DOCUMENT RESUME

ED 078 189 VT 020 366

TITLE	Suggested Models for Solutions to Current Vocational Education Problems Developed by Students Enrolled in Education 438A, Fall Quarter.
INSTITUTION	California Univ., Los Angeles. Div. of Vocational Education.
PUB DATE	1 Dec 72
NOTE	118p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	*Administrative Problems; Disadvantaged Youth; *Educational Administration; Educational Equipment; Inservice Teacher Education; Management Information Systems; *Models; Performance Contracts; Problem Solving; Program Planning; Resource Allocations; School Administration; *Student Developed Materials; *Teacher Education; Vocational Education

ABSTRACT

School administrators who must make decisions that determine the direction for vocational education need empathy and flexibility in applying the principles and practices inherent in vocational education. Effective administration requires the utilization of management fundamentals combined with identification and selection of alternatives for solving problems. Students enrolled in the fall quarter of Education 438A established alternatives from which they developed a series of models for solving current problems in vocational education. This publication contains 18 student-developed models for solving administrative problems in various areas, from a management information system for program planning to the division of vocational education monies among school districts and regional occupational centers. Each model contains potential solutions drawn from the students' research. (MF)

SUGGESTED MODELS FOR SOLUTIONS TO CURRENT VOCATIONAL EDUCATION PROBLEMS

DEVELOPED BY STUDENTS
ENROLLED IN
EDUCATION 438A - FALL QUARTER

DIVISION OF VOCATIONAL EDUCATION
UNIVERSITY OF CALIFORNIA
DECEMBER 1, 1972

SUGGESTED MODELS FOR SOLUTIONS TO CURRENT VOCATIONAL EDUCATION PROBLEMS

DEVELOPED BY STUDENTS
ENROLLED IN
EDUCATION 438A - FALL QUARTER

DIVISION OF VOCATIONAL EDUCATION
UNIVERSITY OF CALIFORNIA
DECEMBER 1, 1972

PREFACE

School administrators who are in the position to make decisions that determine the direction for vocational education need to have an empathy for and a versatility in applying the principles and practices inherent in vocational education. Among a number of skills necessary for effective and efficient administration of vocational education is the utilization of management fundamentals combined with imaginative identification and logical selection of alternatives for solving problems. Amelioration of this particular administrative skill is essential in the achievement of vocational education goals.

The students who were enrolled in the fall quarter of Education 438A established alternatives from which they developed a series of models for solving current problems in vocational education. Each model presented in this publication contains potential solutions emanating from their research. Contained within these models are elements that, with additional refinements, can lead to viable solutions based upon research and substantiated through practice rather than upon inveterateness.

David Allen, Associate Director
Division of Vocational Education

Lecturer, Graduate School of Education
University of California, Los Angeles

CONTENTS

EDUCATIONAL MANAGEMENT

A MODEL OF AN INFORMATION SYSTEM FOR DECISION MAKING AS IT RELATES TO PROGRAM PLANNING

Ralph Bregman

There are five essential functions performed by educational management of administration. The five functions are:

PLANNING is the thought that precedes the action and involves the development of and selection from among alternatives as the necessary course of action to achieve an objective. Planning is the primary function of management, since every manager performs it prior to the other functions.

ORGANIZING involves the definition of the tasks necessary to perform the objective, the distribution of these tasks among subordinates, and the assignment of authority to get the job done. This involves the manager's grouping the activities for which he is responsible, assigning these to subordinates, and providing for the necessary coordination of efforts.

STAFFING is that process by which the personnel requirements are defined and necessary staffing action (recruiting, selecting, hiring, placing, training) is taken to man the positions provided for by the organization's structure. Staffing implies, therefore, the forecasting of manpower requirements and includes the inventorying, appraising, and selection of personnel for positions.

DIRECTING involves the guiding and supervising of subordinates. It is the leadership function essential in the management process and involves the motivation and coordination of subordinates. Direction deals exclusively with people. It includes the capacity to enlist, through communication and persuasion, the

effort of subordinates in working toward a given objective.

CONTROL compels events to conform to plans. Thus, control (a) sets standards of performance in order to reach the objective, (b) measures actual performance against these standards, and (c) corrects deviations to insure that actions remain on course. Plans are not self-achieving or decisions self-implementing; carrying them out means prescribing the activities of personnel at designated times.

This paper will concentrate on the information system needed to support the planning function.

Information as a Resource

Historically, men, money, materials, equipment and facilities are basic resources of production. A fifth resource, now recognized as equally important, is information. The need for information takes on greater significance when it is utilized for decision making within the planning process.

Decision Making

Decision making involves basic and fundamental steps. The following table depicts the steps for planning and the relationship to other processes.

Table I

Steps in Decision Making and Related Processes

Problem Solving/ Decision Making	Scientific Method	Planning Process	Systems Design
Define the Problem	Define the area of investigation	Define the objective	Analyze present system
Gather relevant facts	Develop a hypothesis	Develop planning premises	Develop model of present system
Define alternatives	Gather data	Define alternatives	Propose a new system
Weigh alternatives	Test hypothesis	Evaluate alternatives	Test new system
Choose best alternative	Reach conclusion	Choose best alternative	Install new system

Each step in the planning process requires an information support system and feedback loop.

Characteristics of Information Demands by Management Level

An organization can be viewed as a hierarchy of management systems, each with a particular focus and all dependent on each other's decisions and actions (see Chart I).

At the top of the hierarchy sit the strategic planners, the men who in most organizations make decisions on the organization, on the resources to be used to attain the objectives, and on the policies that are to govern the acquisition, use, and disposition of these resources. Their activities focus on structuring big plans with major consequences. At the next level are the middle managers who are assigned the responsibility of assuring that the required resources are obtained and effectively and efficiently used in the accomplishment of the organization's objectives. Although their activities include both planning, within the framework provided by top management, and control, these functions overlap in actual operation. At the lowest level are those managers whose planning activities have the most limited scope, usually focusing a day-to-day operations. On the other hand, the control function is most prevalent here since these managers are charged with assuring that the specific tasks defined or implied by the plans developed at higher management levels are carried out effectively and efficiently.

The preceding, rather static description of management levels can be translated into a dynamic representation by characterizing the interdependency of the actions. Top management focuses on creating broad statements of policy and guidelines but does not detail them to the point of spelling out their cohesive application to the organization as a whole. This is left to middle management who must integrate the (sometimes) apparently conflicting statements and guidelines into a cohesive set of operating procedures and regulations that affect the organization

as an entity. Lower-level management applies these procedures and regulations in the conduct of business. In effect, the middle and lower levels expand upon and add further detail to the intended operating plan formulated by the strategic planners. In terms of a specific example it can be said that top management sets personnel policies, middle management formulates specific policies governing personnel practices, and lower-level management assures that the policies are implemented.

Clearly, the activities at each level vary in complexity, decreasing with the lessor levels of management. At the highest level, the variables are harder to define and their relationship less apparent. And the information required to support the activities of each level also differs.

Strategic planning relies more heavily on information collected outside the organization. Much of the data required are trend data relevant to decisions about a particular plan. And much of it is imprecise. Because strategic planning requires consideration of a broad time frame, the planner can only estimate what will happen--and his estimates are likely to have a high degree of uncertainty. Nor can all of the problems be foreseen. Even for those that can be predicted, data collected in a form useful for an occasional decision may not be worth the cost.

The control activities carried out at the middle-management level, because they encompass the totality of the organization, usually are based on an underlying financial structure; that is, plans and results are expressed in terms of budgetary allocations. Such information is more readily available from within the organization itself and is put together in the same way month after month.

Activities carried out at the operational control level are essentially objective in the sense that they focus on tasks for which there is quick and direct feedback of the results of a decision. Thus there is a better opportunity for

correct decisions to be objectively implemented. (Decisions made at the higher levels are subjective in that they involve a greater degree of management judgment.) Operational control data often are non-monetary and may be expressed, for example, in terms of man-hours. The data are tailored for individual events, many of which are repetitive (for example, student grade reports).

Some of the specific questions addressed by the three types of managers are shown according to management level on Chart II. In order to support the activities of the strategic planners, the information system must be able to supply, for example, useful trend data for some future time period.

Once policy is set, middle management must translate it into operating plans within the constraints of the budget. While it, too, relies somewhat on outside information (for example, what are the salaries for teachers of new math?), many of its decisions are based on internally available information. The budget, number of teachers, and the staff levels are known.

Lower management relies on internal and often historical information to supply answers to higher management levels. Its objective: how many teachers carrying less than a full load are qualified to teach typing? What percentage of students over the past five years have failed math courses at or above the fifth-grade level?

Viewed from one final perspective, it can be said that within an organization there are three primary functional areas, each with a different time frame, that can be supported by an information system. First, operations control (and planning): from a control aspect, the system can support the individual tasks carried out in doing the day-to-day job and, from a planning aspect, it can support the work done to allow one to do tomorrow and next year what he always has done. The jobs can be well defined and the information system procedures to support them can be well structured. Second, development planning: the work associated with

evaluating current and past practices, and devising and implementing new ways of doing the old job. The problems associated with this type of planning are still fairly structurable. Third, strategic planning: the work associated with changing the type of job, or the market and/or resources (or the organizational form) that can serve the new market (a new curriculum for slow learners). The problems addressed by this planning function are the hardest to structure and the most difficult for the information system to assist. Yet it is this area that probably could realize the greatest benefits from a formal information system (see Chart III). Note that the stages of planning correspond to phases of evaluations i.e. operation planning to product evaluation; development planning to process or input evaluation; and strategic planning to context evaluation.

Presentation of the Result of Planning to Management

When the planning process has run full cycle, management will have decided on the best alternative and have established policy to carry out its objectives. The kind of presentation of alternatives should be consistent with the level of management.

Generalized Information System (GIS)

A GIS performs four essential functions as a way describing the flow of information. The functions are: information acquisition and dissemination (IAD), decision-making (DM), execution (E), and transformation (T) (see Fig. 1).

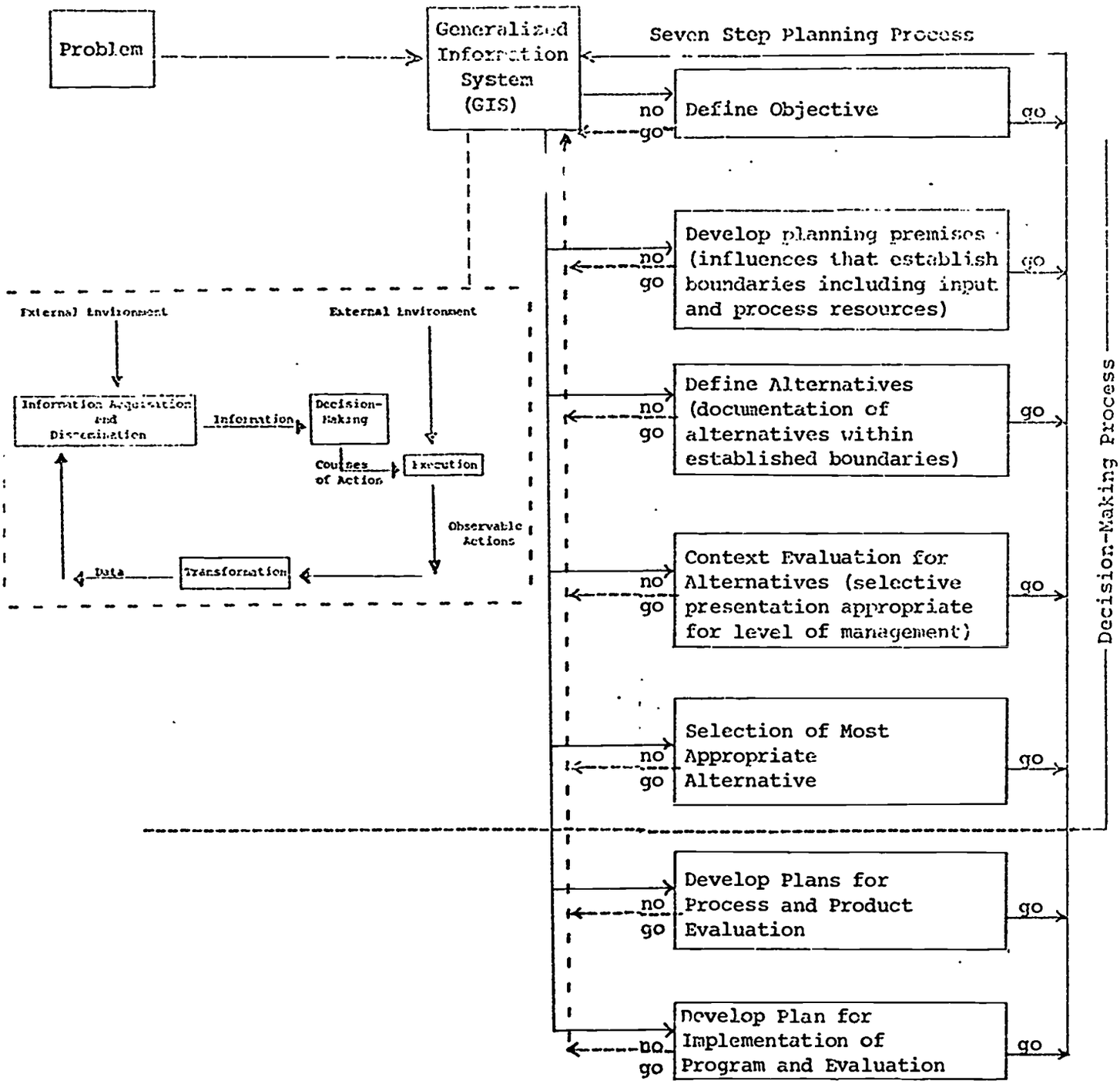
Each function is interrelated to other functions. Specifically, the DM collects three basic kinds of information that has been acquired by the IAD function. The three basic kinds of information thusly acquired by the IAD come from: the execution function, external environment, and other fundamental information sources i.e. to begin to answer X, Z information is needed, and in order to get Z, RST must be done. The model shows the components of the process of how information is transformed into a potential course of action.

The E function guided by the predictive model is responsible for transforming decisions into observable actions i.e. get RST done in order to obtain Z kind of information.

Observable actions must be transformed (T function) into useable data for the decision maker to determine what information can be used or needs to be obtained.

Each of the four functions, therefore, are a subsystem wherein activities unique to a particular subsystem are performed. An example is the process within the decision-making subsystem: analytic model of data, description of properties of data, interpretive rules for new data, selection of decision criteria, comparison of decision information to decision criteria, comparison of decision information to decision criteria. This process results in the development of a course of action to use or obtain additional information.

