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## ABSTRACT

Five objectives of any comprehensive Community Services program are to: (1) provide educational services for all age and occupational groups, utilizing the skills and knowledge of college staff and outside experts, (2) take educational, cultural, and recreational activities to the total community, (3) become a center of community life, (4) provide the community with leadership in solving educational, social, and economic problems, and (5) promote intellectual, cultural, and recreational life in the college district. Functions necessary to carrying out these objectives are to: offer college-credit extension courses, non-credit short courses, vocational training, and cultural and recreational programs; provide special services; and secure funds to be used in solving community problems. The comprehensive Community Services program must also have Community Services Board Policies that can be implemented through administrative regulations and procedures, as well as an Advisory Council and Committees. The scope and progress of the program depends upon how extensively the community is involved. (Appendixes to the paper provide: A Comprehensive Community Service Program; Community Services Program Outline; Check List for Effective Programs of Community Services; Systems Analysis Analogue Model--Application; Steps in Program Development; and A Community Services Systems Flow. One appendix, Community Services Group Mission Statements, Design Criteria, Performance Goals, was deleted due to marginal reproducibility, and another appendix, Community Services Working Paper Number 4; Effective Organization and Administration Practices, is available as ED 037 193.) (DB)

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DEVELOPING AND MANAGING A  
COMPREHENSIVE COMMUNITY SERVICES PROGRAM

By

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FLORIDA ASSOCIATION OF COMMUNITY COLLEGES  
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\*Appendix deleted due to marginal reproducibility

\*\*Appendix F: See ERIC Document #ED 037 193

## DEVELOPING AND MANAGING A COMPREHENSIVE COMMUNITY SERVICES PROGRAM

A comprehensive Community Services program should have as its overall purpose the development and implementation of various academic, vocational, and avocational programs and courses that are effective and responsive to the needs of its community citizenry. In addition, it should provide for enrichment and constructive use of one's leisure time. There are numerous definitions of Community Services, three of which are significant to our community college in Oakland County. These definitions of a comprehensive Community Services Program (see appendixes A, B, & C) have been created and serve as the foundation for the Oakland Community College program. Their sources are of significant importance in that, the first definition has been established by the OCC Board of Trustees in their Policy Manual:

"A diversified program of community services, in addition to the regularly scheduled day and evening classes, designed to meet the educational, cultural and recreational needs of all members of the Community College District."

The second definition has been established by the Michigan Council of Community College Administrators:

"The staff and faculty of the community college may be available for consultation, coordination, assistance, and participation in the social, economic, cultural, and educational betterment of its service area."

The third definition comes from a professional expert in the field of community services, Dr. E. L. Harlacher:

"By definition the community college, if it is to adhere to the meaning of the first word in its name, has an obligation to:

- A. Provide educational services for all age groups which utilize the special skills and knowledge of the college

staff and other experts and are designed to meet the needs of community and the college district community at large;

- B. Contribute to and promote the cultural, intellectual, and social life of the college district community and the development of skills for the profitable use of leisure time.
- C. Provide the community with the leadership and coordination capabilities of the college, assist the community in long-range planning, and join with individuals and groups in attacking unsolved problems.
- D. Become a center of community life by encouraging the use of college facilities and services by community groups when such use does not interfere with the college's regularly scheduled day and evening programs."

Summarizing the definitions of Community Services that I have presented results in the creation of what can be considered the five significant objectives of any comprehensive Community Services program. The attainment of these objectives should serve as Community Services' primary mission, and the Community Services administration and staff should be held responsible for attaining these objectives. They are:

1. Provide educational services for all age and occupational groups utilizing the skills and knowledge of college staff and outside experts.
2. Take educational, cultural, and recreational activities to the total community by the use of off-campus resources.
3. Become a center of community life by encouraging the use of college facilities and community facilities.
4. Provide the community with leadership in solving educational, social, and economic problems.
5. Promote intellectual, cultural, and recreational life in the college district.

In order to successfully attain these objectives, one must establish and accept assignment of functions, thereby fulfilling the overall purpose of a comprehensive Community Services program. These functions are:

1. To offer college credit extension courses throughout the entire district.
2. To offer non-credit short courses to meet particular needs of community groups.
3. To offer vocational training (apprentice, E.I. T., M.D. T.A.)
4. To provide special services: tours and visits, box office, public events calendar, speaker's bureau.
5. To offer programs to fill cultural and recreational needs.
6. To secure private, state and federal funds to be used in solving community problems: Project SERVE and Project COPE.

At Oakland Community College a much more involved and detailed approach is taken in order to accomplish its functions and it is the implementation of the Program Planning Budget System (PPBS), which allows for the establishment of mission statements, design criteria, and performance goals, involving persons, processes, and properties needed to effect this systematic sequence (see Appendix D).

The Mission Statement contains the sort of information that one might provide to an intelligent lay person in describing a system. It may provide the explanation of the role of the system under consideration to other pertinent systems in a macro-system: e. g., how a course fits in a program, or how a department relates to other departments in an educational system. The mission statement consists of two primary elements: Structure and Functions. Since a course could be viewed as a social system involving persons, processes, and properties the structures of a course could be considered to be composed of the possible persons (e. g., students at the freshman level), and those

materials, equipment, and facilities necessary to the operation of the course.

