reveals the relationship between the definition of costs and benefits and the power basis of the participants of the decision-making process).

Harper, Edwin L., et al. "Implementation and use of PPB in Sixteen Federal Agencies," by Edwin Harper, Fred Kramer and Andrew House. Public Administration Review, 29: 623-632, 1969. 10 p.

Harrill, E. Reece. "A financial management system for local governments." Management Controls, 17: 27-34, February 1970. 8 p.

Harrill, E. Reece. "Performance budgeting and accounting." Federal Accountant, Spring 1965, p. 35-58. 24 p.

Harris, Derek D. "Performance measurement in government." Optimum, 1: 52-61, 1970. 10 p.

Harris, R.L. "Performance Budgeting and the California Budgetary Process." News Notes of California Libraries, 54: 222-29, Spring 1959. 8 p.

Hatry, Harry P. Program planning for state, county, city, by Harry P. Hatry and John F. Cotton. Washington, D.C.: George Washington University, January 1967. 72 p.

State-local finances project of George Washington University.

Hatry, Harry P. "Status of PPBS in Local and State Governments in the United States." Policy Sciences, 2: 177-189, 1971. 13 p.

Heiman, Grover. "Defense reverses PPB process." Armed Forces Management, February 1970, p. 43-45. 3 p.

Held, Virginia. "PPBS Comes to Washington." Public Interest, Summer 1966, p. 102-115. 14 p.

Henderson, William L. "Do Budgets Report Public Spending? The Line-Item Budget is Standard Procedure for Most Governments from Federal to Local; But Recent Experimentation by Certain States and Cities with a Program Budget has Opened New, Workable Vistas in the Budgeting Business." Public Management, 44: 26-28, February 1964. 3 p.

Hendry, Marion L. and Willis Proctor. "New York State's Performance Budget Experiment." Public Administration Review, Spring 1960, p. 69-74. 6 p.

Herschel, Federico J. and Juan J. Santieri. "Methodology of the National Economic Budget: a recent undertaking in Argentina." Economic Bulletin of Latin America, 11: 111-34, October 1966. 24 p.

Heuston, W.G. and G. Ogawa. "Observations on the Theoretical Basis of Cost-Effectiveness." Operations Research, 1966, p. 242-266. 25 p.

Highway Research Record, #288, 1969. Five Papers on PPB Systems, relating to transportation. 21 p.

Hinrichs, Harley H. Program budgeting and benefit-cost analysis: cases, text and readings, by Harley H. Hinrichs and Graeme M. Taylor. Pacific Palisades, California: Goodyear, 1969. 420 p.

Hirsch, Werner Z. "Toward Federal Program Budgeting." Public Administration Review, December 1966, p. 259-269. 11 p.

Hitch, Charles J. Decision Making for Defense. Berkeley, California: University of California Press, 1965, Chapter 2 and 3, p. 21-78. 58 p.

Hitch, Charles J. The economics of defense in the nuclear age, by Charles J. Hitch and Roland N. McKean. New York: Atheneum, 1960. 422 p.

Hitch, Charles J. "Program Budgeting." Datamation, September 1967, p. 37-40. 4 p.

Hitch, Charles J. "Program budgeting in a university setting." Tax Digest (California) 46: 13-19, 1968. 7 p.

Horton, F.W., Jr. "Building block approach: key to federal management systems?" Journal of Systems Management, 22: 38-41, October 1971. 4 p.

Hovey, Harold A. The Planning-Programming-Budgeting Approach to Government Decision-Making. New York: Praeger, 1968. 264 p.

Howard, Edward N. "Toward PPBS in the Public Library." American Libraries, April 1971, p. 386-393. 8 p.

Ijiri, Y., J.C. Kinard and F.B. Putney. "An integrated evaluation system for budget forecasting and operating performance with a classified budgeting bibliography." Journal of Accounting Research, 6: 1-28, Spring 1968. 29 p.

"Is PPBS All That Good?" Armed Forces Management, April 1968, p. 32-33. 2 p.

Ivarsson, Sven Ivar. Auswirkungen der Programmhaushaltsplanung in Schweden. (Mimeographed manuscript of a lecture). Bruges, Belgium: College d'Europe, Seminaire d'administration publique, n.d.

(Report about the methods and the impact of program budgeting in the Swedish administration).

Jacqmotte, J.P. "Tentative Comparative Study of RCB in France and PPBS in Belgium." International Review of Administrative Sciences, 36: 47-55, 1970. 9 p.

Jahn, Julius A. "The Statistical Design and Analysis of an Experiment to Measure the Effectiveness and Costs of a Health and Welfare Program." American Statistical Association. Social Statistics Section. Proceedings, 1965, p. 42-50. 9 p.