SUMMARY OF INTEGRATION OF PLANNING PROCESS AND INFORMATION FLOW



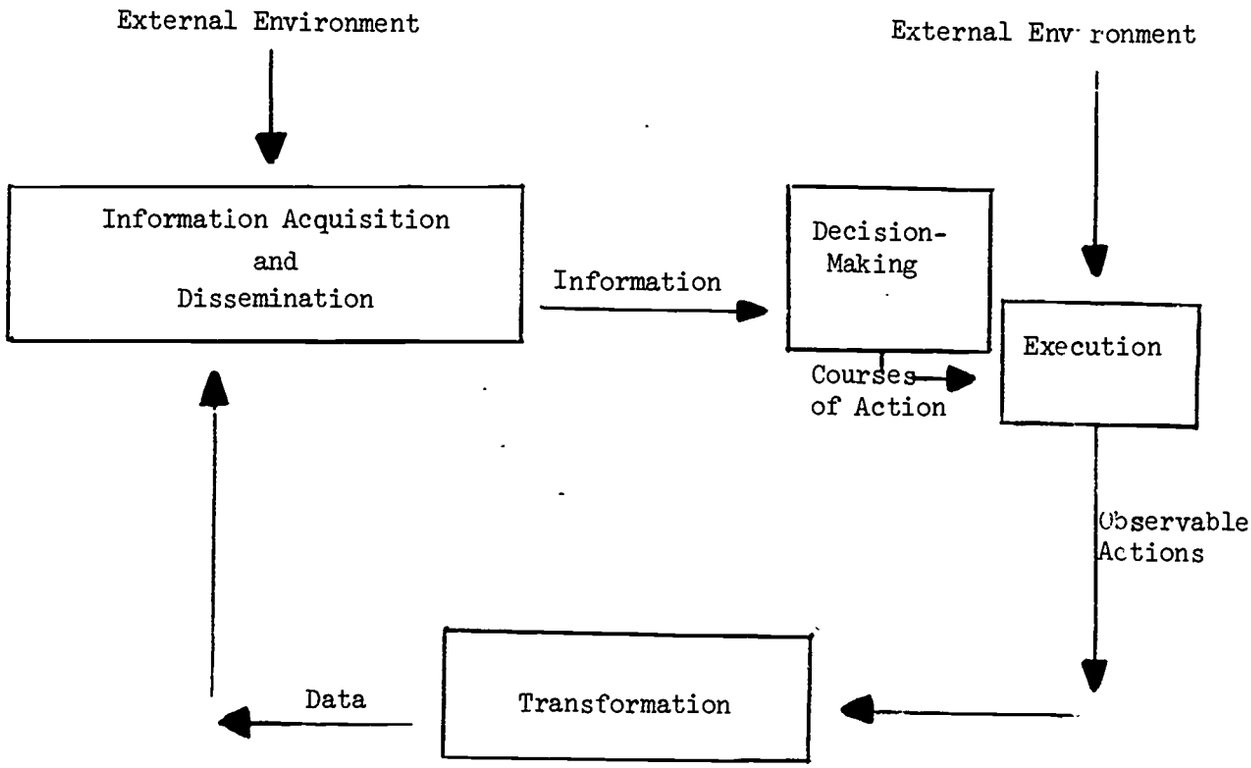


Fig. 1 Generalized Information System.

Chart I

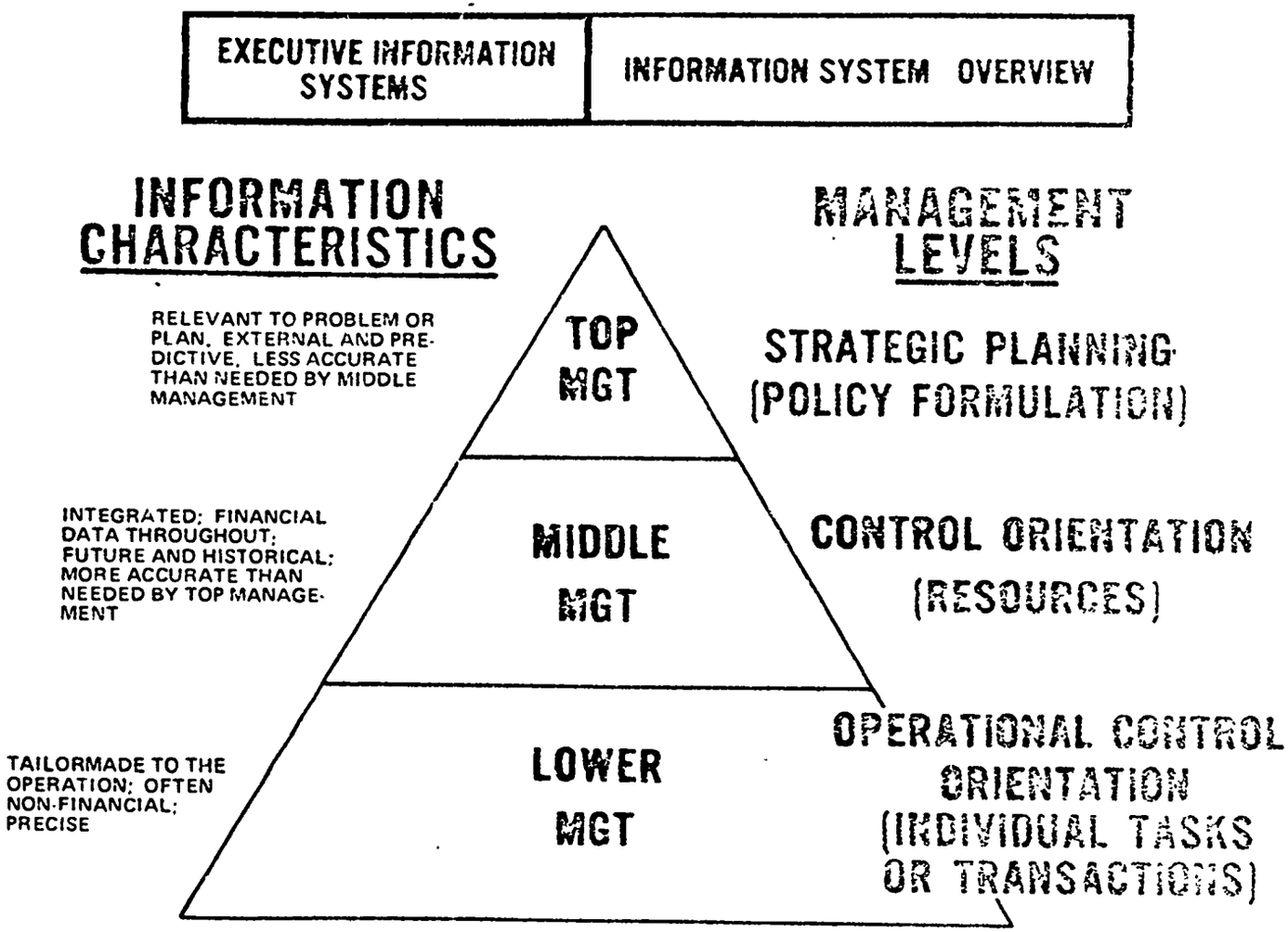
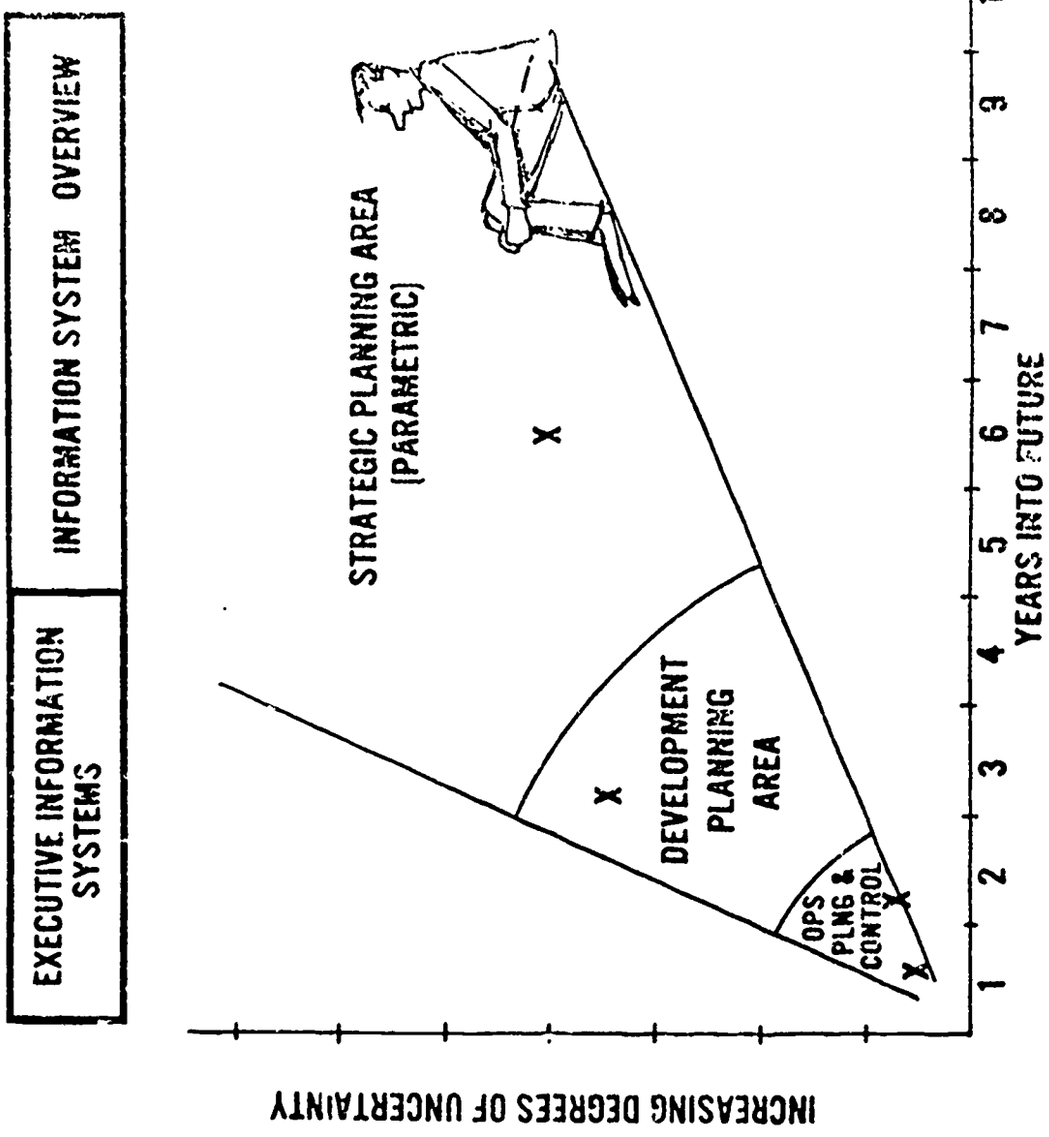

EXECUTIVE INFORMATION SYSTEMS
INFORMATION SYSTEM OVERVIEW
INFORMATION CHARACTERISTICS
MANAGEMENT LEVELS
RELEVANT TO PROBLEM OR PLAN. EXTERNAL AND PREDICTIVE. LESS ACCURATE THAN NEEDED BY MIDDLE MANAGEMENT
TOP MGT
STRATEGIC PLANNING (POLICY FORMULATION)
INTEGRATED: FINANCIAL DATA THROUGHOUT; FUTURE AND HISTORICAL; MORE ACCURATE THAN NEEDED BY TOP MANAGEMENT
MIDDLE MGT
CONTROL ORIENTATION (RESOURCES)
TAILORMADE TO THE OPERATION; OFTEN NON-FINANCIAL; PRECISE
LOWER MGT
OPERATIONAL CONTROL ORIENTATION (INDIVIDUAL TASKS OR TRANSACTIONS)

Chart II

EXECUTIVE INFORMATION SYSTEMS	INFORMATION SYSTEM OVERVIEW

TOP MGT	HOW SHALL WE UPDATE OUR CURRICULUM TO MEET THE DEMANDS OF HIGH SCHOOLS AND COLLEGES? WHAT WILL THE PROFILE OF OUR COMMUNITY BE IN FIVE YEARS? DO WE NEED FACILITIES FOR EVENING STUDY OUTSIDE THE SCHOOLS? WHEN? WHAT VOCATIONAL COURSES SHALL WE PREPARE FOR IMPLEMENTATION IN THREE YEARS? FIVE YEARS?
MIDDLE MGT	HOW CAN WE REALLOCATE OUR BUDGET TO MEET NEW COURSE REQUIREMENTS? HOW DO WE CORRELATE OUR REGULAR AND SPECIAL PROGRAMS IN NEXT YEAR'S FINANCIAL PLAN? WHAT TEACHERS ARE QUALIFIED TO TEACH THE NEW COURSES?
LOWER MGT	WHAT IS THE CURRENT TEACHING LOAD OF THOSE QUALIFIED TO TEACH NEW COURSES? HOW HAVE OUR GRADUATES PERFORMED ON COLLEGE BOARDS OVER THE PAST FIVE YEARS?

Chart III


EXECUTIVE INFORMATION SYSTEMS
INFORMATION SYSTEM OVERVIEW
STRATEGIC PLANNING AREA (PARAMETRIC)
DEVELOPMENT PLANNING AREA
OPS PLNG & CONTROL
INCREASING DEGREES OF UNCERTAINTY
1
2
3
4
5
6
7
8
9
10+
YEARS INTO FUTURE

BIBLIOGRAPHY

Operation PEP. Information System Overview. California: San Mateo County Board of Education, 1970.

Pepinsky, Harold B. People and Information. New York: Pergamon Press, 1970.

Ross, Joel E. Management by Information System. New Jersey: Prentice-Hall, Inc., 1970.

A MODEL FOR AN INTERNAL PROGRAM AUDIT SYSTEM

Robert C. Calvo

An internal audit system needs to be developed in line with local district plans and objectives. What records, paper and otherwise are needed for a district to audit itself?

If a district has an adequate system of internal audit, it can be easily audited by outside agencies. It can also evaluate particular areas of its instructional program to see where categorical and added local resources can be most effective.

For the local director of adult education, the above is extremely critical because the accounts of the district are maintained by the business manager of the local educational agency. The task of the director and the purpose of this paper is to pinpoint the information the director of vocational education needs to provide the business manager in order that the program of vocational education be auditable inside and outside the district.

Needs of the Business Manager

The business manager keeps the accounts of the district and somewhere along the way will build or approve the budget for the vocational education program. The establishment of accounts is dependent on input from the director of vocational education. We must note that separate accounts can be established in a ledger in a function that is routine to business offices.[1]

---

[1] California School Accounting Manual, 1971 Edition.