Design Criteria are statements designed to accomplish identification of the separate functions of the system. They are generally broad statements established as major objectives for the system, e. g., an organization, a department, or a course. Functions should not be so specific that they need to be changed frequently as minor changes are made in the task utilized in achieving the mission. The mission statement and design criteria do, in fact, define a system.

Performance Goals are the alternative ways that can be used to attain the design criteria of the system. These statements describe the behaviors which are expected as evidences of success in reaching the goals called for by the system (e. g., a department or a course). At this level we must be quantitative and specify the elements of objectives, as defined by Mager<sup>1</sup> (i. e., task, conditions, measures for determining achievement of the task). Since the process is defined as a series of interdependent steps established for the purpose of obtaining a particular goal, or end, a task is a behavior or a process. It should be considered in terms of the persons needed and the properties needed to effect the series of steps comprising it.

This approach in accomplishing functions provides a method for managing a comprehensive Community Services program. The comprehensive Community Services program developed in 1966 and decentralized in 1970 at Oakland Community College, has as its current management technique PPBS, which sets forth the mission statements, design criteria, and performance goals for not only the major divisions of a comprehensive Community Services program, but also provides administrative guidelines for carrying out functions and tasks and achieving objectives. (See Appendix E).

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<sup>1</sup> Robert F. Mager, Ph. D., Preparing Instructional Objectives, (Palo Alto, California: Fearon Publishers, 1962) page 53.

The comprehensive Community Services program also must have as part of its basic foundation, Community Services Board Policies, which can be implemented through administrative regulations and procedures. Some of the policies, regulations, and procedures governing Oakland Community College's Community Services may be of significance and help to you. These are as presented in the Community Services Working Paper Number 4: Effective Organization and Administration Practices. (See Appendix F). If you are to develop and manage a comprehensive Community Services program, you must have a community college Board of Trustees which not only supports this function as one of the major functions of the community college, but that is ready, willing, and able to develop policies and have the administration implement these policies through regulations and procedures that would allow for such a comprehensive program. If, in fact, the Community Services function is one of the five major functions of a community college, then it should have the administrative and financial support equivalent to the other four.

In addition to the policies, regulations, and procedures, you will find in the Community Services Working Paper Number 4: Effective Organization and Administration Practices, documentation which supports a comprehensive Community Services program, establishing a detailed, step-by-step procedure on how to develop the model program. (See Appendixes G & H). One of the major points made in this Working Paper is that



this model can not be developed, even with the Board policies, administrative regulations and procedures, mission statements, design criteria, performance goals, etc., unless there is an effective communication link must be established with all local units of government; county, city, village, township, as well as state and federal agencies, and community groups of a social service, business, professional, and industrial nature. This communication link should take the form of a Community Services Advisory Council and should assist in determining through surveys and questionnaires the actual educational needs and interests that the community has to serve as a basis for program development. It is also very important that communication be established within the college, with the other major divisions of the college. This can be accomplished through presidential staff meetings, college councils, senates, committees, and other communication sources. Effective communication is ultimately accomplished when it is instituted within the Community Services division, in this case the Community Services division should have weekly staff meetings to assess the fulfillment of their functions, the attainment of their objectives, and to develop on a regular basis techniques and solutions for problem solving.

In summary, one can point out that a comprehensive Community Services program which is diversified and is offered in addition to the regularly scheduled day and evening program, must be designed

to meet the educational, cultural, and recreational needs of all members of the community college district, and can be accomplished only through the support of the community college's Board of Trustees and Administration, the establishment of Community Services Board policies that can be implemented through administrative regulations and procedures by a competent Community Services Director and staff, knowledgeable and skillful in fulfilling said administrative regulations and procedures, and using as their management technique the PPBS (Program Planning Budget System) approach.

As to the scope of the program and the progress that is made toward expansion, much will depend upon how extensively the community is involved, which can be accomplished through Advisory Councils and Committees and actual participation. At Oakland Community College, numerous successful programs implemented by Community Services can be traced to the development of an effective Advisory Council, which was actively involved from the outset. An example that I can cite is that of the Oakland County Police Academy. This Academy was established in Oakland County by Oakland Community College, Community Services Division, in conjunction with Oakland County governmental officials, directors of public safety, and chiefs of police of the Oakland County law enforcement agencies, and other important county leaders, such as judges, prosecutors, attorneys, etc. This program has been in operation

since 1967, and its governance is shared with the county law enforcement agency officials. The academy has educated or trained in excess of 5,000 in the field of law enforcement. It is considered by law enforcement officials in the County, State, and Midwest, as one of the most successful of its kind.