Jamieson, D.M. "Program planning and budgeting in the Federal government." Canadian Operational Research Society. Journal, 7: 116-124, 1969. 9 p.

Jantsch, Erick (ed.). Perspectives of Planning. Paris: O.E.C.D., 1969. 527 p.

"Proceedings of the O.E.C.D. working symposium on Long-Range Forecasting and Planning." Bellagio, Italy: October 27-November 2, 1968.

Jenkins, Harold R. "The ABC's of PPB." Library Journal, October 1, 1971, p. 3089-3093. 5 p.

Jernberg, James E. "Information change and congressional behavior: a caveat for PPB Reformers." Journal of Politics, 31: 722-740, August 1969. 19 p.

Jochimsen, Reimut. "Zum Aufbau und Ausbau eines integrierten Aufgabenplanungssystems und Koordinierungssystems der Bundesregierung," in: Bulletin des Presse- und Informationsamtes der Bundesregierung, No. 97/1970, p. 949 ff.

(In this article, J. expresses the need for an integrated goal-oriented system of planning and co-ordination for the federal government in Germany. Jochimsen is head of the planning division of the Bundeskanzleramt).

Johnson, A.W. "PPB and Decision-Making in the Government of Canada." Cost and Management, March-April, 1971, p. 12-19. 8 p.

Johnson, Robert L. "Assessing the Future." Municipal Finance, 41: 163-165, May 1969. 3 p.

Jones, Roger H. "Program Budgeting: Fiscal Facts and Federal Fancy." Quarterly Review of Economics and Business, Vol. 9, Summer 1969, p. 45-57. 13 p.

Kabir, A.K.M. "Performance Budgeting: its application in Pakistan." International Review of Administration Sciences, 33: 345-355, 1967. 11 p.

Kammerer, Gladys M. Program Budgeting: An Aid to Understanding. Civil Information Series No. 38; Gainsville: Public Administration Clearing Service of the University of Florida, 1961. 27 p.

Karsh, Norman. "PPBS: For Better or For Worse." Budgeting, 1968. 4 p.

Keller, John E. "Program Budgeting and Cost-Benefit Analysis in Libraries." College and Research Libraries, p. 156-160, March 1969. 6 p.

Kelso, Maurice M. "Public Land Policy in the Context of PPB Systems" plus discussion. American Journal of Agricultural Economics, 50: 167-184, December 1968. 17 p.

Klepak, Daniel. Performance Budgeting for Hospitals and Health Departments. Chicago: Municipal Finance Officers Association, 1956. 6 p.

Knapp, George C. Hierarchial Distinctions in PPB Analysis. (Remarks before the Institute for State Budget Directors, National Bridge State Park, Kentucky, September 19, 1967). (Processed). 16 p.

Koch, Vernon E. "Cincinnati's Budget." Public Administration Review, Spring 1960, p. 79-85. 7 p.

Koch, Vernon E. Progress in the Budgeting Process During the Past Decade. Chicago: Municipal Finance Officers Association, 1960. 12 p.

Koelle, H.H. "The Application of Simulation in Aiding Decisions," in Analysen und Prognosen, 3, 1971, 1, p. 14-17. 4 p.

Koelle, H.H. "SEPP: Systematische Entscheideungsvorbereitung politischer Probleme." in: Analysen und Prognosen, 1, July 1969, 4, p. 12-19. 8 p.

(The paper presents a concept for the systematization of the decision-making process through scientific preparation).

Koelle, H.H. "Zur Problematik der Zielfindung und der Zielanalyse." in: Analysen und Prognosen, 3, 1971, 4, p. 13-16. 4 p.

(Problems of goal-finding and goal-analysis. Professor Koelle is Director of the Centre Berlin for Future Research (ZBZ) which is developing techniques for the improvement of government decision-making).

Ladenson, A. "Budget Control of Book Purchases and Binding Expenditures in Large Public Libraries." Library Resources and Technical Service, 4: 47-58, Winter 1960. 12 p.

Laich, Katherine. "Preparing the Library's Performance Budget." California Librarian, 20: 180-86, July 1959. 7 p.

Laking, R., tr. "A New Approach to Financial Management." New Zealand Journal of Public Administration, 32: 39-49, 1969. 11 p.

Lee, Sang M. "Program budgeting: a tool for management." Georgia Business, 29: 1-5, September 1969. 5 p.

Levine, Abraham S. "Cost-Benefit Analysis and Social Welfare." Welfare in Review, February 1966, p. 1-11. 11 p.

Levine, Abraham S. "Cost-Benefit Analysis of the Work Experience Program." Welfare in Review, August-September, 1966, p. 1-9. 9 p.