The program of vocational education must be defined. Is it limited to VEA funded classes? Is it a comprehensive total district and federally funded program? What courses are included and how are they accounted for? What population is included? In what parts?

It is useful to know the differences and uses of three business terms. The budget is an explanation of the educational program in dollars besides being a control instrument after adoption. A general ledger is a basic group of accounts which in turn are devices usually a separate page, sheet, or card for the accumulation of debits or credits. They show the date and posting reference plus some description of each posting.

Steps for the Director

The following steps are needed because the director is accountable for the program. The director should ascertain as early as possible that the district has received the funds. This can be done by checking with the district business office to verify receipt of a letter of encumbrance. He should also verify the establishment of a separate account number for each part of the program in which separate grants are made. He should sign or at least countersign or receive copies of all purchase orders (pre-numbered are preferable) for the program and coordinate ordering so that all deliveries for the vocational program are received by June 30. The director should know the salaries charged for the program and carry these on a work sheet of some fashion. He should compute and carry forward cumulative vocational education a.d.a. Equipment valued at $200 or more should be inventoried to show date of purchase, description, original cost, the basis for charging depreciation and the depreciation actually charged.[2]

---

[2]Selected List of Audit Procedures Applicable to Examinations of California School Districts or Funds Under the Control of County Superintendents of Schools, pp. 20.13-20.15.

Program Reporting

The local director should make an effort to maintain records in such a manner as to make annual reporting program analysis possible. In most cases, program definition will delimit the number of successful students (or "scalps" if you will) that he can claim. The staff in the program should be made aware of the reporting requirements early in the year. Facts, as the following are useful.[3]

Vocational Education Report of the District

1. Number of students in the program . . . . . _____
2. Number of students successfully completing vocational education courses (C or higher) . . . . . _____
3. Number of students eligible to go into another vocational education training component from vocational education course. . _____
4. Number of students who got a job full or part time that could be attributable to vocational education. . . . . _____
5. Number of students who were unsuccessful or dropped out of vocational education classes. . . . . _____
6. Number of teachers (Full time equivalents). . . . . _____
7. Number of administrators F.T.E. . . . . _____
8. Number of counselors F.T.E. . . . . _____
9. Number of paraprofessionals F.T.E. . . . . _____

The above information could be even kept by parts and be augmented by other questions from the state plan or the local plan.

By proceeding in such a manner, the local director can provide an audit trail that is strong and meet the needs of the business office as well. It also affords him a vehicle for ongoing and final evaluation of the program.

---

[3] California School Accounting Manual
California State Plan for Vocational Education, p. 29.

BIBLIOGRAPHY

California State Department of Education. California School Accounting Manual Bureau of School Apportionments and Business Officials, Sacramento, Office of State Printing, 1971.

California State Department of Education. California State Plan for Vocational Education, Sacramento, Bureau of Publications, Office of State Printing, 1971.

California State Department of Education. Instructions for Filing a Claim for Funds for Vocational Education, Sacramento, The Department, 1972.

California State Department of Education. A Suggested System for Recording the Expenditure of Vocational Education Funds, Sacramento, 1971.

California State Department of Finance. Selected List of Audit Procedures Applicable to Examinations of California School Districts or Funds Under the Control of County Superintendents of Schools. Sacramento, Audits Division, The Department, 1972.

Johns, Roe L., and Edgar L. Morphet. The Economics and Financing of Education. Second Edition. Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1969.

Los Angeles County Department of Education. Services of the Superintendent of Schools, Los Angeles, The Department, (Undated brochure).

Office of County Superintendent of Schools, Los Angeles County. A Guidebook of General Information. Los Angeles, 1970-1971.

Young, Robert C., et al. Vocational Education Planning: Manpower, Priorities, and Dollars. Washington, D.C., U.S. Government Printing Office, 1972.

ORGANIZATIONAL COMMUNICATION AND VOCATIONAL EDUCATION

Chris Chialtas

General Problem

It may be a truism that organizational decisions mirror the quality and wise use of information. Yet, it has been said that the most common, single deficiency of organizational management is the lack of, or failure to use properly adequate information. The trite and simple excuse, blaming a "breakdcwn in communication" for poor decisions, has served to relieve many a manager's conscience. A generic organizational problem, therefore, is the availing the supervisor or administrator with information that leaves him no such excuse.

Recent progress in computer capabilities, operations research and systems engineering have led to the development of a significant tool for the organizational decision points, by avenues of communication, to sources of appropriate information. The consideration of the entire system rather than the particular sender-receiver link within the system produces a whole which is greater than the sum of its individually informed parts.

Conceptually, it makes sense. We could, however, be exchanging one administrative excuse for another. It may be becoming more vogue to say, "What we have here is a breakdown in the system."

The manager of today is being provided with much more information than ever before, but he is being starved for needy information. The condition may be analogous to eating plenty while suffering from malnutrition because of a faulty

diet. The information system could be avalanching the decision-maker with faulty reports as well as rationing his access to appropriate reports.

The decision-maker's information problem can be categorized. He gets

1. more information than he needs
2. more information he has time to use
3. information he doesn't know how to use (lacks interpretation)
4. information he can't use because of
    a. too much detail
    b. not enough detail
    c. poor presentation
    d. improper emphasis or focus
    e. wrong time
    f. faulty form

A good system/report operation

1. Provides only that information one <u>can</u> use.
2. Focuses on information that demands corrective <u>action</u>
3. Filters through information, upon which one can and must act, <u>when</u> it is needed.
4. Provides information in a form which is useable.
5. Provides further <u>detail</u> <u>when</u> <u>necessary</u>.

<u>Information Problem in Vocational Education</u>

While there is much accurate data regarding the number of persons taking each course in vocational programs, there exists a problem of counting people more than once. To solve the problem by asking links in the system to count people only once, and thereby calculate the number of persons served in vocational programs, is to reject the chance to acquire and use data regarding the <u>individual</u> as well as categories of persons.

An easily expandable list of questions that could be answered through such a focus is as follows:

1. How many persons are we in fact serving?
2. Who are these persons; what are their characteristics; Black?, White?, Spanish-surname?, Disadvantaged?
3. Are we reaching minority groups? With what courses and programs? Is there systematic exclusion of such groups from any programs?
4. How many persons leave school equipped with more than one cluster of skills? What are they?
5. What excess costs can be associated to given groups?
6. With what competencies are students equipped at different stages of development? Upon termination?

Concentration on the individual using whatever factors of analysis deemed necessary is not now a systemic reality in vocational education. Decision and controls which require such information would be, at best, guesswork. The situation would be akin to describing a variety of items produced in a manufacturing plant by measuring the kinds and quantities of materials and other resources used up on the process. What products required which resources? We know what courses and programs we are providing, and we know many details about them. But what do we know about our products, the students?

Model System Yielding Needed Reports

The stated problem may be viewed by the student of organizational communication as one caused by a faulty (or non-existent) perpetual inventory information system. Our commodities are processed over time on a value-added concept. The situation is much like the case where petroleum, in various stages of refinement, becomes a distinctly different and marketable product.

Any viable perpetual inventory system can provide a manager with information regarding the status and description of a given commodity. Which items are in stock? What classes of items are in demand? Do we have enough?

Decisions can be made and controls instituted at any point necessary--the information is accessible at any time. For example, a reorder decision can be made when numbers of items reach a distressingly low level (Educationally speaking, promotion and recruitment efforts can be signaled).

The cumulative record is a kind of perpetual inventory information system. It has its merits. However, data normally enters the system after the fact, when the student has completed a course, etc. In addition, problems including too much data and data in unusable forms discourage the adoption of this information system.

What is needed is a system wherein data can be introduced at any time and which allows for retrieval of information about individuals and groups on the basis of selected factors or criteria.

A coding pattern is the key. A useable code already exists--the social security number. In fact, if vocational education purports to prepare individuals for the labor market, the system could additionally provide for automatic applications for needed social security numbers.

The logical source of the required information would be the classroom teacher, on much the same procedural basis as that used in the impact survey in the nation's public schools.

The form to be used would, of course, require a feasibility analysis. Conceivable porta-punch or mark-sense control and detail cards could be used. Sorting and tabulating equipment could provide the vocational education administrator--at any level--with reports about persons, groups, or pre-planned factors upon demand.

Data appropriately summarized for use at successively higher levels within the organizational structure would be possible by the use of standardized data collection forms and predetermined factor codes.

There presently exist "Selective Analysis and Inventory Control" information

systems within industry that are conceptually transportable to the case of vocational education.

BIBLIOGRAPHY

Ackoff, Russell L. "Management Misinformation Systems," Management Science, 14 (December, 1967), 147-156.

Beged-Dov, Sharon G. "An Overview of Management Science and Information Systems," Management Science, 13 (August, 1967), 817-831.

Benedon, William. Records Management. First Edition. Engle-wood Cliffs, New Jersey: Prentice-Hall, 1969. 272 pp.

Bonner, William H. "Style Preferences for Marketing Research Reports," American Business Writing Association Bulletin, XXVII (December, 1962), 21-22.

Caplan, Edwin H. "Management Accounting and the Behavioral Sciences," Management Accounting, XLX (June, 1969), 41-45.

De Boer, Lloyd M. "The Dummy Report: One Answer to...," American Business Writing Association Bulletin, XXIX (April, 1965), 20-22.

Estrin, Herman A. "Why Write Effective Reports?" American Business Writing Association Bulletin, XXVII (April, 1963), 20-25.

Farrel, Thomas. "Reports in Perspective, "American Business Writing Association Bulletin, XXVII (may, 1964), 28-31.

Finch, Alton V. "The 'Time-honored' Objection in the Business Report Writing Course," American Business Writing Association Bulletin, XXV (March, 1961), 10-14.

Friedman, Paul I. "Effective Control Through Responsibility Reporting," Systems and Procedures Journal, 18 (November-December, 1967), 24-26.

Gamer, William F. "Operations Control Reports for Management by Exception," Management Review, 58 (June, 1969), 54-57.

Gerfen, Richard C. "Executive Utopia: Better Reports and Fewer of Them," American Business Writing Association Bulletin, XXVI (February, 1962) 4-11.

_____. "Inadequate Records Pave the Road to Bankruptcy," The Office, 61 (June, 1965), 100-104.

Keller, Wayne I. "The Link Between Accounting and Management," Management Accounting, XLX (June, 1969), 36-40.

Munich, John. "Management by Problem Communication," Systems and Procedures Journal, 18 (September-October, 1967), 10-15.

Negus, Alan G. "Expeditious Reporting: Its Effect on Management Decision-making," Systems and Procedures Journal, 15 (September-October, 1963), 26-28.

Norton, John H. "Information Systems: Some Basic Considerations," Management Review, 58 (September, 1969), 2-8.

Pintado, Jose Manual. "Responsibility Accounting," Management Services, 2 (March-April, 1965), 34-40.

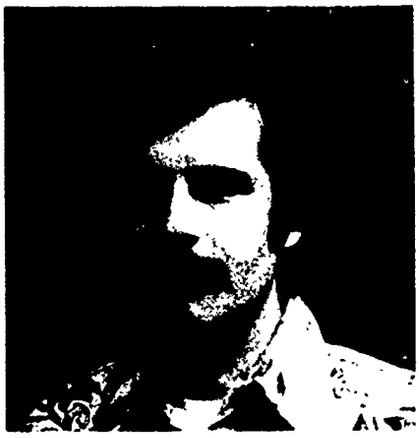
Prince, Thomas R. Information Systems for Management Planning and Control. Homewood, Illinois: Richard D. Irwin, Inc., 1966. 416 pp.

Robins, William R. "Getting Better Results from Management Information Systems," Management Review, 55 (February, 1966), 51-54.

Staiger, David L. "What Today's Students Need to Know About Writing Abstracts," Journal of Business Communication, 3 (October, 1965), 29-33.

Thayer, Lee. Communication and Communication Systems. First Edition. Homewood, Illinois: Richard D. Irwin, Inc., 1968. 375 pp.

Churchill, Neil C., and Myron Uretsky. "Management Accounting Tomorrow," Management Accounting, XLX (June, 1969), 46-53.



A MODEL FOR INSERVICE EDUCATION

Thomas Alan Dean

The Problem

The quality of a vocational education program is directly dependent upon the caliber of the program's teacher. An instructor who has lost contact with modern developments within his instructional area is failing to meet the needs of his students and will soon find his program floundering. No amount of money or facilities can compensate for an inadequately prepared teacher.[1]

The rapidity of technological advancements make it increasingly difficult for vocational educators to keep abreast these developments. Programs of inservice education have two main objectives. The first objective is related to keeping the instructor up to date in his instructional area, while the second objective is to keep him informed of new principles in teaching and learning.[2] Programs of inservice education can therefore be classified into two categories: (1) technical inservice education programs, and (2) professional or academic inservice education programs. Too much emphasis has been placed on professional inservice education programs and not enough on the technically-oriented programs.

If programs of inservice education are going to meet the needs of the vocational instructors, there must be a shift of emphasis from professional programs

---

[1]M.L. Barlow, Professional Development in Vocational Teacher Education (A National EPDA Project). A Report to the California State Board of Education, EPDA Part F. Sec. 553, Project No. 2501, March 1972, P. 1.

[2]M. L. Barlow, "Professional Development in Vocational Teacher Education: Foundations for Quality," American Vocational Journal, 46:29-30, November, 1971

to technical programs.

Levels of Administering Inservice Education Programs

There are several levels at which inservice education programs can be administered. These levels would include: (1) the state level, (2) regional or county level, (3) college or university level, and (4) district level.

The State Director of Vocational Education has the responsibility to coordinate teacher training in the appropriate areas or levels of vocational education in cooperation with the State Board Staff in accordance with the California State Plan for Vocational Education.[3] In fulfilling this responsibility, a state master plan for inservice teacher education should be developed. This plan should provide for a committee to bring together all levels of vocational teacher education to make possible a coordinated effort in meeting these inservice needs.[4]

This paper will, however, be primarily concerned with programs of technical inservice education at the district level.

Technical Inservice Education at the District Level

It is recognized that educators should contribute to improving their technical competency without administrative direction, however, it is the responsibility of the district for which they work to specifically plan and administer activities to promote continuous development of their personnel.[5]

Various activities which have been developed to provide technical inservice

---

[3]California State Department of Education, California State Plan for Vocational Education (Sacramento: Office of State Printing, 1971), p. 9.

[4]Barlow, op. cit., p. 9.