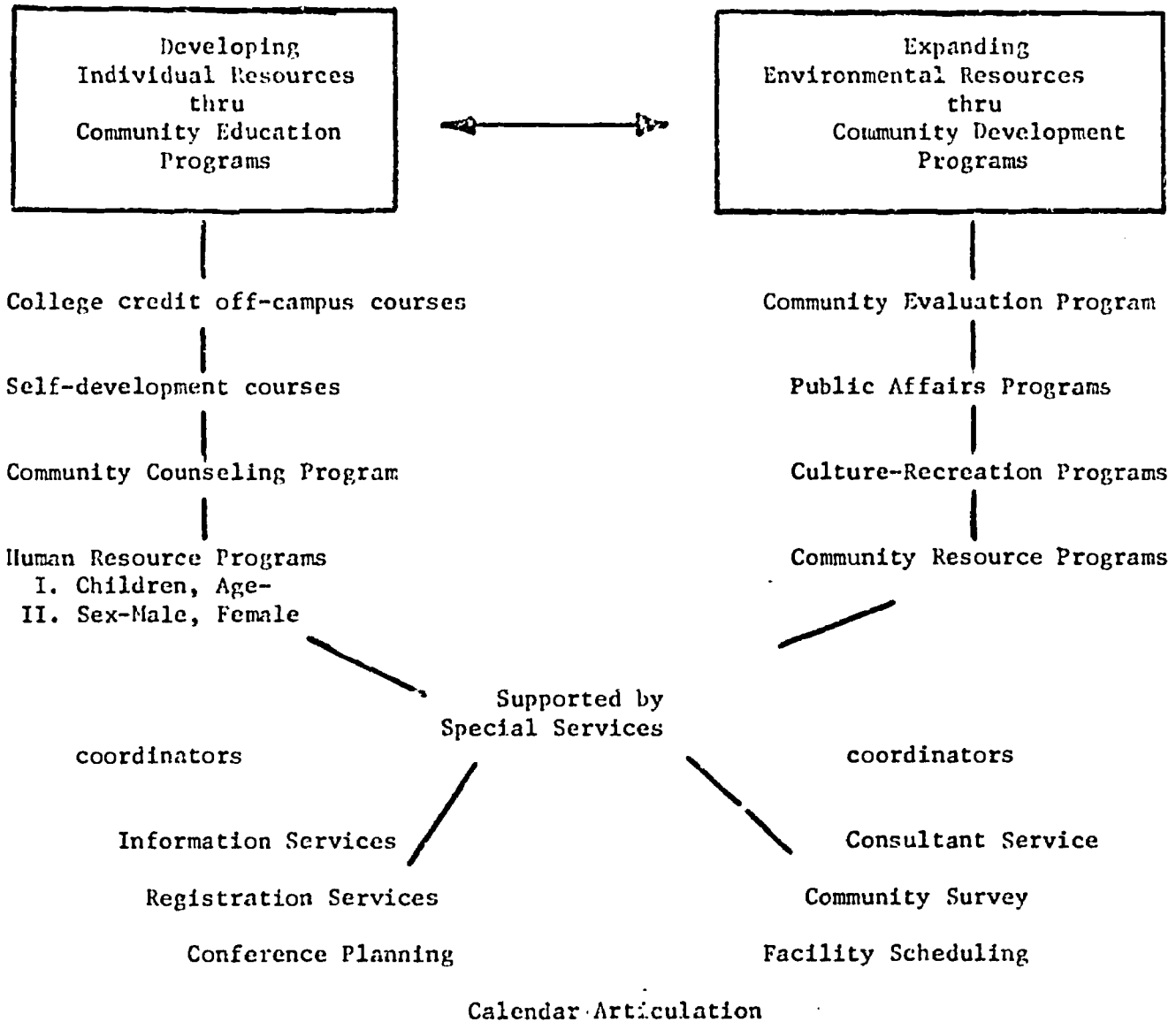
This very brief overview does not include a detailed description of the activities and related procedures for Developing and Managing a Comprehensive Community Services Program. Further information may be obtained by contacting:

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WJF:dj

# APPENDIX A

## A COMPREHENSIVE COMMUNITY SERVICE PROGRAM



- COMMUNITY EVALUATION. Systematic efforts to study needs, problems, and resources of the community as a basis continuing development and allocation of resources.
- PUBLIC AFFAIRS. Development of forums, lectures, discussions having particular relevance for meeting community needs, resolving civic problems, or understanding societal problems.
- CULTURAL ENRICHMENT. Provision of co-sponsored programs in music, art, and drama as well as a variety of leisure time activities.  
Through
- COMMUNITY RESOURCE DEVELOPMENT COORDINATOR. Enlarging opportunities for employment. Proposals for support. Knowledge of sources of funding.
- COLLEGE EXTENSION. Provision of college and university courses in non-college facilities as a means of extending educational opportunities to all parts of the community.
- SPECIAL INTEREST DEVELOPMENT
- SELF-DEVELOPMENT COURSES. Provision of a variety of workshops, institutes and short courses designed to assist participants in acquiring skills, knowledge, and attitudes essential to their personal development.
- COMMUNITY COUNSELING. Development of individual and group services which can aid citizens in understanding their personal resources and identifying community resources so they can maximize their potentialities for self-realization.
- HUMAN RESOURCES PROGRAMS. Development of programs based upon the common needs of various sub-groups within the community and designed specifically to advance their personal growth and development.  
OEO-MDTA-industry-  
Headstart-VISTA