Levy, Michael. "Planning-Programming-Budgeting: government's new tool for improving efficienty." Conference Board Record, May 1967, p. 41-43. 3 p.

Lish, Monty C. "Organizing for a New Approach to Budgeting." Municipal Finance, 41: 155-162, May 1969. 8 p.

Little, P.L. and C.L. Mitchell. "The Program Budget: Planning and Control for the Public Sector." Cost and Management, September 1967, p. 1-5. 5 p.

Luther, Robert A. "PPBS in Fairfax County: a practical experience." Municipal Finance, 41: 34-42, August 1968. 9 p.

Lyden, Fremont J. and E.G. Miller, (eds.). Planning programming budgeting: a systems approach to management. Chicago. Markham, 1967. 443 p.

Maass, Arthur. "Benefit-Cost Analysis: its relevance to public investment decisions." Quarterly Journal of Economics, May 1966, p. 209-226. 19 p.

Macdonald, B.A. Program budgeting; a speech given to IPAC, September 4, 1968. 39 p.

MacDonald, John Stuart. "Benefit-Cost Analysis of Social Welfare Programs." Industrial Relations Research Association. Proceedings, 1964, p. 186-194. 9 p.

Macleod, Roderick K. "Program budgeting works in non profit institutions." Harvard Business Review, Vol. 49, September-October, 1971, p. 46-56. 11 p.

"Management Accounting for Government." Cost and Management, September 1967-February 1968. 27 p.

The Management Philosophy of PPBS. Speech, Budget Directors' Institute, September 18, 1967. (Processed). 13 p.

Martain, James W. The Background of State Program Budgeting (PPB). No date. (Processed). 16 p.

Martin, Joe. "Our Horse and Buggy Government Needs A Systems Approach." Canadian Business, February 1971, p. 34-36, 45. 4 p.

Massey, Robert J. "Program packages and the Program Budgeting in the Department of Defense." Public Administration Review, March 1963, p. 30-34. 5 p.

Maybury, C. "Performance Budgeting for the Library." ALA Bulletin, 55: 46-53, January 1961. 8 p.

McAnally, A.M. "Budgets by Formula." Library Quarterly, 33: 159-71, April 1963. 13 p.

McCullough, J.D. Cost analysis for planning-programming-budgeting-cost-benefit studies. Santa Monica, California: RAND, 1966. 64 p.

McGilvery, Francis E. "A Management Accounts Structure." Public Administration Review, December 1966, p. 277-283. 7 p.

McKean, Roland N. Efficiency in government through systems analysis, with emphasis on water resources development. New York: Wiley, 1966. 336 p.

McLoon, Eugene P. Long-range revenue estimation, by Eugene P. McLoon, Gabrielle C. Lupo and Selma J. Mushkin, Washington, D.C.: George Washington University, October 1967. 122 p.

McNicoll, J.A. "Programme Planning and Operation Analysis." Canadian Chartered Accountant, October 1967, p. 277-279. 3 p.

Meier, Robert C. Simulation in business and economics, by Robert C. Meier, William T. Newell and Harold L. Pazer. Englewood Cliffs, New Jersey: Prentice-Hall; 1969. 369 p. illus.

Contains bibliographies.

Meiszer, Nicholas M. "PPBS in Dayton, Ohio." Municipal Finance, 41: 127-131, February 1969. 5 p.

Millward, Robert E. "PPBS; Problems of Implementation." American Institute of Planners. Journal, March 1968, p. 88-94. 7 p.

Morse, Elsworth H., Jr. "The Planning-Programming-Budgeting System and the Congress." Federal Accountant, September 1969, p. 22-36. 15 p.

Mosher, Frederick C. "Limitations and Problems of PPBS in the States." Public Administration Review, March/April, 1969, p. 160-167. 8 p.

Mosher, Frederick C. Program Budgeting: Theory and Practice. New York: Stratford Press, 1954.

Mowitz, Robert J. The design and implementation of Pennsylvania's planning, programming, budgeting system. University Park: Pennsylvania State University, Institute of Public Administration, 1970. 72 p.

Murphy, Joseph S. "Planning, Programming and Budgeting: the quiet revolution in government planning techniques." Management Review, April 1968, p. 4-11. 8 p.

Mushkin, Selma J. Functional federalism: grants-in-aid and P.P.B. systems, by Selma J. Mushkin and John F. Cotton. Washington, D.C.: George Washington University, 1969. 208 p.

Mushkin, Selma J. "PPB for the Cities: problems and the next steps" in John P. Crecine (ed.). Financing the Metropolis, Beverly Hills: Sage Publications, 1970 (Urban Affairs Annual Review, Vol. 4), p. 247-284. 38 p.