[5]S. E. Froberg, A Guide for the Development of Inservice Education Programs (Tampa: Florida Regional Medical Program, May, 1971), p. 4.

education at the district level include:

1. College Courses
2. Workshops
    a. Short
    b. Continuing
3. Symposiums
4. Field Trips
5. Conventions
    a. Local
    b. State
    c. National
6. Teacher Visitation Days
7. Trade Schools
8. Educational Television
9. Independent Study

All of these programs have their place in an inservice education program, but they each are partially inadequate for one or more reasons. Each of these programs is designed to be conducted during "out-of-school" hours, entail personal financial cost, or meet the needs of only a few instructors. New programs must be designed that will minimize these inadequacies.

In developing effective inservice education programs, the following useful principles should be considered:

1. Instruction should begin with the problems or needs that are most immediate.
2. The program should be conducted during the regular teaching workday.
3. The program should be provided at no cost to the instructor.
4. The program should be flexible to shifting needs.

5. The program should meet the needs of all instructors, not just a select few.
6. The program should determine where the teachers are and begin from there.
7. The program should move step by step into more complex problems.
8. Be content with small beginnings.
9. Keep the programs organizational set up simple.
10. Work with the participants in the program, not for them.[6]

A Model Program

A program of technical inservice education which could encompass most of these principles would be an exchange program with industry. A program of this type is called for in the California State Plan for Vocational Education. Those persons writing the state plan stated," . . . attention will be given to the development of arrangements whereby vocational education teachers may participate in teacher exchange programs designed to further develop both their instructional and subject matter competencies."[7] Where, but in industry, can a vocational instructor best develop contemporary technical skills or subject matter competencies?

This exchange program would be a direct one-to-one exchange between personnel from an industry and a school. An industry involved in the technical skills required by a vocational educator would be selected and asked to participate. If management from that industry indicates that they would be willing to participate, an exchange would be made.

The exchange would last for approximately one week. During this time, the

---

[6]Froberg, op. cit., p. 14

[7]California State Department of Education, op. cit., p. 28.

vocational teacher would be able to explore the industry and to get involved in developing the skills offered by the industry. The vocational educator is therefore given an opportunity to gain "hands on" experiences in skills within his areas of weakness.

The representative from industry, on the other hand, would conduct the vocational educator's classes in the absence of the instructor. He could present more up-to-date information with regard to job opportunities and job descriptions found within his industry. He could further present much valuable information relative to job application and job interviews. Limited individual guidance could also be furnished.

The industrial representative would be credentialed as a "day-to-day" substitute teacher and therefore would need to be a four-year college graduate. Many industries would be willing to pay the twenty dollar credentialing fee. It is suggested that the representative have some background in public relations.

No monies would be involved other than the credentialing fee. Each employer would continue to pay their own employee at his normal rate.

It is important to note that the exchange is on a person-for-person basis, however, it is not a job-for-job basis. The instructor will not fill the industrial representative's normal job.

Prior to the exchange, these two individuals will meet informally to discuss any anticipated problems. The teacher will brief the industrial representative on his classes and their normal behavior and the representative will help the teacher outline reasonable goals which might be fulfilled in the exchange. The instructor will also complete a flexible schedule which he will follow during his visit to industry. These two individuals should maintain channels of communication throughout the week of the exchange.

At the end of the exchange week, the students could, if feasible, participate

in a field trip to the industry. This could be useful as a tool for class discipline.

An evaluation of the program would follow the exchange. Both individuals would complete a simple evaluation form designed to determine the program's merits.

This program not only fulfills most of the principles of an effective inservice education program, it also provides the student with much needed up-to-date occupational information and guidance relative to the subject area.

This program has been presented to the Directors of Vocational Education and Inservice Education, and the Consultant for Industrial Education for the Long Beach Unified School District at an informal meeting. These individuals responded favorably to the proposal and further presented it to the Assistant Superintendent of Schools. Here again the proposal was received favorably. The proposal is still in a developmental stage, but it is hoped that a pilot program such as this can be initiated this school year.

Other Programs

Other programs which should be investigated to determine their merits would be:

1. A budget which provides for release time, incentive pay, sabbatical leave, and tuition pay for developing technical skill.
2. Salary schedules which equate vocational and academic preparation.
3. College credit for occupational experience.
4. The use of correspondence courses in providing technical knowledge. Possibly using many forms of media.
5. The developing of teacher-exchange programs, where teacher specialists (area skill specialists) could be exchanged between schools.
6. Mini courses with field teachers to present them throughout the state.
7. More extensive use of workshops and seminars to provide more skills to

more teachers, not just a select few.

8. Better dissemination of information relative to inservice education, including exemplary programs.
9. The use of industry to train vocational educators during out-of-school hours.
10. The use of industry to finance inservice education efforts.
11. The use of a greater percentage of federal funds for inservice education than presently exists.
12. A listing of employment opportunities for vocational education teachers during vacation periods. These positions should be local and relate directly to subject areas.[8]

---

[8]Barlow, op. cit., p. 26-65.

INDUSTRY

VOCATIONAL INSTRUCTOR:

1. EXPLORES INDUSTRY— FOLLOWING A PREDETERMINED SCHEDULE
2. CONCENTRATES ON AREAS OF WEAKNESS
3. GAINS "HANDS ON" EXPERIENCES
4. EVALUATES PROGRAM MERITS

1 WEEK EXCHANGE (APPROX.)

INDUSTRIAL REPRESENTATIVE:

1. PRESENTS JOB OPPORTUNITIES & GIVES JOB DESCRIPTIONS
2. DISCUSSES JOB QUALIFICATIONS
3. DISCUSSES PROCEDURES FOR JOB APPLICATION
4. DISCUSSES JOB INTERVIEWS & THEIR IMPORTANCE
5. PROVIDES LIMITED INDIVIDUAL GUIDANCE
6. IS CREDENTIALED AS A SUBSTITUTE TEACHER

SCHOOL

BIBLIOGRAPHY

Barlow, M. L. Professional Development in Vocational Teacher Education (A National EPDA Project). A report to the California State Board of Education, EPDA Part F, Sec. 553, Project No. 2501, March, 1972.

_____. "Professional Development in Vocational Teacher Education: Foundations for Quality," American Vocational Journal, 46:29-30, November, 1971.

California State Department of Education. California State Plan for Vocational Education. Sacramento: Office of State Printing, 1971.

Froberg, S. E. A Guide for the Development of Inservice Education Programs. Tampa: Floride Regional Medical Programs, May, 1971.

MODEL FOR THE ACQUISITION, MAINTENANCE, REPLACEMENT AND DISPOSAL OF EQUIPMENT

Dale Dobson

General Statement

It is apparent that most vocational education programs are considerably more costly to operate than the traditional types of instructional programs. Most estimates run in the neighborhood of 60 to 90 percent higher than other programs.

The second major concern is over the obsolescence of equipment in the instructional program. It is a matter of relevance of keeping the equipment up to date and in good repair.

Acquisitions

There are three basic types of acquisitions: 1. Budgeting, 2. Donations, and 3. Performance budgeting.

Kinds of equipment in the vocational education field:

a. Classroom or lab equipment that is kept in the instructional station.

b. Supplemental equipment, that equipment that is kept in a common area, perhaps used by many vocational instructors. This equipment is brought to the classroom area.

c. Resource equipment, that equipment that is kept in an area where students travel to the area. A learning resource center is an example of this type of equipment.

Selection

1. Equipment specifications: When purchasing equipment for instructional

use, care must be taken to adequately define the equipment. This is referred to as equipment specifications.

When specifying equipment, include name of equipment, model, number, technical information and other additional equipment needed to make the equipment ordered, work. The more detailed information, the better the chance the equipment will do the job required.

2. We all try to get the most for our money. But don't sacrifice quality for quantity--it doesn't pay. Buy good name brand equipment that has the service and back-up facilities.

Evaluation

A formula has been developed to establish an Index Number to be used in determining when equipment should be acquired. Three criteria are used: (1) number of work stations created; (2) number of students who will benefit from the new work stations; and (3) the dollar cost.

$$\text{Index number} = W_1 W_2 W_3$$

W_1 = Work stations created X number of classes using the equipment

$$W_2 = \frac{\text{New stations created X number of classes}}{\text{Total number of existing work stations}}$$

$$W_3 = \frac{\text{Cost of equipment X total cost of program}}{\text{Total number of students in program}}$$

Acquisition of equipment is determined by the Index Number. The higher the Index Number, the greater the priority.

Maintenance

There are two types of basic maintenance schedules: Preventive or contract and break and repair.

Replacement

Replacement should be based on the following factors: 1. relationship of programs to regional ranking of priorities; 2. amount of instructional dollars

being spent on program maintenance; 3. frequency of repair; and 4. initial cost.

Districts should budget a specific amount each year based on the following formula: Last years equipment lost + 10 percent. This money should be set aside in a specific account for the replacement of equipment.

Disposal

The provision for the disposal of personal property owned by the district is spelled out in the State Board of Education Code. Disposal can be determined by the following criteria: 1. amount of use; 2. years of use and priority of program; and 3. an arbitrary index based on an instructor determination. In any case, disposal requires a unanimous decision of the local board.

Summary

All districts need to develop certain policies for the control of hardware. State law, local priorities and instructional priorities can and should determine these policies.

ARTICULATION IN VOCATIONAL EDUCATION

V. Edward Ellis

Introduction

The need for articulation is increasing in direct proportion to the growing complexity of vocational education. Career education has extended the vertical continuum of vocational education to include the elementary school program. The concept of salable skills for all students has broadened the potential student population of vocational education at the secondary and post-secondary levels. Vocational education is also preparing students to enter an increasingly diverse occupational structure. The interaction between individual student needs and various institutions of learning at various levels poses a substantial challenge for the process of articulation.

A rather detailed definition of articulation can be found in Handbook VI, Standard Terminology for Curriculums and Instruction in Local and State School Systems:

> The manner in which the classroom instruction, curricular activities and instructional services of the school system are interrelated and interdependent, the aim being to facilitate the continuous and efficient education program of the pupils (e.g., from one grade to the next; from elementary to secondary school; and from secondary school to college), to interrelate various areas of the curriculum (e.g., Fine Arts and Language Arts), and/or to interrelate the school's instructional program with the program of out-of-school educational institutions (e.g., the home, church, youth groups and welfare agencies).[1]

---

[1]M.G. Linson, James M. Wilson, and M.G. Hunt. "Is Articulation Possible?," American Vocational Journal, 46:29-31, October, 1971.

Problems Related to Articulation

Linson, Wilson, and Hunt question the possibility of articulating vocational education programs within institutions which have an existing articulated program of academic education. Their reply is: "yes, but only if the vocational objective of the individual student who will not obtain a baccalaureate degree becomes paramount to all other considerations."[2] This conclusion points up the conflict which often develops between vocational education program objectives and academic admission requirements. The vertical mobility of vocational students, within the hierarchy of educational institutions, has been limited by the differential requirements of vocational and academic programs. Occupational students should not be blocked from acquiring an academic degree because of their course work in vocational education if they are otherwise qualified.

Another common problem concerns the course overlap between secondary and post-secondary programs. Students often complain that they are involved in subject matter at the community college level which was previously covered at the secondary level. This duplication of effort can be regarded as a waste of resources.[3] The impairment of student interest and motivation is also likely to occur. Duplication of training effort on a regional or state basis may result in a serious oversupply in the labor market.[4]

A system of articulation can serve student needs related to these problems and many others not included in this discussion.

---

[2] Ibid.

[3] Ibid.

[4] Harmon K. Howard. "Vocational Education in the Community College," American Vocational Journal, 45:24-5, October, 1970.

A Proposed Model of Articulation

The proposed model considers two aspects of articulation. The first aspect relates to the problem of articulation between various institutions at various levels. Secondly, articulation of a total vocational program within a given institution will be considered.

Inter-institutional articulation. Advisory committees have long been an important aspect of vocational education programs. Articulation between interfacing institutions can be effected through an advisory committee which jointly serves the involved institutions. Committees of this type might exist between elementary and junior high school, junior high school and senior high school, and senior high school and the community college.

The undesirable overlap of course content and requirements between levels could be virtually eliminated. Students would be assured of a smooth transition between levels.

Articulation meetings between interrelated institutions is yet another means to implement the process of articulation. These meetings can involve instructional staff, administrators, and students of two or more institutions. The format of such meetings can assume many different patterns suitable to the objectives of inter-institutional articulation.

Intra-institutional articulation. Oakland Community College of Bloomfield Hills, Michigan has a rather innovative program which will serve as a basis for articulating a program of vocational education within a given institutional setting.

Oakland Community College applied the core-cluster concept to achieve greater articulation between the various vocational programs. Introductory seminars are used to familiarize students with the variety of job opportunities in each cluster. Initially, the student learns skills which are common to the occupations in the

cluster he has selected. This assures the student he will be able to shift into another occupational area with relative ease.

All student programs of study are highly personalized. Individualized educational sequences are developed on the basis of diagnostic tests. A "cognitive style map" is created for each student. This document not only considers appropriate course content but also includes a prescription for various instructional media. The cognitive map is used as a tool in developing a personal educational prescription. This is a product of student and faculty consideration based on both objective and subjective measures of student characteristics. A process of frequent updating assures the relevance of each educational prescription.

The instructional staff is differentiated and consists of regular faculty members augmented by paraprofessionals and student tutors. "Scheduled classes remain an essential part of the instructional approach and teachers remain the student's principal point of reference."[5]

Students are offered a wide variety of instructional settings including: (1) regular classes, (2) small group discussions, (3) tutorial sessions, (4) individualized instruction, (5) carrel arcades for independent study, (6) mini-courses, (7) other arrangements as required.

A variety of instructional media is available to Oakland Community College students including: (1) audio tapes, (2) video-taped lectures, (3) films, (4) filmstrips, and a variety of highly specialized equipment.[6]

---

[5]Joseph E. Hill and Derek N. Nunney, "Career Mobility Through Personalized Occupational Education," American Vocational Journal, 46:36-9, October, 1971.

[6]Ibid.

BIBLIOGRAPHY

Gleazer, Edmund J. This is the Community College. Boston: Houghton Mifflin Company, 1968.

Grable, John. "High School and Junior College--Allies or Adversaries?," Clearing House, 46:195-9, December, 1971.

Grossman, Charles, et al. Migration of College and University Students in the United States. Seattle: University of Washington Press, 1968.

Hill, Joseph E. and Derek N. Nunney. "Career Mobility Through Personalized Occupational Education," American Vocational Journal, 46·36-9, October, 1971.

Hoover, Jack L. "Articulation--The Big Picture," College and University, 45:416-18, Summer, 1970.