## APPENDIX B

### COMMUNITY SERVICES PROGRAM OUTLINE

1. Program of Community Services.
  - A. Definition and Identification.
  - B. Community Survey.
  - C. Advisory Council.
  - D. Organizational Patterns.
  - E. Funding.
  - F. Types of Functions.
    - (1) Special Services.
      - a. Monthly Calendar.
      - b. Use of Facilities.
      - c. Speakers' Bureau.
      - d. Box Office Information Service.
      - e. Tours and Visits.
    - (2) Public Affairs and Cultural Services.
      - a. Public Affairs.
        - (a-1) Public Events Program.
        - (a-2) Public Events Board.
      - b. Cultural Services.
        - (b-1) Short Courses.
        - (b-2) County Arts Council.
        - (b-3) C. A. P. E. S.
        - (b-4) Arts and Humanities Committee.
    - (3) Community Research and Development.
      - a. Historical Background.
      - b. Community Surveys.
      - c. Means of Securing Community Involvement.
      - d. Community Research and Development Advisory Committee.
      - e. Preparation of Proposals.
      - f. Sources of Funding.
      - g. Development and Utilization of Models.
    - (4) Women's Continuum Programs.
      - a. Counseling Services.
      - b. Short Courses.
      - c. Training Programs.
      - d. Employment Services.
      - e. Special Services to Women's Organizations.
      - f. Publicity.

COMMUNITY SERVICES PROGRAM OUTLINE, continued

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- (5) Community Education.
  - a. Non-credit Short Courses.
  - b. College Credit Extension Courses.
  - c. Promotional Activities.
  - d. Allocation of Programs.
  - e. Development and Utilization of an Advisory Committee.
  
- (6) Human Resource Training.
  - a. Technical and Occupational Programs.
  - b. Employment Placement Services.
  - c. Promotional Activities.
  - d. Human Resource Training Advisory Committee.
  
- (7) Recreational Services.
  - a. Athletic Activities.
  - b. Community Recreation.
  - c. Adult Fitness Programs.
  - d. Special Events.

/dj

## APPENDIX C

## CHECK LIST FOR EFFECTIVE PROGRAMS OF COMMUNITY SERVICES

The effective administration and supervision of the program of community services involves:

## I. Securing community-college support

## A. involve community in planning and development

- Utilize personnel of appropriate community groups in planning and promotion of program
- Engage community advisory committees in planning of program
- Obtain cosponsorship of services and activities by local groups
- Actively involve a large number of community people and groups in program
- Secure active participation and support of community leaders
- Organize community advisory council as means of identifying community needs and interests
- Develop and maintain cooperative, friendly relationships with community groups
- Arrange for community cultural groups to affiliate with college

## B. Maintain effective internal and external communication

- Establish regular information service to keep citizens of college district community informed on college matters
- Provide adequate time to plan publicity campaigns
- Use a wide variety of media to communicate with public and reach all segments of college district community
- Direct publicity and publications toward specific publics in community



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- Utilize extensive direct mail publicity
- Arrange for direct coverage of college events by area press
- Develop and maintain personal relationship with area press
- Prepare brochures regarding activities and services and distribute throughout community
- Issue personal invitations to community leaders to attend events
- Keep public fully informed of services available from college
- Establish citizens' committees as an aid in presenting programs to community
- Clarify channels of communication between community services office and other college departments involved in providing services.

**C. Involve faculty and students in planning and development**

- Encourage active participation of faculty and students in program
- Organize student-faculty planning committee
- Provide opportunity for faculty to help plan program informally and through study and advisory committees

**D. Coordinate services with other community groups**

- Coordinate program with other community and regional groups to avoid unnecessary duplication of services
- Maintain close liaison with public school personnel of college district
- Encourage community-wide coordination of cultural and recreational activities

**E. Encourage college staff to participate in community affairs**

- Encourage college personnel to participate in community activities
- Make college personnel available to community as consultants
- Provide leadership in organizing needed community groups and solving community problems

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### F. Orient faculty and staff to community service function

- Interpret community service function to college faculty and staff on continuous basis

## II. Determining nature and scope of program

### A. Provide effective planning and research

- Insure long-range planning of program
- Plan carefully all details of each individual service or activity
- Begin planning of individual services and activities at early date
- Consider carefully timing of services or activities
- Encourage staff experimentation and innovation in developing program
- Invite community groups to utilize college facilities and resources
- Preplan advisory committee meetings carefully
- Obtain evaluation of services and activities from participants
- Conduct appropriate research studies, including surveys and polls

### B. Establish high standards for public performance

- Select known, quality artists and lecturers
- Determine and adhere to standards for public performance

### C. Tailor services to specific needs and interests

- Tailor program and individual services to meet needs and interests of specific groups in district community

### D. Define program purposes and objectives

- Determine objectives and philosophy of program and individual services
- Emphasize educational aspects of program

- Present diversified and balanced program
- Define specific functions of citizens' advisory committees

E. Identify community needs and interests

- Make community survey to determine specific needs and interests of district community
- Base each decision to provide a service or activity on analysis of community needs and interests
- Hold conferences and informal discussions with community people for purposes of determining community needs and interests
- Encourage community-at-large to express its desires and needs for specific services