Mushkin, Selma J. "PPB in Cities." Public Administration Review, March/April, 1969, p. 167-178. 12 p.

Mushkin, Selma. The search for alternatives: program options in a P.P.B. system, by Selma Mushkin and Brian Herman. Washington, D.C.: George Washington University, October 1968. 66 p.

State-local finances project, George Washington University.

Mushkin, Selma J. and James R. Cleaveland. Planning for Educational Development in a Planning, Programming, Budgeting System. Washington, D.C.: National Education Association, 1968. 46 p.

Nagel, Albrecht. "Das nationale Zielsystem der Bundesrepublik Deutschland, 1957-1969," in: Analysen und Prognosen, 1, 1969, 6, p. 18-27.

(In this very interesting article, N. describes and analyses the national goals system of the Federal Republic under three different aspects (1) declaratory goals of the government, (2) realized goals of the government, and (3) intended goals of the population).

National Association of State Budget Officers. Institute for Budget Directors. State Program budgeting: possibilities and limitations, sponsored by Office of Development Services and Business Research, University of Kentucky, Kentucky Department of Finance and National Association of State Budget Officers, Council of State Governments. Chicago, 1968. 136 p.

Held at Natural Bridge State Park, September 17-22, 1967.

National Industrial Conference Board. The Federal Budget; its impact on the economy. New York, 1968, p. 29-34. 6 p.

National Planning Association. Board of Trustees and Standing Committees. Program appraisal in the Federal government: a statement. 1965. 10 p.

New York. (State) Executive Department, Division of the Budget. Office of Planning Co-ordination. Guidelines for planning-programming-budgeting. Albany, New York, 1968. 75 p.

Nichols, D.B. "PPBS: a challenge to non-profit accounting." Management Accounting, 51: 12-13, November 1969. 2 p.

Novick, David. "The Federal budget as a business indicator." Harvard Business Review, May-June, 1960, p. 64-72. 9 p.

Novick, David. "Long-Range Planning Through Program Budgeting." Business Horizons, 12: 59-65, February 1969. 7 p.

Novick, David. "The origin and history of program budgeting." California Management Review, 11: 7-12, Fall 1968. 6 p.

Novick, David. Which program do we mean in "program budgeting"? Santa Monica, California: Rand Corporation, May 12, 1954. (Clearinghouse, AD 422827). 31 p.

Novick, David (ed.). Program Budgeting; program analysis and the Federal budget. Cambridge, Massachusetts: Harvard University Press, 1965. 382 p.

Oliphant, Peter. "Program definition in PPBS", Business Quarterly, 35: 72-77, Summer 1970. 6 p.

Ontario. Legislative Assembly. Budget-Statement of the Honourable Charles MacNaughton, Treasurer of Ontario, in the Legislative Assembly of Ontario, Tuesday, March 12, 1968, on moving the House into Committee of Ways and Means. Toronto: Queen's Printer, 1968, p. 63, 65-67. 4 p.

Ontario. Legislative Assembly. Debates of 27th Legislative, 4th Session, May 31, 1966, No. 125, p. 4095-4125. 32 p.

Ontario. Treasury Board. Development of performance indicators for management planning and control. May 23, 1968. (Processed). 9 p.

Ontario. Treasury Board. Effective management through P.P.B.S. Toronto, 1969. 68 p.

Ontario. Treasury Board. Program Budgeting -- a discussion paper for the Continuing Committee on Fiscal and Economic Matters. May 1968. (Processed). 14 p.

Ontario. Treasury Department. Opening Statement of Honourable C.S. MacNaughton at the Seminar on Program Budgeting, Lord Simcoe Hotel (Toronto), June 7, 1968. 5 p.

Operations Research Industries Ltd. The Department of Highways, Ontario; planning-programming-budgeting-system. Ottawa, August 1969. 1 Vol. (PPBS Management Study - Final Report).

Optner, Stanford L. Systems Analysis for Business and Industrial Problem Solving. Englewood Cliffs, New Jersey: Prentice-Hall, 1965. 116 p.

Orcutt, Guy H. and Alice G. Orcutt. "Incentive and Disincentive Experimentation for Income Maintenance Policy Purposes." American Economic Review, September 1968, p. 754-772. 19 p.

Organisation for Economic Co-operation and Development. Budgeting, programme analysis and cost-effectiveness in educational planning. Paris, October 1968. 304 p.

Orkand, Donald S. An Overview of Planning, Programming and Management. Silver Spring, Maryland: Operations Research, Inc., 1967, (paper presented at Senior Executive Conference on Planning, Programming, and Management, Ottawa, April 13, 1967). 31 p.