Howard, Harmon K. "Vocational Education in the Community College," American Vocational Journal, 45:24-5, October, 1970.

Joint Committee on Junior and Senior Colleges. Guidelines for Improving Articulation Between Junior and Senior Colleges. Washington: American Council on Education, 1966.

Keith, Charles W. "Capstone Curriculum for Two Year Technicians," American Vocational Journal, 45:29-30, March, 1970.

Linson, M. G., James M. Wilson, and M. G. Hunt. "Is Articulation Possible?," American Vocational Journal, 46:29-31, October, 1971.

Menacker, Julius. "Articulation Between High School and College," Clearing House, 44:220-3, December, 1969.

Olson, Jerry C. "Decision Making Power: Sign of Articulation," American Vocational Journal, 46:32-5, October, 1971.

Shane, Harold G. "A Curriculum Continuum: Possible Trends in the 70's," Phi Delta Kappan, 51:389-92, March, 1970.

Smith, Albert K. "Bridging the Gap--High School to Community College," Junior College Journal, 40:33-6, February, 1970.

Smith, Ethel M. "Articulated Programming: A Factor in Career Education," American Vocational Journal, 47:58-9, March, 1972.

Sobol, Thomas. "The Broader Meaning of Articulation," Phi Delta Kappan, 53:25-9, September, 1971.

A MODEL FOR EQUIPMENT PURCHASE, MAINTENANCE AND REPLACEMENT

Larry Hagmann

Developing and maintaining an adequately equipped vocational education shop or laboratory is a problem faced by most vocational education instructors. Many times a department chairman does not consider the present condition of each shop or the expense of equipment in the various areas. He merely alots budget money on a per-student carried basis.

In originally considering this problem, I felt that a model for vocational education could be adapted by looking at information or systems developed by industry. However, upon looking over this type of material, I found that the prime motive in industry for equipment purchase or replacement is a cost-production-profit ratio problem, which is really not the major concern in vocational education. The major problem in vocational education is the development of the proper types of training stations for each curricular area in relation to the average number of students carried in the program.

The system suggested here is really a gathering of present data which is readily accessible to most vocational instructors. These types of data are: average yearly enrollments, occupational advisory committee recommendations regarding equipment, present equipment condition record, record of expenses and down time for each machine, machine use record for each machine, comparison record of equipment accuracy to accuracy required in the occupation, and an up-to-date collection of manufacturer's catalogs.

Suggested samples of each of these are as follows:

EQUIPMENT CONDITION LOG

Type of Equipment_____ Manufacturer _____

Code No. _____ Date of Acquisition_____ Purchase Price_____

Equipment Condition:

1972-73	No. of repairs	_____
	Repair costs	_____
	Down time	_____
	Hours of use	_____
	Accuracy	_____
1973-74	No. of repairs	_____
	Repair costs	_____
	Down time	_____
	Hours of use	_____
	Accuracy	_____
1974-75	No. of repairs	_____
	Repair costs	_____
	Down time	_____
	Hours of use	_____
	Accuracy	_____

ADVISORY COMMITTEE COMMENTS AND RECOMMENDATIONS ON EQUIPMENT

1972-73 Comments on present equipment:

Recommendations for new or additional equipment:

1973-74 Comments on present equipment:

Recommendations for new or additional equipment:

DAILY EQUIPMENT USE RECORD

(name of equipment) _____

	Hours	Initials	Hours	Initials	Hours	Initials	Hours	Initials
11-1-72								
11-2-72								
11-3-72								
11-6-72								
11-7-72								
11-8-72								
11-9-72								
11-10-72								
11-13-72								
11-14-72								
11-15-72								
11-16-72								
11-17-72								
11-20-72								
11-21-72								
11-22-72								
11-23-72								
11-24-72								

YEARLY ENROLLMENT RECORDS

1972-73 Number of classes _____ Total number of students _____

1973-74 Number of classes _____ Total number of students _____

1974-75 Number of classes _____ Total number of students _____

1975-76 Number of classes _____ Total number of students _____

1976-77 Number of classes _____ Total number of students _____

1977-78 Number of classes _____ Total number of students _____

If such a system is maintained and the present equipment is, for example, not in line with the advisory committee's recommendations or the equipment is used for each hour of every class period and the objectives for each student cannot be met; then the instructor has ample evidence when he meets with the administration for additional equipment fund requests.

A MODEL FOR MAJOR EQUIPMENT PURCHASE, MAINTENANCE, REPLACEMENT, AND DISPOSITION

Vern Halcromb

In response to federal law, the state of California has developed a state plan for vocational education and is accountable for the implementation of this plan.[1]

In order to make the implementation of the state plan most effective, the state relies upon each district to develop, and annually update a 5-year plan for vocational education based on measurable objectives. Periodic evaluation of vocational programs is one method of determining whether objectives of the program are being met. Important to any comprehensive evaluation are its facilities including supplies, teaching aids, and instructional materials.

Most districts have a system of inventory that serves the purpose of accounting for equipment. In the case of larger districts, this is by necessity a very elaborate and costly project.

There are three factors that determine replacement of equipment-program changes, age, and condition. A good deal of expense (inventory control and warehousing) go into this process, much of it for major equipment that has long since become obsolete because of program changes, age, and condition. Every district, then, must concern itself with the following points in order to be accountable for proper maintenance and control of equipment:

---

[1]California State Department of Education, California State Plan for Vocational Education, Office of State Printing, 1971.

Inventory

Deletion from inventory

Time involved in disposing of equipment

Depreciating equipment from major-to-minor

Vehicle registration

Adding transportation costs to the price or purchased items included in proposals

Term of accountability

Disposal of equipment

Storage

Excess personal property

Terminology and definitions

Estimated cost of public school operation in 1970 was $70 billion an increase of 160 percent over 1960 figures. The State of California has approximately 13 percent of the nations vocational education students. Plant maintenance, operation, and equipment cost represent 11 to 12 percent of the budget expenditures for the state's vocational education programs.[2]

With increased emph[illegible]onal education, greater numbers of students, teachers, and administrat[illegible] of operating vocational education programs will continue to rise. In an attempt to maximize efficiency and keep equipment purchase, maintenance, and replacement costs down, the following model suggests that:

Major equipment purchases in excess of $300. should be made at the state level.

Through the Bureau of School Planning - these purchases would be based on district proposal including equipment specifications.

---

[2]Melvin L. Barlow, Governor's Task Force on Manpower, Vocational and Manpower Education, International Hotel, Los Angeles, May 11, 1972.

State should maintain warehouses for excess major equipment.

State should give an allowance to districts for equipment over 5 years old. This allowance should be made on a depreciation percentage, plus an adjustable percentage rate based on inflationary trends.

In-school inventory and quality control sheets should be standardized.

Coded categories indicating quality of equipment should be used statewide.

N = new, G = good, F = fair, O-obsolete

Whenever equipment is termed obsolete, two letters should appear on the inventory control card to indicate condition, for example, G/ 448 would mean that the piece of equipment is in good condition purchased in April, 1948, and is termed obsolete because of present program needs.

Code No. G0448

INVENTORY CONTROL CARD

Type of Equipment Machine Lathe Manufacturer Milwaukee

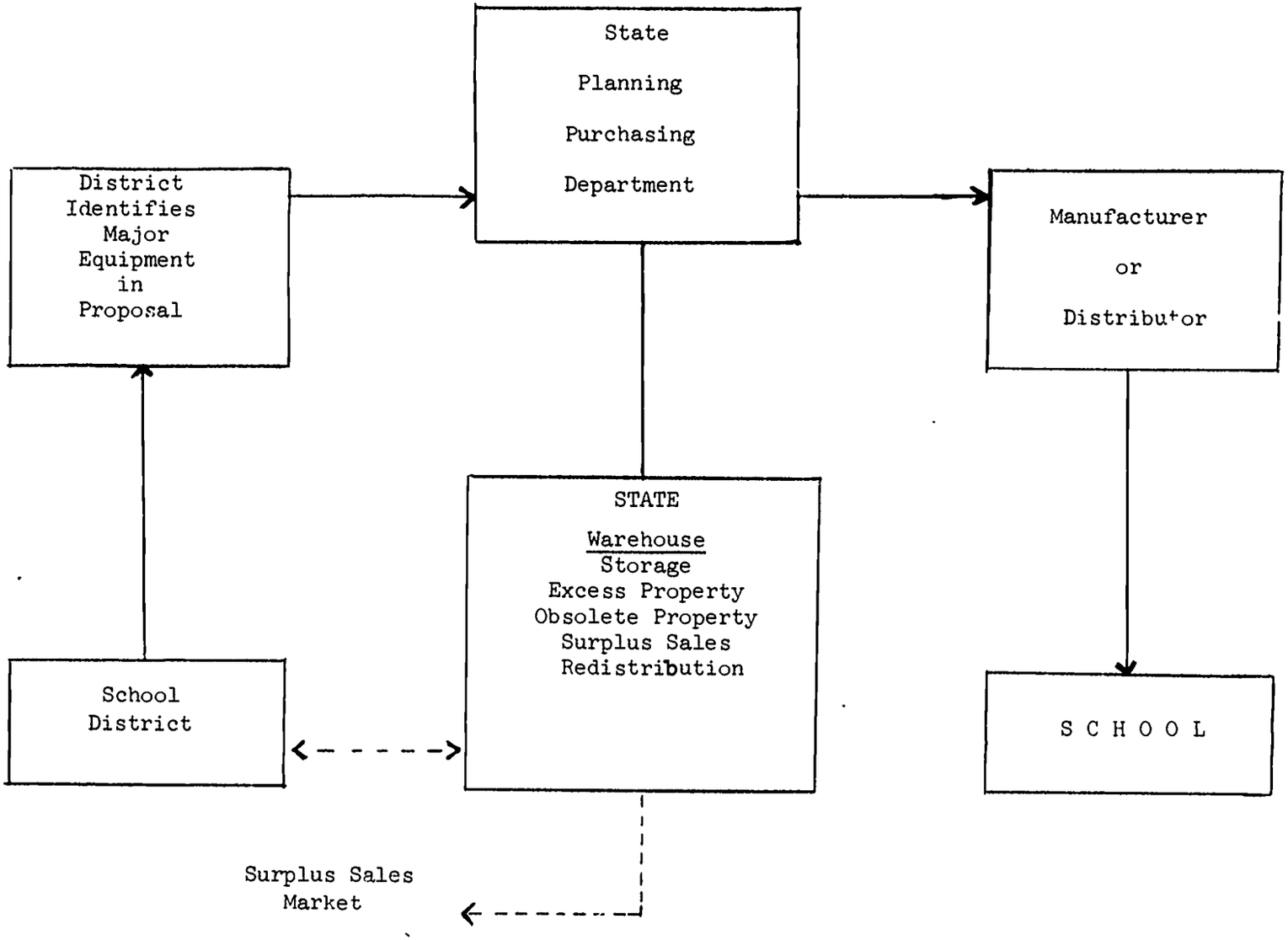
Finish Machine Gray Size 2 inch Electrical Specs. 3-HP-30-440V

Serial number M 481617743

Maintenance Record

Repairs	Costs

Spare Parts


State
Planning
Purchasing
Department
District
Identifies
Major
Equipment
in
Proposal
Manufacturer
or
Distributor
STATE
Warehouse
Storage
Excess Property
Obsolete Property
Surplus Sales
Redistribution
School
District
S C H O O L
Surplus Sales
Market

BIBLIOGRAPHY

Barlow, Melvin L. Governor's Task Force on Manpower. Vocational and Manpower Education. International Hotel, Los Angeles, May 11, 1972.

California State Department of Education. California State Plan for Vocational Education. Office of State Printing, 1971.

HOW CAN AN INTERNAL AUDIT SYSTEM BE DEVELOPED IN LINE WITH LOCAL DISTRICT PLANS AND OBJECTIVES?

Allen Lawson

The Problem: How can an internal audit system be developed in line with local district plans and objectives? What types of records, software, etc., would be practical to provide effective internal audit control? Apparently state auditors cannot provide a single simple system applicable to all districts because of the wide variations of educational programs. But what can a local district do, before outside auditors visit, to minimize problems?

Because the problem is essentially one of maintaining accurate and easily-accessible records, the solution I suggest is Electronic-Data-Processing (EDP). Since some smaller districts might immediately raise questions concerning "expensive computers," I will outline a plan for the smallest poorest district, with computer usage, and expand somewhat from there to indicate subsequent advantages from more experienced employment.

"EDP" normally refers to a system which includes a computer plus auxiliary or peripheral equipment. Considering the point of view of a small poor district unwilling to consider unusual expenses, and unable to properly understand today's highly sophisticated computer technology, we will find the auxiliary equipment a good starting point.

This equipment acts as a bridge between manually written records and the computer, but has important capabilities of its own. If we took a handful of written records from said Small District and were curious to see just what a

computer could do, and at what cost, we would immediately find that the computer is unable to process the information. (There are some exceptions, but they require a special design of input material.) The computer does understand computer cards (often referred to as "IBM" cards), punched paper tape, magnetic tape, etc.

The initial piece of auxiliary equipment is the Key-Punch. Information is transferred from written records into punched-card form. This step is very easy to do; anyone can keypunch information such as his name, social security number, etc., at once.

Naturally the Small District will be concerned about costs already, and may be interested to know that professional keypunching is charged at the rate of about 10 punches per penny. However, since we can encode information, ultimate costs can be kept quite low.

The next most commonly used piece of equipment is the Sorter. The cards are fed in easily--again, anyone can use the Sorter with a few minutes of demonstration time--and the cards are sorted by some selected manner. For example; names can be sorted alphabetically, or social security numbers can be sorted numerically. It would take approximately 9 minutes to sort 1,000 social security numbers (9 digits). Can you imagine how much time would be required if you handed a secretary hand-written records of 1,000 social security numbers and asked her to arrange them in perfect numerical order? The card normally carries a variety of items of information, and the sorter provides an accessibility to information that cannot be matched by manual-bookkeeping methods.

I will propose a card, for use by the Small District, which will contain a variety of columns of information. As a control I will use an audit Account Number. In coded form for brevity, it will tell me almost everything I wish to know about every entry· for example, the Fund Identification (as General Fund, Building Fund, etc.), the Major Class (as Administration, Instruction, etc.), the

sub-class (as salaries, expenses, etc.), Allotment Accounts (as Superintendent's Office, School No. 1, etc.), Document Code (as Purchasing Authority, Requisitions, etc.). This account number code greatly reduces handling costs at every stage of EDP. It may seem a bit cumbersome to interpret by eye, but it is the very language of EDP.