III. Organizing and administering program

A. Provide effective administration and supervision

- Establish community services division as major administrative area
- Obtain full-time community services administrator to provide leadership and assume over-all responsibility for program
- Provide adequate staff to organize and implement program
- Select enthusiastic, well-qualified staff supervisors for program
- Employ qualified public information officer
- Provide supervisors with sufficient time and authority to plan and coordinate activities
- Assure staff supervisors of freedom and authority to develop their activities
- Obtain adequate clerical assistance
- Select membership of citizens' advisory committees carefully on basis of purposes of committee
- Provide expert staff help for citizens' advisory groups

- Provide over-all coordination of events cosponsored by community groups
- B. Establish and adhere to written policies, regulations, and procedures
  - Establish written policies, regulations, and procedures for all aspects of program
  - Apply policies and regulations uniformly
  - Review policies, regulations, and procedures periodically to see if they are still effective
  - Maintain flexibility in accommodating community needs
  - Require that all instructions and requirements for use of college facilities be in writing
  - Arrange meeting with representatives of groups using college facilities for detailed joint-planning
  - Require college supervisor to be present during time facility is being used by community group
- C. Utilize community facilities and resources
  - Offer services and activities at off-campus locations
  - Utilize qualified consultants in developing program when need arises
- D. Secure board, administration, and faculty support
  - Secure understanding and support of board of trustees for program
  - Elicit support and cooperation of administration and faculty
  - Obtain support of board, administration, and faculty for community service as a major function
- E. Obtain essential resources
  - Secure essential financial support for program
  - Provide adequate facilities and equipment for program<sup>1</sup>

<sup>1</sup>Ervin L. Harlacher. Effective Junior College Programs of Community Services: Rationale, Guidelines, Practices. Junior College Leadership Program, Occasional Report Number 10. Los Angeles: School of Education, University of California, 1967.

# SYSTEMS ANALYSIS

ANALOGUE MODEL-APPLICATION

(Including  
Program Planning Budget Systems)



OAKLAND  
COMMUNITY  
COLLEGE

## SYSTEMS ANALYSIS ANALOGUE MODEL - APPLICATION

(Including Program Planning Budget Systems)

### Mission Statement

The mission statement contains the sort of information that one might provide to an intelligent lay person in describing a system. It may provide the explanation of the role of the system under consideration to other pertinent systems in a macro-system: e.g., how a course fits in a program, or how a department relates to other departments in an educational system. The mission statement consists of two primary elements: Structure and Functions. Since a course could be viewed as a social system involving persons, processes, and properties the structures of a course could be considered to be composed of the possible persons [e.g., students at the freshmen level], and those materials, equipment, and facilities necessary to the operation of the course.

Structures - structures should be included if there is some unique aspect to e.g., a course being defined, such as: physical activities being offered off-campus, science courses with laboratory, or special structures needed for the format of a particular instructional approach, e.g., the bursting of students to carrel arcades or programmed instruction laboratory for independent study. The programs to which the course belongs should also be considered an important aspect of the structure for the course to be included in its mission statement.

Functions - the functions of a system are very broad umbrella-like statements which identify the major objectives of the system. They are described within the following four processes: (1) instructional, (2) operational, (3) educational services, (4) evaluation, research and development. For courses within the curriculum, generally, the great majority of the functions are instructional. The department may have many instructional functions consisting of courses and programs, but it would also have more functions involving operational processes as well as the other kinds of processes. As we shall see later the description of the functions within each of these four processes can constitute the program planning base in a Planning Program Budget System (PPBS).

### Design Criteria

Design criteria are statements designed to accomplish identification of the separate functions of the system. They are generally broad statements established as major objectives for the system, e.g., an organization, a department, or a course. Functions should not be so specific that they need to be changed frequently as minor changes are made in the *task* utilized in achieving the mission. The mission statement and design criteria do, in fact, define a system. As systemic analysis is used to improve this system we should not be constantly changing the system itself, i.e., the mission statement and the design criteria. Rather, the tasks, i.e., performance goals, we set as alternatives to accomplishing the mission of the system should be analyzed and revised. In other words, everytime we attempt to improve this system by changing its structure and functions, its mission statement and design criteria, we change the system itself and thereby are no longer working with the same system. Instead, a new system has been defined.

A process is defined as a series of interdependent steps established for the purpose of obtaining a particular goal, or end. The design criteria of a system can generally be accomplished through the implementation of four basic processes: (1) instructional, (2) operational, (3) educational services, (4) evaluation, research and development.

### Performance Goals

Performance goals are statements that can be identified on the following basis:

1. Format: performance goals must include a task, conditions pertinent to the task, and minimum standards for determining achievements of the task.
2. Measurements: i.e., quantification of the minimum standards for determining successful accomplishment of the task.