Ottawa cree un comité interministeriel pour étudier le PPB. Commerce 72: 81, Mai 1970.

Otten, Alan L. "New-look Budget? U.S. agencies now will weigh program costs against likely benefits." Wall Street Journal, 169: 1 plus, April 28, 1966. 2 p.

"PPB: Callaghan's good deed." Economist, 232: 21 plus, July 19, 1969. 2 p.

"PPB: what's school for?" Economist, 235: 20, April 25, 1970. 1 p.

PPBS and other budget applications. Municipal Finance, 41: 148-176, May 1969. 29 p.

"PPBS: Has the Theory Worked? A Symposium." Public Administration, Spring 1960, p. 63-85. 25 p.

"PPBS: Its Scope and Limits." Public Interest, Summer 1967, p. 3-48. 46 p.

"PPBS - a new approach to government spending." Banking, 61: 39 plus, February 1969.

"PPBS Reexamined: Development, Analysis, and Criticism." Public Administration Review, March/April, 1969, p. 111-202. 92 p.

"PPBS: A Symposium." Public Administration Review, December 1966, p. 243-310. 68 p.

Page, David A. "The Federal Planning-Programming-Budgeting System." American Institute of Planners, Journal, July 1967, p. 256-259. 4 p.

Performance Budgeting and Unit Cost Accounting for Governmental Units: Discussions During a Workshop Session. Accounting Publication Series Number 11-2, Chicago: Municipal Finance Officers Association, May 1, 1954. 20 p.

Performance Budgeting for Libraries. Chicago: Municipal Finance Officers Association, 1954. 12 p.

"Performance Reports used with Performance Budgets." Public Management, March 1962, p. 63-64. 2 p.

Perkins, Joseph A., Tr. et al. "PPBS for education", by Joseph A. Perkins, Tr., Edward M. Cross and N.A. Sicuro. Management Controls, 17: 23-26, February 1970. 4 p.

Peterson, Harry N. "Performance Budgeting, Work Measurement, and the Public Library." Wilson Library Bulletin, 27: 620-23, April 1953. 4 p.

Le Planning Programming Budgeting System et son introduction dans l'administration de l'Etst. Bruxelles: Institut Administration-Universite, 1969.

(This is the official presentation of the Belgian version of the PPBS which was initiated in 1966. It differs in various aspects from the American model, especially in the method of introduction. The "Institut Administration-Universite", Bruxelles: 53 Rue, de la Concorde, is charged with promoting the introduction of PPBS in the Belgian administration and has published a number of other significant papers on the subject).

Planning-Programming-Budgeting Systems: a collection of bibliographies collated by the Staff of the Treasury Department Library, 1968 -

Planning-Programming-Budgeting Systems. Special readings collated by the Staff of the Treasury Department Library, 1968 -

Posner, Ben. "Planning-Programming-Budgeting: a Financial Management approach." Federal Accountant, Summer 1966, p. 9-21. 13 p.

Prest, A.R. and R. Turvey. "Cost-Benefit Analysis: a survey." Economic Journal, 75: 683-735, December 1965. 53 p.

Price, Paxton P. "Budgeting and Budget Control in Public Libraries." Library Trends, 11: 402-12, April 1963. 11 p.

Price, Paxton P. Chapter 7, "Financial Administration" in Local Public Library Administration, edited by Roberta Bowler. Chicago: International City Managers' Association, 1964, p. 119-147. 29 p.

"Program Budgeting for Police Departments." Yale Law Journal, 76: 822-38, March 1967. 17 p.

Quade, E.S. Systems analysis techniques for planning-programming-budgeting. Santa Monica, California: RAND, 1966. 31 p.

Ray, Delmas D. and W.W. Kenke. "Benefit-Cost Analysis: A Challenge for Accountants." Management Accounting, August 1970, p. 7-14. 8 p.

Reynolds, John W. and Walter G. Hollander. "Program Budgeting in Wisconsin." State Government, 37: 210-15, 1964. 6 p.

Robb, William. "Techniques of the Treasury Board." (PPBS). Canadian Business, 42: 7-8, August 1969. 2 p.

Roberts, Ralph S. "USDA's Pioneering Performance Budget Experiment." Public Administration Review, Spring 1960, p. 74-78. 5 p.

Rochford, Joseph L. "Budgeting for Parks and Recreation." Municipal Finance, 41: 166-171, May 1969.

Rosenzweig, H. Problems associated with measurement and evaluation of performance in connection with state programs and agencies. Rand Corporation, no date. (Processed). 11 p.

Ross, N.G. "Toward better control of federal government expenditures." Canadian Chartered Accountant, February 1969, p. 100-103. 4 p.