In addition to the Account Number (which will only take up 1 column, or about one tenth of a card) I will include the following information, each in a column of its own: the date, description (person, item, etc.), amount originally budgeted for this category, amount encumbered, amount expended, and the balance. In addition, I may use the Requisition Number, the Purchase Order Number, the Warrant Number, the Vendor Name, and I may wish to use a Percentage column (or more than one) to indicate the rate at which I'm spending money in each category. (I could compare this at frequent intervals with a pre-determined budget percentage.)

A Printer: A simple tabulating-type will do the following: with no "program" of instructions it can print out, in any inserted form, lists of information from the cards. (As a by-product, it can produce carbon copies as necessary.) A printer with a simple program can print out the lists of information and simultaneously provide the next stage of information, such as:

1. Explanatory information. For example, it will interpret number codes into verbal statements.
2. Provide all desired subtotal, totals, and grand totals, together with computed percentages.
3. Provide "warning" signals. For example, it can alert you that a specific Allotment Account is about to reach its dollar or percentage "Ceiling." (The signal is a printed symbol you select, such as a double asterisk, etc.)

Summarizing somewhat; for as little as $5 to $10, it would be possible to put a batch of information onto cards, sort them and obtain a printout, then re-sort them by another category and obtain a new printout. In fact, in my own experience (while initiating a similar project), I found that these services are often available free. There are public institutions that will allow limited use of facilities without charge. There are also private firms that will do the same, and offer good advice, in the hopes of obtaining later business.

If you were to ask a manual bookkeeper to provide you with an accurate list of all requisitions, written against rental of equipment, involved in a sub-vocational project, under Federal Program X, that involved Vendor Y, between two specified dates, I think you could expect a considerable delay before the information would find its way to your desk. And even then, the accuracy may be in question. With the EDP method mentioned, the information would be available within a matter of minutes and its accuracy in no doubt.

With the information I've included on the card, the following reports could be produced at any time:

1. Account Number (numerical order): Would allow tracing any single detail instantly. Totals and percentage figures would provide a to-date report. It is possible to include last year's to-date report, or a projected budget, alongside for comparison.
2. Date: All transactions between any two dates of interest.
3. Requisition (numerical order): And sub-sorted by Vendor.
4. Purchase Orders:
    a) Numerical order.
    b) Chronologically (if it varies from numerical).
    c) By Vendor.
    d) Against specific projects or programs.

5. Warrants.

6. Vendors: If of interest to determine whom you are doing business with, as of what dates, and a comparison of expenditures by vendor.

7. Programs, projects, etc.: Totals broken down as desired (dates, dollars, percentages, vendors, etc.) for any program, project, categorical area, etc.

8. Expenditures and/or percentages: Example, all expenditures which exceed a specified amount or percentage.

The EDP program outlined is very easy to start, and to experiment with. No computer is necessary. EDP lends itself to number-code controls which tend to greatly reduce time and costs. As the program takes some shape, and the Small District user gains confidence in it, it is very easy to expand its use as desired. At too early a stage, a computer may only be in the way! However, as the volume of information increases, it will be noted that a computer can handle certain operations of the auxiliary equipment in a tiny fraction of the time and cost. In addition, as the volume increases, the card system can be easily transferred to a punched or magnetic tape system, again reducing costs.

The system can tie in very well with a "remote terminal." This is a typewriter-like device, and includes a telephone and a small tape-punch. Data can be punched in very easily. The data is fed into a remote computer, via telephone line, and printouts, etc., are immediately available through the typewriter. Only actual computer time is charged, but since it can do so much per second, many complicated kinds of information are processed at small cost. The computer can provide, at the end of each transaction, the amount of computer time employed (always amazingly tiny) and the cost. Suppliers usually ask for some sort of minimum guarantee, as perhaps $100 per month.

For small poor districts, I would point out that public institutions such

as universities, colleges, junior colleges, and now many secondary schools, have computers (of varying capacities). It has been my experience that these institutions are most cooperative in assisting other public institutions (naturally they are not allowed to take part in private business operations). In addition, these institutions may hire local disadvantaged personnel, compensated through government programs, who are receiving paid training. The institution is allowed to decrease government costs by paid employment of the personnel. I've had experienced keypunching done at about $2.00 per hour.

My model is aimed at the problems faced by a small district cautiously spending "one dollar at a time," and with an instinctive fear of computers. It is possible to order, in error, a large expensive computer printout and find it is entirely useless. The model, starting with a batch of written records and a keypunch, could help overcome some fears, but there are other easy paths I should mention.

The stock program: Thousands of computer programs have already been prepared. IBM and others publish lists of their stock programs. There are undoubtedly a great many school district programs already on file. While preparing a custom program can be expensive, stock programs are available at nominal cost. (A recent Supreme Court ruling stated that programs for digital computers cannot be protected by a patent. See reference at end.) As an example, let us assume that the Small District is now preparing its payroll manually and is willing to try the computer method. It finds it has access to an "IBM 360" computer. At a cost of several dollars, IBM will provide a program that will produce the desired results on its "360."

Other program sources: Since most school districts have reasonably similar accounting procedures, it would be easy for a Small District to inquire about and select a district where the problem is already solved. After observing the print-

outs for awhile the Small District could start operating with its own information. Very likely the Small District could rely on County assistance to seek out similar districts and get started.

I avoided mention of other items of auxiliary equipment as being too broad a subject for this paper. But other items do exist, and they provide a wide range of automated assistance at small cost. They are found everywhere.

Briefly summarizing, EDP can provid an excellent and low-cost internal audit system, because of these inherent advantages:

1. Every transaction can be easily recorded.
2. Ease of producing printouts, by any and all desired categories.
3. Ease of information retrieval. (In sharp contrast to any manual system.)
4. Easy alteration of input errors. (In a manual report, this would mean erasing an error and then correcting all the extended sub-totals, totals, percentages, etc.) Any detail can be corrected easily, and the subsequent printouts will contain corrected extensions.
5. Ease of sub-sorting information.

BIBLIOGRAPHY

Los Angeles Community Colleges. Allotment Account Manual. July 10, 1972. Also portions of reports run by the Colleges.

Los Angeles Times. "Computer Software Industry Hums Above Court Uproar," Outlook-Business & Finance, Section 1, November 26, 1972.

PERFORMANCE CONTRACTING

Greg S. Ohanneson

DISCUSSION

Performance Contracts are contracts between an educational agency and another individual or organization in which the educational agency agrees to pay the other party a specified educational function. A state definition, given in Assembly Bill No. 1483 adds two restrictions: (1) the subcontractor must be a private agency and (2) the achievement must be maintained for a period of at least six months after completion of program. Four distinct types of performance contracts seem to exist and the accompanying table depicts them.

Table 1. Types of Performance Contracts

		Type of Subcontractor	
		Public	Private
Program Type	Vocational	1	3
	Non-Vocational	2	4

In essence, a performance contract means "No performance--No pay."

Public or Private Subcontractor

An important issue clouds the developing of performance contracting between two public agencies (box 1 and 2). Apparently public-to-public contracts within the State's education system can contain neither a monetary penalty clause nor a provision for financial incentives. A recent (June, 1972) informal opinion rendered by one of the state's senior legal counsel makes this clear:

Because the performing state agency must recover its costs, a monetary penalty clause for below standard performance would be invalid. As a corollary, the specific types of costs allowed interagency agreements do not include bonus.

This does not preclude public-to-public non-performance contracting. In fact numerous examples exist:

1. ROP/ROC contracts
2. high school-community college agreements (courtesy the Vesey Bill)
3. district to district, and district to county contracts
4.

However, these contracts should contain no penalty/bonus clause and they are, strictly speaking, not performance contracts. Rather they will be of the following types:

a. cost plus fixed fee

b. fixed price

c.

Private sub-contractors can vary widely, e.g.:

1. Consultant firms (RCA, Thiokol)
2. Private schools (in cosmetology, electronics, business)
3. Business firms
4. Teacher groups
5. Individual teachers (through merit pay, etc.)
6.

Vocational or non-vocational subject matter (See Table 1)

Most of the current literature available discusses non-vocational performance contracts. These contracts have often possessed the following characteristics:

1. restricted to math and reading ("basic skills"), often remedial
2. focused on the disadvantaged (ESEA programs, OEO, etc.)
3. individualized instruction is an important goal
4. developmental and research oriented
5. evaluated using standard achievement tests
6. emphasis on software and learning machines
7. threatening to existing school staff
8. turnkey oriented--designed to be taken over by existing staff
9.

Vocational performance contracts may differ in several ways from the above and tend to have the following characteristics:

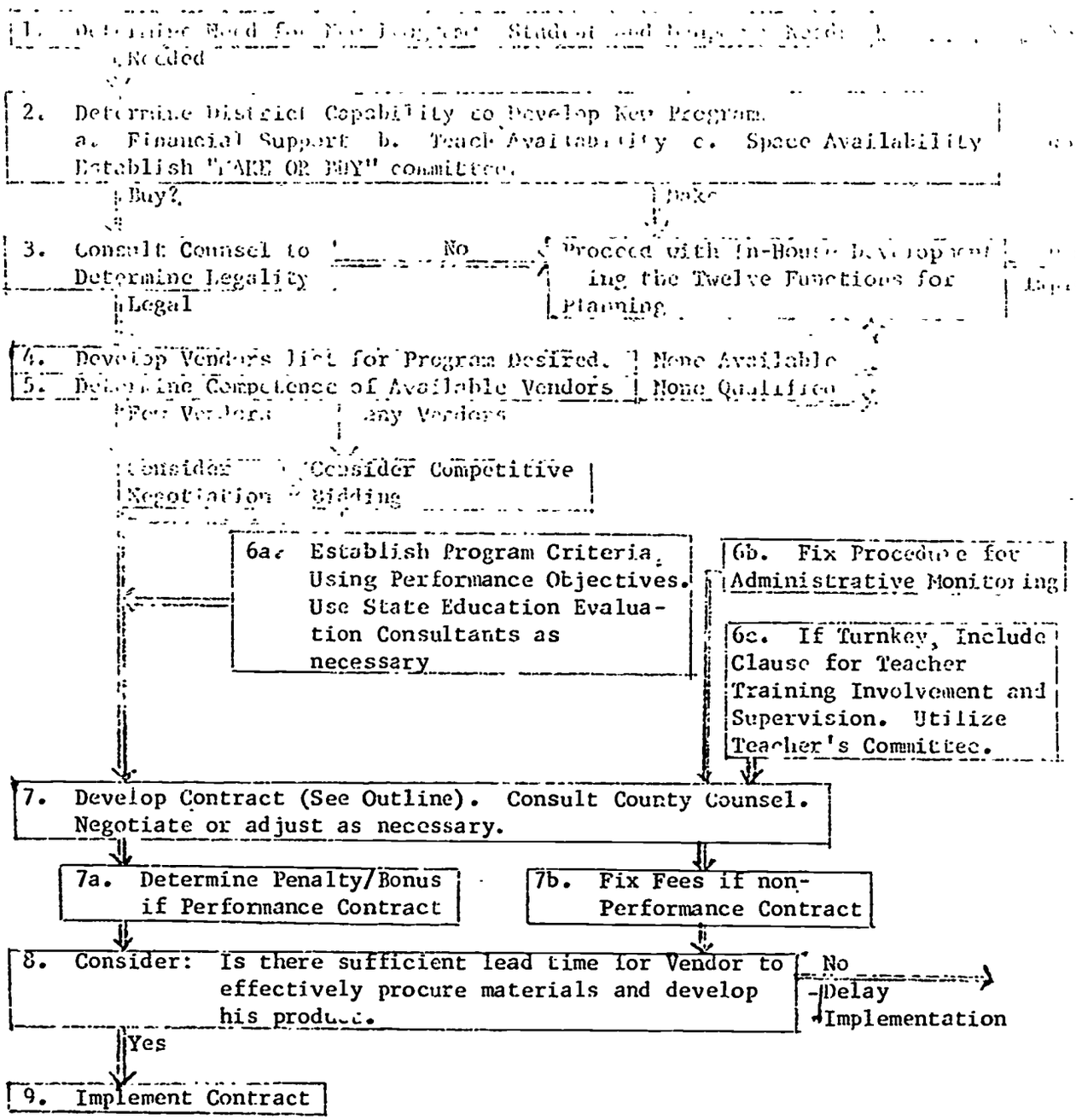
1. focuses on manipulative skill development, emphasizes development of placement level capabilities
2. often selective, requiring relatively high entry requirements
3. individualized instruction is also an important goal
4. generally very practical and functional
5. tend to use criteria reference performance standards (e.g. placement, formal certification, or licensing)
6. tends to provide facilities and equipment not easily procured by individual schools--Provides greater opportunities for meeting student occupational needs.
7. less threatening to school staff--vocational performance contracts often initiate programs for which there are no in-house faculty.
8. turnkey (turn over to existing school) not necessarily desirable. Provides a way for school systems to meet temporary local needs or to avoid expensive facilities investment
9.

Elmer Wirta, Southern California Regional Coordinator forVocational Education, makes several important points regarding the development of an effective performance contracting capability. First, the following in-service education should be performed by organizations intending to engage in performance contracting:

1. writing realistic performance objectives
2. developing a so-called vendor's list of prospective contractees
3. developing a "make or buy" committee structure (see below)
4. developing site inspection teams which can assess contractor's capabilities
5. developing State service procurement regulations
6. developing contracting procedures

Second, a "make or buy" committee is one which determines whether public education will do the job or whether it is more desirable to have it done by private agencies. "Make or buy" decisions should take into account:

1. effect on price, quality, performance, and delivery
2. does it broaden the base of the prime contractor
3. are contractees competent and experienced
4. are the subcontractor's facilities more suitable for the job than those of the prime contractor
5. will the subcontractor need some of the prime contractor's facilities or equipment



Greg Ohanneson
November, 1972

BIBLIOGRAPHY

State Laws and Regulations

State of California. "California State Plan for Vocational Education: Part I--Administrative Provisions." Sacramento: State of California. 1971. p.31.

Provides for vocational instruction through Private Post-Secondary Vocational Training Institutions; and other public and nonpublic private agencies and institutions. Establishes general requirements for the contract.

State of California. "The Guaranteed Learning Achievement Act of 1971. Chapter 10.1, Division 6, of the Education Code: Contracts for Special Educational Program." Sacramento: State of California. November 22, 1971.

Permits experimental contracting projects in the subject of math and reading. Defines "performance guarantee contract," "private contract," "public school district," "penalty clause." Lists in some detail the provisions required for a performance guarantee contract.

Monographs and Articles

Blaschke, Charles. "Performance Contracting Costs, Management Reform, and John Q. Citizen." Phi Delta Kappan: December, 1971. pp. 245-247.