Performance goals are the alternative ways that can be used to attain the design criteria of the system. These statements describe the behaviors which are expected as evidences of success in reaching the goals called for by the system (e.g., a department or a course). At this level we must be quantitative and specify the elements of objectives, as defined by Mager<sup>1</sup> (i.e., task, conditions, measures for determining achievement of the task). Since the process is defined as a series of interdependent steps established for the purpose of obtaining a particular goal, or end, a *task* is a behavior or a process. It should be considered in terms

<sup>1</sup>

Robert F. Mager, Ph.D., Preparing Instructional Objectives, (Palo Alto, California: Fearon Publishers, 1962) page 53.



of the persons needed and the properties needed to effect the series of steps comprising it. *Conditions* are relevant environmental factors, either assumed or known to effect the performance of the task. Based upon this information the next elements of this system are identified, the inputs, or resources, necessary for the system to operate. Measurement of condition should not be confused with measurement of the performance goal task. In many cases there may be no conditions which are considered to be unique and therefore noteworthy. Within an on-going organizational system the conditions may be accepted intuitively as "given" and may not be included in the performance goal. The object is to communicate enough detail so that isomorphism between the performance goals and the real system exists, (i.e., the performance goal can be a model of the real system) rather than write as much as possible. The judgement as to how much writing is needed must be made by the developer of the system definition. In judging a statement as an appropriate performance goal, an evaluator should consider differences in writing style, cognitive style and other similar factors.

The *measurement* for determining achievement of the task is the most important consideration in evaluating a system. The following factors should be considered as elements of a performance goal measurement:

- A. What type of measurement will be made? There are four categories (i.e., physical, psychological, role expectation, and normative structure).
- B. What observer group will be used for the measurement? There are four categories (i.e., supervisor, self-peers, subordinates, clients).

C. What type of measurement will this data provide?

There are four types (i.e., nominal, ordinal, interval, ratio interval).

If the performance goal is to be amenable to measurement the above questions *must* be answered. It must be noted that in a social system (e.g., the department or a course), measurement is made within probability ranges of true values. This is not unlike the so-called error found in measurements in physical systems, the difference being in the degree of certainty.

### Inputs/(Outputs)

An educational program can be defined as a social system of three generic elements, *persons*, *processes*, and *properties*, and their interconnections considered over a specified period of time. The *persons* and *properties* are the resources required to implement the *processes* of the system. These are the inputs. There are almost always a variety of alternatives which can be considered in order to successfully attain the tasks of the performance goals. This can be done through alternative processes. In this case parallel sets of performance goals could provide alternatives. These alternative sets of performance goals would provide alternative needs for persons and properties. In order to accomplish the design criteria, then, judgements must be made about the alternatives available to provide the optimum decision [one that is best for the macro-system, not necessarily the individual subsystem].

The *inputs* are an identification of the persons and properties needed to implement the processes of a defined system. Alternatives in performance goals will provide alternatives in persons and properties inputs. Some will be needed more than others. In fact, some persons and properties can be identified as *Musts*<sup>1</sup>. These are the resources essential to successful implementation of those processes required to attain the design criteria. Other persons and properties can be identified as *Wants*. These are the resources not essential, but desirable, to best change for success of attaining performance goals. The wants can be placed in rank order, or given a weight on an arbitrary scale (e.g., 1 to 10), thus indicating the relative importance between selected persons and properties in considering the alternatives presented. The planning and programming of alternatives in terms of persons and properties is the essence of Planning Program Budget Systems (P.P.B.S.). In PPBS planned alternatives are "costed out" in terms of the persons and properties identified as musts and wants. A variety of "costs" can be derived from combinations of musts costs with alternative wants. Decisions can be made from among the alternatives presented which are optimum for the design criteria of the system being considered as well as the concern of the "budgetary" system to operate at less cost.

The alternatives can be scored on an arbitrary scale according to their costs (highest score for lowest cost). By multiplying the "cost" score by the priority "weight" a "value" can be derived which help in the decision-making process. The alternative with the highest "value" would

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<sup>1</sup> Charles Kepner and Benjamin Tregoe, The Rational Manager, A Systematic Approach To Problem Solving and Decision Making, (New York: McGraw-Hill Book Co., 1965) page 183.

be the best. This procedure does not guarantee the correct decision. Good judgement, consideration of the values of the decision maker, (whether greatest concern is for persons or processes or properties), and experience, are ingredients which must be considered in applying this information to the decision that is finally made. Inputs, then, are the identification of the alternative sets of persons and properties *derived from the performance goals. Where the performance goals are task oriented primarily, inputs are persons and properties oriented.*

The development of the Mission Statement, Design Criteria, Performance Goals, and Inputs constitute program plans for the system.

Important examples of careful program planning include realistic estimates of the persons needed in the system (i.e., in education, (1) *students*, estimated enrollments by course, (2) *instructors*, number of instructors, this can only be done realistically by careful planning of work load including scheduling aspects combined with the realistic enrollment estimates, (3) *counselors*, usually based on enrollment estimates for the macro-system, performance goals should be considered carefully here, (4) *administrators*, number of functional roles should be included. A course treated as a system may not require inclusion of this type of persons, but a division, or college system, would require several administrators of a variety of functional roles, staff, line, etc., (5) *specialists*, consultants, visiting lecturers, (6) *others*, paraprofessionals, support personnel, e.g., secretaries, student assistants, etc.

In addition to the persons, are the properties. To identify and summarize properties for program planning in instructional departments,

for example a budget summary form can be used by session or by year. Following are suggestions for properties which will improve ability to develop more realistic program plans. There are three broad categories to consider:

1. Materials
2. Equipment
3. Facilities

1. Materials

A. Learning Resources Center

Materials which will be provided through the LRC should be identified. This can include books, slides, transparencies, projectors, audio-tapes, etc. If you are estimating the quantity of items only, it will be helpful to the LRC program planning.