Ross, William B. "Some perspective on Federal PPBS." Planning, 1967, p. 87-91. 5 p.

Rowen, Henry S. "PPBS: What and Why." Civil Service Journal, January-March, 1966, p. 5-9. 5 p.

Sage, William G. "PPBS and accounting in San Diego", by William G. Sage and James J. Holodnak. Municipal Finance, 41: 134-137, February 1969. 4 p.

Scattergood, Roger. "An Outline of Steps in Programming Capital Improvements by Local Governments." Jersey Plans, 15: 30-7, Summer 1964. 9 p.

Schelling, Thomas C. "PPBS and Foreign Affairs." Public Interest, No. 10, Winter 1968, p. 26-36. 11 p.

Schick, A. "The Road to PPB: the stages of budget reform." Public Administration Review, December 1966, p. 243-258. 16 p.

Schick, Allen. "Systems Politics and Systems Budgeting." Public Administration Review, March/April, 1969, p. 137-151. 15 p.

Schultze, Charles L. The politics and economics of public spending. Washington, D.C.: Brookings Institution, 1968. 143 p.

Seidman, David R. PPB in HEW: Some Management Issues. American Institute of Planners - Journal, 36: 168-178, May 1970. 11 p.

Sewell, W.R.D., et al. Guide to benefit-cost analysis. Ottawa: Queen's Printer, 1965. 49 p.

Simmons, Edwin H., USMC. "Planners, Programmers, and Budgeteers." Federal Accountant, September 1969, p. 37-53. 17 p.

Sisson, Roger L., et al. "The Project Concept in Planning, Programming and Budgeting." Socio-Economic Planning Sciences, 4: 239-261, 1970. 23 p.

Smithies, A. Conceptual Framework for the program budget. (From David Novick, Program Budgeting - 1965. 31 p.

Social goals and indicators for American Society, edited by Bertram M. Gross. Philadelphia: American Academy of Political and Social Science, 1967. 2 Vol.

Published in The Annals, Vol. 371, May 1967 and Vol. 373, September 1967.

Spindler, Arthur. "RPBS and Social and Rehabilitation Services." Welfare in Review, March-April, 1969, p. 22-28. 7 p.

Staats, Elmer B. "The relationship of budgeting, program planning, and evaluation." G.A.O. Review, Winter 1970, p. 3-10. 8 p.

Steiner, George A. "Program Budgeting: business contribution to government management." Business Horizons, 8: 43-52, Spring 1965. 10 p.

Sterns, A.A. "Implementing the Glassco Report." Cost and Management, January 1968, p. 25-30. 6 p.

Sterns, A.A. "The Prelude to Action on the Glassco Report." Cost and Management, December 1967, p. 20-23. 4 p.

Stevens, Harris. "How to Build a Public Library Budget." Library Journal, 82: 2067-72, September 15, 1967. 6 p.

Strick, J.C. "Recent Developments in Canadian Financial Administration." Public Administration, 48: 69-85, 1970. 17 p.

Stromsdorfer, Ernst W. Economic concepts and criteria for vocational education. Toronto: O.I.S.E., March 3, 1967. (Processed preliminary report). 30 p.

Summers, William. "A Change in Budgetary Thinking." American Libraries, December 1971, p. 1174-1180. 7 p.

Sussna, Edward. "Planning, programming, and budgeting systems - a new approach to government spending." Pittsburgh Business Review, 37: 7 plus, May 1967.

Sweden. Ministry of Defense. The Defense Planning System. 5 Vols. Publications No. Fo 1-5/1970.

(The conceptual clarity and logic of the new Swedish defense planning system are striking and are the object of much discussion. Since it is just about to go fully operational this year, however, judgement about its practical merits must be reserved).

Sweden. Ministry of Finance. Planning Division. Multi-year planning and budgeting of government activities. Note. Oslo, April 1968.

Sweden. Official Government Reports. SOU 1967 : Program-budgeting.

(This official presentation of the Swedish Program Budgeting System can be obtained in English too. It is the counterpart to the "Defense Planning System" in the civilian sector, though not quite as comprehensive).

Szablowski, George J. "The Optimal Policy-Making System: Implications for the Canadian Political Process." In Thomas A. Hockin, (ed.), Apex of Power, Toronto: Prentice-Hall, 1971, p. 135-145. 11 p.

Tar, N.W. Benefit-Cost Analysis Review. Toronto: Department of Economics and Development, Economic Analysis Branch, 1966. 27 p.

Tax Foundation, New York. "Planning-Programming-Budgeting Systems and Cost-Benefit Analysis in Government." Research Bibliography, No. 26, August 1967. 4 p.