Carpenter, Polly and George R. Hall. "Case Studies in Educational Performance Contracting, Conclusions and Implications." Santa Monica, California: The Rand Corporation. December, 1971.

Farr, Roger and J. Jaap Tuinman and B. Elgit Blanton. "How to Make a Pile in Performance Contracting," Phi Delta Kappan: February, 1972. pp. 367-369.

Harmes, H. M. "Specifying Objectives for Performance Contracts," Educational Technology: January, 1971. pp. 52-56.

Discusses differences between educational product output contracts (analogous to industry delivery contract) and process contracts (analogous to service contracts of professions and industry).
Provides pointers for specifying objectives for product output systems.

Johnson, W. Frank. "Performance Contracting with Existing Staff." Educational Technology: January, 1971. pp. 59-61.

Provides a rational for the involvement of teachers in performance contracting. Discusses the concept of Performance Criteria Pay-Bonuses. Lists factors which should be considered when developing a contract.

Mayrhofer, Albert V. "Factors to Consider in Preparing Performance Contracts for Instruction." Educational Technology: January, 1971. pp. 48-51.

Discusses items which should be in a performance contract for education. Notes that a contract is a legal agreement.

NEA Research Bulletin. "Performance Contracting-An Experiment." NEA Research Bulletin: December, 1971. pp. 123-125.

Establishes minimum conditions for performance contracts. Notes some problems and issues of concerns to teacher groups.

Voegel, George H. "A Suggested Schema for Faculty Commission Pay in Performance Contracting." Educational Technology: January, 1971. pp. 57-59.

Discusses procedures for a learner--oriented performance system. Indicates ways for developing incentive payment. Discusses advantages and problem areas.

THE COUNTY OFFICE
WHAT SERVICES IT PROVIDES AND
WHAT KINDS OF FUNDING FOR PROVIDING LEADERSHIP

Fran Russell

In California, the responsibility of educating youth lies with the state, which establishes general requirements and basic financial support, with each local school district taking responsibility for the operation of its schools within the district. The intermediate unit between the state and the local districts in Los Angeles County is the Office of the County Superintendent of Schools. This Office provides leadership and coordination for improvement of educational programs in all 95 school districts within the county, contributes to regional and statewide educational efforts, and works with and coordinates activities of other educational institutions - colleges, universities, research centers - as well as business, industry, and public agencies.

The functions and activities of the Office of the County Superintendent of Schools are organized into six major areas of service - and the area related to vocational education is Educational Programs and Services. Within this area is the Curriculum and Instructional Services Division, which provides services to districts as subject matter and teaching methods specialists. The Career Education Center directs its specialists' attention to developing programs in vocational education and vocational guidance.

For purposes of this paper, I will use the Los Angeles County Office as a base model from which other county offices can add to, modify, and/or delete given information in order to meet their own specific needs.

The primary function of the vocational education section of the county office is to assist school districts within the county in the coordination, development, and evaluation of vocational education, vocational guidance, and work experience programs. Other responsibilities, as required by the California State Plan for Vocational Education, include:*

(1) represent the county in matters relating to vocational education

(2) prepare financial, statistical, descriptive, and other reports pertaining to vocational education

(3) Promote and publicize the total program of vocational education

(4) attend federal, state, regional, and other conferences and meetings concerned with vocational education

(5) work cooperatively with the Department of Human Resources Development and other agencies, both public and private, in the interpretation of manpower needs and other data

(*See page 22 of the State Plan for a complete list of responsibilities.)

In coordinating the program, the staff members are asked to attend to and provide vocational education services to local school districts. These services include (1) assisting districts in maintaining, extending, and improving existing vocational education programs and (2) recommending and assisting the districts in providing needed new vocational education programs.

In addition to coordinating vocational education activities in school districts, the staff works cooperatively with those agencies concerned with manpower training, assists school districts and other appropriate agencies in the community toward the implementation of the 12 functions of vocational education (see list of these functions at the end of this report), develops staff skills in the analyzation, implementation, and evaluation of the 12 major functions on a regional basis, and works cooperatively with the California State Department of

Education Division of Vocational Education facilitating the functions of vocational education toward the overall goals of vocational education.

Broken down, the county office should provide as many of the following services as possible:

(1) find the kinds of jobs that schools are duplicating (i.e., follow-up studies of students, job market analysis - both required by law for school districts), coordinate the information, and mail out one inclusive report for each particular topic to all school districts; (2) assist in the planning and giving of pre-service and inservice training programs as well as statewide, regional, and local workshops for teachers, counselors, and other vocational education personnel - these workshops could relate to leadership development, curriculum development of instructional aids, etc.; (3) serve as consultants to local directors, teachers, counselors, etc. regarding types of programs that are now operating, kinds of equipment that might best fit the needs of the district, etc; (4) bring together deans of vocational education from the community colleges and high school districts to work on common problems, to develop mutual cooperation between the two, and to make new proposals that would be beneficial to all concerned; (5) help in the establishment and organization of new ROP/ROC programs; (6) promote the development and improvement of youth organizations as co-curricular activities in each of the vocational education areas. Types of these organizations include Future Farmers of America, Vocational Industrial Clubs of America (VICA), Future Business Leaders of America (FBLA), and Distributive Education Clubs of America (DECA); (7) be a coordinating unit between industry and school districts for the distribution of donated equipment; (8) be cognizant of new vocational education legislation and disseminate the information to school districts so that they, too, are aware in this area; (9) help school districts/teacher, counselors write projects for monies in the area of vocational education;

(10) have a closer working relationship with guidance personnel and, with career education becoming an important part of vocational programs, a close liaison is essential; (11) promote cooperation between school districts; (12) assist local districts in the establishment of representative advisory committees; (13) assist in the interpretation of research findings and promote and encourage relevant research; (14) update and write up occupation information of the VIEW scripts (Vital Information About Educational Work) that are used in the school districts; and (15) serve in a consultant position in instructional services to district leadership personnel in (a) selection of appropriate course content, (b) election of instructional materials, and (c) utilization of instructional strategies to prepare students for employment, on a continuing basis as measured by feedback and other reports from districts. Other important services are: (16) accumulate data from a selected county-wide sample on population needs, analyze the data and report the findings to all school districts; (17) accumulate job market information, publish and disseminate a report to all school districts; and (18) coordinate a leadership conference for directors of vocational education from high schools and community colleges in the district.

A desired outcome of these services is being able to provide opportunities through vocational education for all youth and adults to acquire those marketable skills that are equal to their abilities and interests and that are parallel with job markets needs in the area of the county.

In order to provide the above services, there must be funds available. Monies come from (1) taxation - direct from the county assessment; (2) average daily attendance - which is built around a formula of assessed valuation or per pupil expenditure; (3) annual projects - requirements indicate that one project must be written each year in order to justify the funds given; (4) special projects/grants from outside agencies for experimental purposes; (5) ROC/ROP programs,

in some instances, where additional ADA money is granted, and (6) direct contracting with school districts. It is with direct contracting that I want to focus my attention as a new and innovative way of receiving funds. An example follows:

District "X" receives a grant to develop curriculum for their special population groups - generally around 5 percent of all funds granted can be earmarked for evaluation and/or follow-up. The County may, as an "outside agency" contract with individual school districts to carry out this evaluation/follow-up component. Some advantages of direct contracting is that it frees valuable time of the school district and allows them to direct their attention to other areas of importance, all the information is gathered in one central area, thus avoiding duplicating of reports from all school districts (one report is sent out), an "outside agency" may be more objective in seeing and interpreting the data, and makes the "outside agency" responsible for reporting accurate information and fulfilling the job required of it.

Another type of contracting is performance contracts whereby the County will provide a serviced based on some projected outcome and payment depends on the difference of the outcome and the project contract completed.

12 Major Functions of Vocational Education

1. POPULATION NEEDS ANALYSIS:
   concerned with establishing and maintaining an information file which describes the population being served

2. VOCATIONAL EDUCATION PROMOTION:
   plan and execute those activities necessary to inform the public of the strengths and merits of vocational education

3. STUDENT RECRUITMENT:
   aimed primarily at identifying those who need vocational education and encouraging those so identified to enroll in a program of instruction

4. GUIDANCE AND COUNSELING:
   those activities necessary to provide individuals with sufficient information to allow them to make meaningful and informed occupational choices; concerned also with continual individual assessment

5. JOB MARKET ANALYSIS:
   concerned with the development and maintenance of a file of information of existing and new and emerging occupations which (1) fall within the occupational categories served by vocational education; and (2) have current or anticipated excess demands

6. OCCUPATION PERFORMANCE REQUIREMENTS ANALYSIS:
   establishes job specifications for the vocational instruction program; these specifications include the identification of the skills and knowledges required to achieve the occupational of other objectives of instruction

7. PROGRAM PLANNING:
   concerned with integrating information on population needs and job opportunities in the light of the area manpower (if any) and budget constraints to develop new and improved curricula so that a proper assortment of programs is offered

8. PROGRAM REVIEW:
   requires the review of local program plans

9. COURSE/RESOURCE DEVELOPMENT/IMPROVEMENT:
   obtain the resources necessary to improve existing and/or develop new vocational education programs; such resources include materials (textbooks, standard tests, etc.), equipment (lathes, keypunch machines, etc.), physical plant, and trained instructors - also concerned with the development of ancillary services, i.e. audio-visual equipment, library services, and inservice training programs

10. VOCATIONAL INSTRUCTION:
    provides instruction to individuals for the purpose of preparing them for gainful employment or advanced vocational-technical training

11. PLACEMENT:
    provides individuals with sufficient information to make a meaningful and informed occupational choice and, if that choice is employment, to assist them in finding that employment which best fits their needs and the needs of the employer

12. SYSTEM EVALUATION:
    evaluation is the process of determining the degree to which a system is meeting its objectives; the results of evaluation are used as part of the management information system as well as for meeting the requirements for periodic reporting as set forth in P.L. 90-576

REFERENCES CONSULTED

Accountability, Assessment, and Relevance in Vocational Education, Program Operations Unit, Vocational Education Section, California State Department of Education, Sacramento, 1970, pages 1-41.

Application of the Office of the Los Angeles County Superintendent of Schools for Funds under the Vocational Education Amendments of 1968, P.L. 90-576, Part B, dated June 19, 1972.

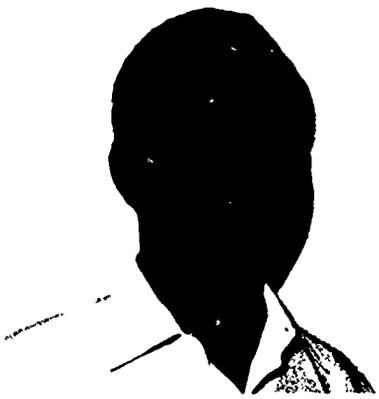
California State Plan for Vocational Education, Part I--Administrative Provisions, State of California, Sacramento, 1971.

1972 Facts, Figures, Services, Los Angeles County, Office of the Superintendent of Schools, Board of Education.

Personal interviews with:

Dr. David O. Taxis - Los Angeles County Schools
Administrator, Career Education
Assistant Director, Curriculum and Instructional Service

Mr. Lee Ralston
Division of Vocational Education



A MODEL FOR MANPOWER FORECASTS WITH IMPLICATIONS FOR VOCATIONAL EDUCATION IN A DEVELOPING COUNTRY

Maurice K. Saah

INTRODUCTION

Forecasts - Predictions subject to the achievement of a certain economic growth target. Forecasts spell out the implications of an economic plan relative to the characteristics of the labor force.

Projections - predictions of the outcome of purely spontaneous forces, that is, what will happen in the normal course of events in an unplanned economy. Unplanned economics are characteristics of such countries as Britain and the United States.

In many developing countries a characteristic feature is the presence of an economic plan. Ironically, economists and other experts have brainwashed these countries into believing that a planned economy is a sine qua non of fast development. While various arguments exist for and against planned economies, it is generally agreed that the use an economic plan for the purposes of manpower forcasts is more desirable especially as other data which could otherwise be used are not readily available.

The Theory of Educational Planning

Manpower forecasting is one of the three approaches which experts identify as coming under the theory of educational planning. The other approaches are: Social Demand and Cost-Benefit or Rate-of-Return. For purposes of slanting educational planning towards vocational education considerations, manpower forecasting is obviously the more direct approach.

Some Basic Problems

Some of the basic problems that are to be considered in relating vocational education to manpower forecasting systems are:

1. The overall concept or "philosophy" of occupational preparation appropriate to modern or modernizing societies;
2. Ascertaining the kinds and quantities of qualified personnel needed by the occupation system;
3. Designing education and training programs and curricular content in relation to established needs;
4. Determining institutional responsibilities for occupational education and training; and
5. Handling organizational, administrative and financial requirements to fulfill the educational objectives.[1]

THE MECHANICS OF FORECASTING

Many methods for manpower forecasting have been identified by experts but only a few have stood the test of time. While lack of accuracy has plagued the various methods some have the potential for applicability in a developing country with only minor adjustments and adaptation.

1. Mark Blaug describes a method used by the Organization for Economic Cooperation and Development (O.E.C.D.) Mediterranean Regional Project. The steps followed in this method are: (a) a desirable Gross Domestic Product in a future year is projected from a prior economic plan; (b) the target G.D.P. is broken down by major sectors such as agriculture, manufacturing, transportation, distribution and the like; (c) the sectoral G.D.P. is then

[1]Eugene Staley, Planning Occupational Education and Training for Development. (New York: Praeger Publishers, 1971).

broken down by industries; (d) an average labor-output coefficient is applied to the sectoral or industrial G.D.P. targets, yielding a forecast of labor requirements by sector or industry; (e) the labor force is distributed among a number of mutually exclusive occupational categories; and (f) the occupational structure is then converted into an educational structure by applying a standard measure of the level of formal education required to perform "adequately" in each occupation. The method is summed up in the equation:

$$\left(G.D.P.\right)\left(\frac{G.D.P._s}{G.D.P.}\right)\left(\frac{G.D.P._i}{G.D.P._s}\right)\left(\frac{L}{G.D.P._i}\right)\left(\frac{L_j}{L_i}\right)\left(\frac{L_e}{L_j}\right) = \text{Workers of education } \underline{e} \text{ in occupation } \underline{j} \text{ in industry } \underline{i} \text{ in sector } \underline{s}.$$

where $G.D.P._s$ = G.D.P. originating in each sector;

$G.D.P._i$ = G.D.P. originating in each industry;

L_i = the labor force in each industry;

L_j = the labor force in each occupation;

L_e = the labor force with each level of education; and

$L \geq \sum^{n} L_{sije}$. [2]

2. Other methods are:

(a) Employer Surveys. There are two principal types - Area Skills Survey and Training Needs Survey. This method involves surveying existing industries to determine their manpower projections over a future period.