B. Printed Materials

Materials to be ordered for print should be identified. If former requests have been made, and are going to simply be repeated, copies can be attached to your performance goals.

C. Educational Services

Requests anticipated to be made of the Educational Services Division should be identified. This can include artwork, slides, models, transparencies with overlays, etc. If estimating quantities only, it will be helpful for Educational Services program planning.

## 2. Equipment

- A. Any major new equipment needed should be identified.
- B. If the equipment is specialized or unique the cost estimate should be provided. However, if it is standard equipment, e.g., typewriters, indicate the quantity needed, the cost estimate can be determined in the Office of PPBS.

## 3. Facilities

- A. Any special or additional facilities needed for a specific course should be identified with that course, e.g., chemistry lab, typing lab, greenhouse, art lab, etc. If the size is important, that information should be included. If plumbing or special lights are important, it should be indicated. For classrooms, if seating capacity is important or unusual, it should be identified.
- B. Facilities can be identified as permanent fixtures, utilities, rooms, or buildings.

## Outputs/(Inputs)

In defining the program plans, including the performance goals, specified tasks have been identified with quantifiable measurements to determine successful attainment of the tasks. The quantities stated in the performance goals, then, are the planned results, or the *expected* results. The *observed* results, the actual measurement of results during implementation of the system, constitutes the *output* of the system.

Differences, between expected measurements and observed measurements, can be statistically studied to provide estimates of progress on an interim basis (inferences during the period of time specified for the system) about probability for successful attainment of performance goal tasks can then be derived.

The measurements can be any of the four types: (1) physical-primarily for counting objects, or measuring properties, (2) psychological-primarily for opinion, attitudes and beliefs, a common element in the design criteria of many educational systems, yet little measurement is attempted, (3) role expectation-primarily used for feedback through survey information on expectations for selected tasks, or design criteria, by various observer groups, (4) normative structure-primarily used when the measurement called for by a task is, that an event (process) occurred, or a product (property) was prepared (i.e., yes it was, or, no it was not), also for measurement compared to certain organizational norms. This occurs particularly when *expected measurements* are not delineated clearly enough in a quantitative fashion. The expected results can be derived from the appropriate organizational norms. These norms can be historically derived or established by groups of persons in the system.

In addition to consideration of the *types of measurement* for the output, there are four *types of observer groups* from which the measurements can be obtained: (1) supervisors, (2) self-peers, (3) subordinates, (4) clients. The measurements provide *data of four types*: (1) nominal, (2) ordinal, (3) interval, (4) ratio interval. These have been discussed in another part of this paper and need not be repeated here.

Important examples of output measurements are: (1) at the *macro-system* level, e.g., college, student credit hours generated, accuracy of projections, degree of total performance goal achievement, cost per unit (for a variety of units, e.g., square foot, fiscal year equated student, student credit hours, contact hour, administrative function, etc.), (2) at the *system* level, e.g., division, changes in class scheduling after a specified cut-off time, efficiency of staff utilization, adequacy of communication between various sub-systems, (3) at the *subsystem* level, e.g., course, student achievement on specific tasks (i.e., test results), withdraw rate, pre-test/post-test differences, passing rate, student attitudes, opinions and beliefs, etc.