Thalheimer, Richard. An Evaluation of a Proposed Transition of the West Virginia State Budget System to a Program Format. Morgantown, West Virginia: Bureau of Business Research, West Virginia University, 1968. 73 p.

United Nations. Department of Economic and Social Affairs. A manual for programme and performance budgeting. New York, 1965. 103 p.

"U.S. Agencies Get Order: join McNamara's band." Business Week, p. 182 plus, November 13, 1965. 3 p.

U.S. Bureau of the Budget. Memorandum on Planning-Programming-Budgeting. (Bulletin No. 68-9), April 12, 1968. (Processed). 20 p.

U.S. Bureau of the Budget. Memorandum on Planning-Programming-Budgeting. (Bulletin No. 68-2), July 18, 1967. (Processed). 14 p.

U.S. Bureau of the Budget. Memorandum on Planning-Programming-Budgeting. (Bulletin No. 66-3), October 12, 1965. (Processed). 15 p.

U.S. Bureau of the Budget. Library. Program analysis techniques: a selected bibliography, with revisions and supplements, 1965 - 90 p.

U.S. Comptroller General. Survey of progress in implementing the Planning-Programming-Budgeting System in executive agencies. Washington, D.C.: General Accounting Office, July 1969. 103 p.

U.S. Congress. Joint Economic Committee. The Federal budget as an economic document, August 14, 1963. 26 p.

U.S. Congress. Joint Economic Committee. The Planning-Programming-Budgeting System: progress and potentials, December 1967. 11 p.

U.S. Congress. Joint Economic Committee. Subcommittee on Economy in Government. The analysis and evaluation of public expenditures: the P.P.B. system; a compendium of papers submitted to the Subcommittee on Economy in Government. Washington, D.C.: Government Printing Office, 1969. 3 Vol. 6 parts.

U.S. Congress. Joint Economic Committee. Subcommittee on Economy in Government. Economic analysis and the efficiency of government. Washington, D.C.: Government Printing Office, 1970. 51 p.

U.S. Congress. Joint Economic Committee. Subcommittee on Economy in Government. Innovations in planning, programming, and budgeting in state and local governments: a compendium of papers. Washington, D.C.: Government Printing Office, 1969. 218 p.

U.S. Congress. Joint Economic Committee. Subcommittee on Economy in Government. The planning-programming-budgeting system: progress and potentials; Hearings before the subcommittee... Washington, D.C.: Government Printing Office, 1967. 412 p.

90th Congress, 1st. Session, September 14, 19-21, 1967.

U.S. Department of Agriculture, Office of the Secretary. Planning-Programming-Budgeting System. (Secretary's Memorandum., No., 1965. (Processed). 5 p.

U.S. Department of Defense. A Primer on Project PRIME. Washington, D.C., December 1966. 78 p.

U.S. Department of Health, Education and Welfare. Planning-programming-budgeting guidance for program and financial plan. Revised Edition. Washington, D.C.: Government Printing Office, February 1968. 207 p.

U.S. Department of Health, Education, and Welfare. Toward a social report. Washington, D.C.: Government Printing Office, 1969. 101 p.

U.S. House of Representatives. Subcommittee on Government Operations. Effective and efficient use of computers in Congress. 91st Congress, 1st Session. Hearing, April 23, 1969. Appendix "A" - Strengthening Planning, Programming, and Budgeting in the Bureau of the Budget - A Study Briefing (A Synopsis of the McKinsey and Co. Study Effort).

U.S. President's Commission on Budget Concepts. Report. Washington, D.C.: Government Printing Office, 1967. 109 p.

U.S. Senate. Committee on Government Operations. Hearings on Planning-Programming-Budgeting, August 23, 1967. 63 p.

U.S. Senate. Committee on Government Operations. Planning-Programming-Budgeting: Official documents, selected comment, and initial memorandum, 1967. 115 p.

U.S. Senate. Committee on Government Operations. Subcommittee on Intergovernmental Relations. Criteria for evaluation in planning state and local programs: a study by Harry P. Hatry. (90th Congress, 1st Session). 42 p.

U.S. Senate. Committee on Government Operations. Subcommittee on National Security and International Operations. Planning-Programming-Budgeting - defense analysis; two examples. (91st Congress, 1st Session), 1969. 21 p.

U.S. Senate. Committee on Government Operations. Subcommittee on National Security and International Operations. Planning, programming, budgeting: inquiry. Washington, D.C.: Government Printing Office, 1970. 683 p.

U.S. Senate. Committee on Government Operations. Subcommittee on National Security and International Operations. Planning-Programming-Budgeting: interim observations: a study. (90th Congress, 2d. Session), 1968. 7 p.

U.S. Senate. Committee on Government Operations. Subcommittee on National Security and International Operations. Program budgeting in Foreign Affairs. Washington, D.C.: Government Printing Office, 1968. 24 p.

U.S. Senate. Committee on Labor and Public Welfare. Special Subcommittee on the Utilization of Science Manpower. Scientific Manpower Utilization, 1965-66. Hearings, November 19, 1965 - May 18, 1966 on S.2662, a bill to mobilize and utilize the scientific and engineering manpower of the nation to employ systems analysis and systems engineering to help fully employ the nation's manpower resources to solve national problems. (89th Congress, 1st and 2d Session), 1967. 213 p.

Viebrock, Ingo. "PPB - An Aid to Decision Making." In Special Libraries Association, Toronto Chapter, Bulletin, Vol. 31, 1971, p. 5-11. 7 p.

Washington. (State). Office of Program Planning and Fiscal Management. Fiscal Management Division. Program Financial Planning; an improved planning-programming-budgeting process for Washington State Government. Olympia, 1970. 36 p.

Wasserman, G.J. "Planning-Programming-Budgeting in the Police Service in England and Wales." O & M Bulletin, 25: 197-210, November 1970. 14 p.

Weidenbaum, Murray L. "Program Budgeting: applying economic analysis to government expenditure decisions." Business and Government Review, July-August, 1966, p. 22-31. 10 p.

Weisbrod, Burton A. and W. Lee Hansen. "An Income-Net Work Approach to Measuring Economic Welfare." American Economic Review, December 1968, p. 1315-1329. 15 p.

Wheeler, Joseph L. and Herbert Goldhor. Practical Administration of Public Libraries. New York: Harper and Row, 1962, p. 121-122. 2 p.

White, W.L. and R. Drause. "The Auditor General and Responsible Government." Cost and Management, February 1968, p. 31-34. 4 p.

Wickwar, W. Hardy. "Capital programs and budgets." University of South Carolina. Governmental Review, 9: 1-4, November 1967. 4 p.

Wildavsky, Aaron. "The Political Economy of Efficiency." Public Interest, Summer 1967, p. 29-48. 20 p.

Wildavsky, Aaron. "The political economy of efficiency-cost benefit analysis, system analysis, and program budgeting." Public Administration Review, December 1966, p. 292-410. 18 p.

Wildavsky, Aaron. The Politics of the Budgeting Process. 1964. Chapter 4: Reforms, p. 127-144. 18 p.

Wildavsky, Aaron. "Rescuing Policy Analysis from PPBS." Public Administration Review, March/April, 1969, p. 189-202. 14 p.

Willbern, York. Efficiency in Government. Speech, Institute for Budget Analysis, Lexington, Kentucky, July 14, 1967. (Processed). 8 p.

Williams, Robert T. "Speak to me - in P.P.B." Popular Government, 35: 5-9, April 1969. 5 p.

Wisconsin. Department of Administration. Bureau of Management. A prospective integrated planning-budgeting system for Wisconsin State Government, December 1967. 15 p.

Wisconsin. Department of Administration. Bureau of Management. Wisconsin's conversion to program budgeting, by Paul L. Brown, Executive Budget Co-Ordinator. (Paper presented at the annual meeting of the American Association of State Highway Officials, Subcommittee on Uniform Accounting). Wichita, Kansas, December 1, 1966. 24 p.

Woodruff, Elaine. "Word Measurement Applied to Libraries." Special Libraries, 48: 139-44, April 1957. 6 p.

Wright, Chester. "CSC Provides PPBS Training." Civil Service Journal, January-March, 1966, p. 10, 11, 14. 3 p.

Wright, Chester. The concept of a program budget. Speech, National Association of State Budget Officers Conference, Kentucky, September 1967. (Processed). 11 p.

Wright, James P., Jr. "Budgeting for the Public Works Department," by James P. Wright, Jr. and Gerald S. Tyson. Muncipal Finance, 41: 172-176. 5 p.

Young, Helen. "Performance and Program Budgeting: an annotated bibliography. A.L.A. Bulletin, 61: 63-7, January 1967. 5 p.

Zwick, Charles J. "Budgeting For Federal Responsibilities." American Academy of Political and Social Science. Annals, September 1968, p. 13-21. 9 p.

COUNCIL OF PLANNING LIBRARIANS Exchange Bibliography #289

PLANNING-PROGRAMMING-BUDGETING SYSTEMS:

Revised Edition including Exchange Bibliographies #121 and #183.

Additional copies available from:

Council of Planning Librarians
Post Office Box 229
Monticello, Illinois 61856

for: $3.00