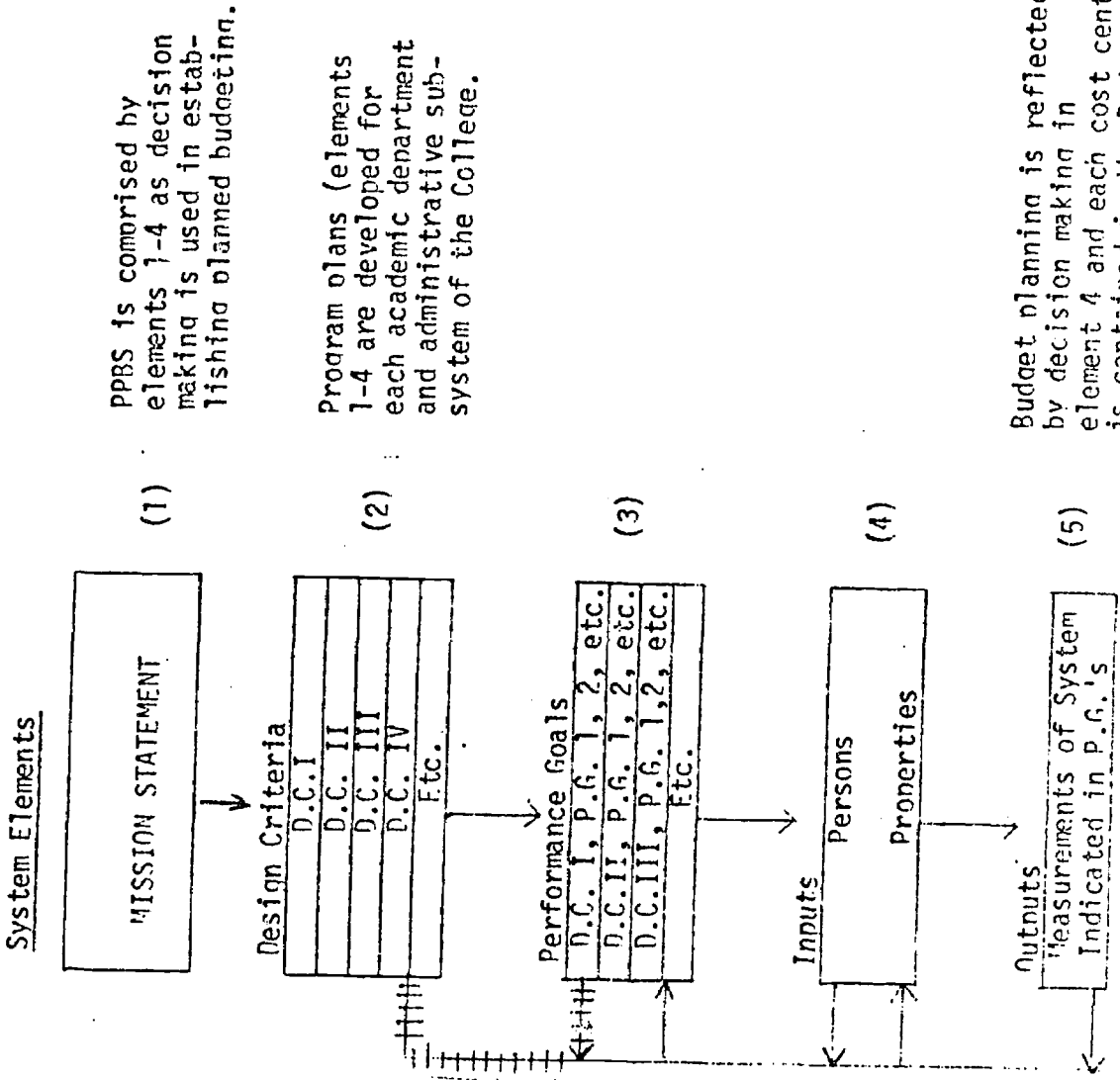
All of these, macrosystem, system, and subsystem, can be measured relative to expected results called for in performance goals.

### Feedback

The last, but most important, element in the Systems Analysis Analogue Model is the *feedback* loop. In each element of the generic system information is generated as a result of processes, decisions, and measurements, i.e., processes in the performance goals, decisions in inputs, measurements in outputs, i.e., test results. This information must flow between persons in various subsystems in any organization. Characteristic of a social system, this feedback is transmitted as *human feedback*. This is done through conversations, meetings, hearings, in-service training. It is this social function which differentiates a social system from a self-adjusting mechanical system or an engineering system. Selected persons in the system must have a special function aspect of their role to provide for a feedback node in each major subsystem. They also



SYSTEMS ANALYSIS ANALOGUE MODEL



Systems Analysis is comprised by elements 1-5 as decision making is used in adjusting elements 3-5 of the system. (Adjustments in elements 1 and 2 constitute defining a new system.)

- Feedback circuitry includes:
- a. meetings
  - b. conversations
  - c. telephone contacts
  - d. reports
  - e. student information system
  - f. financial information system

- Element 5 includes analysis reports covering:
- a. faculty load
  - b. enrollment
  - c. grades
  - d. obtain state reports

(1) PPBS is comprised by elements 1-4 as decision making is used in establishing planned budgeting.

(2) Program plans (elements 1-4 are developed for each academic department and administrative sub-system of the College.

Budget planning is reflected by decision making in element 4 and each cost center is contained in the Budget preparation worksheet.

provide certain measurements for performance goal analysis. This role, providing measurement data and communicating feedback, constitutes a monitoring function for the social system. In this respect, persons fulfilling this kind of role are called monitors.

This type of communication model calls for something quite different than the old bureaucratic chain of command form. Human feedback circuitry calls for a communication network with nodes in each subsystem with interconnections between all nodes where information or decisions are of common concern. More formal communication flow in an organization is associated with less upward flow of information from subsystem to macro-system<sup>1</sup>: the human feedback network provides opportunity for increased information flow throughout the various subsystems of an organization.

Any social system consists of persons, processes, and properties, with their interconnections, viewed over a specified period of time. The analogue model, isomorphic to any social system for purposes of analysis and decision making, has the following generic elements: (1) mission statement, (2) design criteria, (3) performance goals, (4) inputs/ (outputs), (5) outputs/(inputs), and (6) human feedback circuitry.

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<sup>1</sup> Berelson and Steiner, Human Behavior, An Inventory of Scientific Findings, (New York: Harcourt, Brace & World, Inc., 1964), page 370.

APPENDIX G  
STEPS IN PROGRAM DEVELOPMENT

1. Determination of target population
2. Community involvement (models)
3. Pre-planning (ad hoc) committees
4. Facilities
5. Faculty involvement
6. Planning forms
7. Preparation of flyers and brochures
8. Advertising (model of time table)
9. Preparation of evaluation forms

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CLEARINGHOUSE FOR  
JUNIOR COLLEGE  
INFORMATION

APPENDIX H  
A COMMUNITY SERVICES SYSTEMS FLOW