(b) Extrapolation. The technique estimates the future employment on the basis of the assumption that trends in the future will be similar to trends in the past.

---

[2] Mark Blaug, "Approaches to Educational Planning," The Economic Journal, Volume 77 (June, 1967).

(c) Econometric Technique. The technique consists of projecting population and labor force trends by age, sex, geographical distribution and educational level in relation to future employment opportunities based on the achievement of a gross national product. In some respects this technique is similar to the O.E.C.D. method.

(d) Job Vacancy-Occupational Outlook Approach. This method, also known as the job vacancy/matrix, partly involves the use of the econometric technique in determining the persistence and frequency of hard to fill jobs and those with the most apparent shortages. The information is then utilized to forecast occupational trends, manpower requirements and training needs.[3]

Some of the techniques in (2) are closer to the O.E.C.D. method but in general are more relevant to developed or sophisticated economies where other inputs are readily available. The O.E.C.D. method, therefore, seems to have the greater potential for developing countries.

FORECASTING STUDENT ENROLLMENT

An important corollary to manpower forecasting is an advanced knowledge of student flow and enrollment. In many mnapower forecasts student flow is presumed because they are usually in situations where compulsory education and availability of facilities ensure that every eligible child is in school; in many developing countries only a percentage of school age children get enrolled for various reasons making it difficult to make any reasonable forecast without any model or formula. For this type of forecast, two methods have been proposed by Kenneth Tanner:

---

[3]Robert C. Young, William V. Clive, and Benton E. Miles, Vocational Education Planning: Manpower, Priorities and Dollars. Columbus, Ohio: Ohio State University Center for Vocational and Technical Educational and Technical Education, 1972.

1. The Survival Ratio Technique (SRT). In this method, the live birth for at least the immediate past ten years are needed to determine the rate of student flow into grade one. The first grade enrollment is divided by the number of live births in the country six years prior to enrollment to determine the survival ratio. The survival ratio per grade per year is determined for a given grade level by dividing the successor years' net enrollment for that level by the previous years' enrollment. Finally, the mean ratio is determined per grade to serve as a multiplier in forecasting student population trends in the lower grades.
2. The Bayesian Estimation Procedure (BEP). This is a more sophisticated method for forecasting student enrollment even though it requires the same procedures as in SRT to establish the baseline data. One function of BEP is to measure the uncertainties of population trends in probabilistic terms. The probability statement is founded on both historical data (the distribution afforded by SRT) and subjective and sample data (other economic variables likely to affect population trends). The net result is that when an estimated number of students is forecasted for several grades in a school system, the BEP indicates what percentage of the total to expect in a given grade.[4] The outcome of such a forecast is crucial considering the number of students to be dxpected in both secondary and post-secondary vocational education programs.

These two forecasting methods have relevance for developing countries because they utilize basic inputs and variables that are available to planners in less than sophisticated economic and social conditions. In many developing countries,

---

[4]Kenneth C. Tanner, Designs for Educational Planning, A Systemic Approach (Lexington: Heath Lexington Books, 1971)

lack of statistical data and information is a crucial issue.

MONITORING SYSTEM

There is an overwhelming evidence of the unreliability of forecasts that look beyond several years and it is estimated that if a forecast shows an overall error of 10 percent or more, it constitutes a gross inaccuracy. In many cases extreme examples of overestimation and underestimation have occured. In order to minimize the variables that can contribute to unacceptable errors, I would propose a monitoring system by which the direction of the forecasts can be controlled. Aspects of such a monitoring system should be:

1. Redefinition of the vocational education objectives from time to time:
   - probably the concept of the PPBS has considerable merit.
   - periodic evaluation of the total vocational education program.
2. Maintenance of a good system of guidance, counseling and career information. In most developing countries, vocational counseling and career information systems are almost a novelty. An essential part of the vocational education program should be the provision of occupational and career information to all students to enable more informed career decision making.
3. Constant review of population and mobility trends. Social and job mobility and rural-urban movements are some of the very important variables likely to affect educational planning of any kind. The impact of these variables on manpower forecasts and vocational education programs can be very crucial.
4. Review of the salary and wage structure in the economy. The compensation structure in the country influences occupational choices to a great extent. In Ghana, for example, a clerk-typist makes more money than a plumber, a mechanic or an agricultural worker with the result that fewer and fewer students like to get into vocational education programs. Manpower forecasts

cannot simply establish training programs and force students into the programs. Instead, the salary structure should make the jobs and programs sufficiently attractive so that the students will choose to enter these careers of their own volition.

5. Break down of the forecasts into shorter manageable period. Many manpower experts agree that the accuracy of the forecast declines as it looks further and further into the future. In order to minimize the chances of error, the forecast should be reviewed at shorter intervals even though it may initially be designed for say a ten-year period, so that a comparison can be made of forecasted and actual data over short periods of time.
6. Periodic review of the entire educational system. Perhaps the concept of career education should offer the basis for reviewing the whole educational system in relation to manpower trends and the total educational program. The view currently being propagated is that the dichotomy between vocational education and general education is mythical rather than real.

BIBLIOGRAPHY

Blaug, Mark. "Approaches to Educational Planning," The Economic Journal, Volume 77, (June, 1967).

Staley, Eugene. Planning Occupational Education and Training for Development. New York: Praeger Publishers, 1971.

Tanner, C. Kenneth. Designs for Educational Planning, A Systemic Approach. Lexington: Heath Lexington Books, 1971.

Young, Robert C., William V. Clive, and Benton E. Miles. Vocational Education Planning: Manpower, Priorities and Dollars. Columbus, Ohio: Ohio State University Center for Vocational and Technical Education, 1972.

DEVELOPMENT OF A MODEL AS A SUGGESTIVE SOLUTION FOR IDENTIFYING AND ASSISTING DISADVANTAGED STUDENTS

Theressa Ann Sams

INTRODUCTION

Despite the lack of reliable and valid etiological data, many educators have tended to act as if all students who are labeled as disadvantaged are handicapped by an internal disorder which has caused the learning problem. Thus the group categorized as disadvantaged include not only students who actually have major internal disorders which interfere with their learning, but also students whose learning problems stem primarily from the deficiencies of the learning environments in which they interact.

The purposes in the development of this model as a suggestive solution for identifying and assisting disadvantaged students are (1) to discuss an interactional view of factors which determine school success and failure of disadvantaged students enrolled in the vocational education programs and (2) to suggest procedures for identifying and assisting disadvantaged students enrolled in vocational education programs

An Interactional View

The model stresses that a given disadvantaged student's success or failure in a vocational education program is a function of the interaction between his strengths, weaknesses, and limitations and the specific classroom situational factors he encounters, including individual differences among teachers and differing approaches to instruction. In other words, learning problems result not

only from the characteristic of the disadvantaged student, but also from the characteristics of the vocational education classroom situation to which he is assigned.

Key Characteristics

The important characteristics of the disadvantaged student are conceptualized as his behaviors, skills, interests, and needs as manifested in the vocational education program. In addition, of course, it is recognized that all disadvantaged students differ from each other in terms of:

(a) Development - in sensory, perceptual, motoric, linguistic, cognitive, social and emotional areas.

(Motivation - defined in this instance as the degree to which a disadvantaged student views a specific vocational education classroom activity or task as meaningful, interesting, worth the effort, and attainable through an appropriate amount of effort.

(c) Performance - emphasizing rate, style, extent, and quality as the major variables.

The important characteristics of the vocational education classroom situation include the personnel, goals, procedures, and materials which are employed in the program's efforts to provide effective and efficient instruction. These situational variables are seen as combining differenti lly to produce vocational education classrooms which vary critically in terms of the degree to which the program:

(a) allows for the wide range of developmental, motivational, and performance differences which exist in every classroom.

(b) is compatible with the fostering of each disadvantaged student's desire to learn and perform.

(c) is designed to detect current and potential disadvantaged students and is able to correct, compensate for, and/or tolerate such students.

Hypotheses and Implications

The nature of the interaction between the disadvantaged student and the vocational education classroom situation is seen as the major determinant of school success or failure. The hypothesized relationship between these two sets of characteristics and school success and failure can be summarized as follows:

(a) the population currently labeled as disadvantaged consists of at least three major subgroups of students with learning problems, ranging from those students whose problem seems to stem primarily from the deficiencies of the learning environment to those who actually have major disorders interfering with learning.

(b) there is a significant relationship between a teacher's ability to individualize instruction and the type and relative proportion of learning problem students labeled as disadvantaged to be found in classrooms. This suggest that the more able the teacher with reference to individualized instruction, the fewer the Type I and II disadvantaged students will be found in the vocational education classroom situation.

Procedures For Identifying

It is assumed that there are at least three types of students within the group categorized as disadvantaged enrolled in a vocational education program:

(a) students who have major disadvantages which predisposed

them to learning difficulties.

(b) students who do not have such internal disadvantages but simply do not function well in non-individualized instructional programs.

(c) students who have minor disadvantages but who, under appropriate, motivating circumstances, are able to compensate for such disadvantages in mastering vocational learning tasks.

For the purpose of the chart, the non-disordered student are referred to as Type I Disadvantaged; the student with minor disordered are referred to as Type II Disadvantaged; and students with major disorders are referred to as Type III Disadvantaged.

Level a: Reteaching in basic V.E. basics
Level b: Needed prerequisites are retaught
Level c: Remediation of interfering bahaviors and/or underlying process deficits

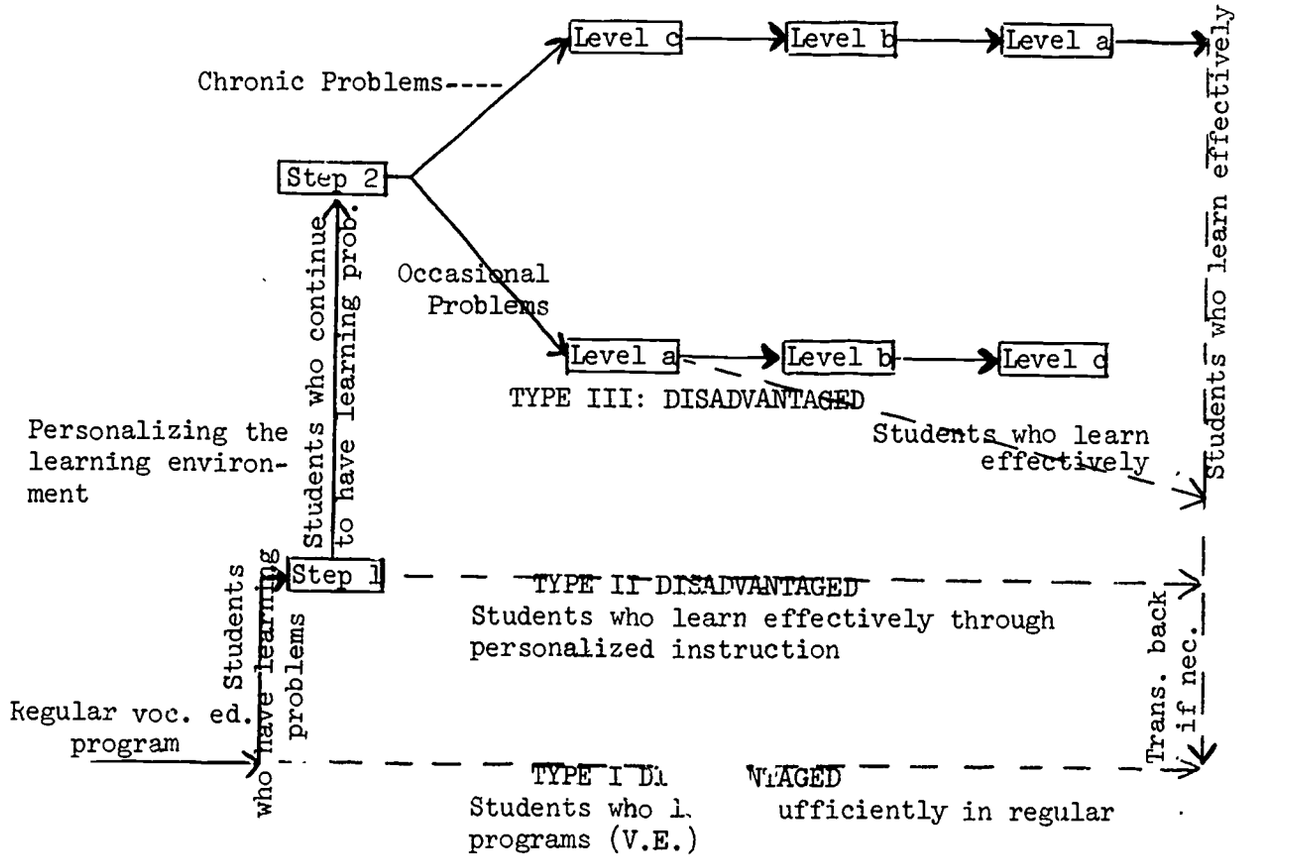


Figure 1: Model for Teaching Strategies

Based on the stated view, specific teaching strategies for identifying and remedying th· disadvantage have been conceptualized and are presented in Figure 1.

Essentially, what is suggested is a two-step sequential process by which the teacher (a) establishes an individualized learning environment, and then, if necessary, (b) employs up to three sequential and hierarchical remedial strategies in a sequence predetermined by the success or failure of each attempted strategy. That is, after the first step has been initiated, the teacher proceeds to the second step for those students who continue to manifest occasional-to-chronic learning difficulty. The three sequential and hierarchical strategies which are included for possible use during this second step represent three different levels of instructional focus. Level a emphasizes maintaining the focus on behavior, skills, content, and concepts which are related to basic vocational education subjects. Level b emphasizes instruction of prerequisites which are needed before vocational skills can be mastered. Level c attempts to deal with any pathological behaviors and/or any underlying process deficits which may interfere with school learning.

Step 1

Those students in regular vocational education class who are doing poorly (as reflected by such factors as being assigned D and/or F grades) are provided with a new learning environment where the program is individualized, where individual differences in development, motivation, and performance are accommodated and fostered and where a greater degree of deviation is tolerated and/or compensated. The establishment of a new environment is accomplished either by altering the regular vocational education program or, if necessary, by removing the student to another classroom.

Step 2

During the second step of the sequence, the teacher may employ up to three

teaching strategies. When a Type II Disadvantaged student does not have difficulty, the teacher must decide whether or not instruction can be delayed in the area until a later time when learning might prove to be easier. The emphasis, at first, is on reteaching behavior skills, content and concepts related to vocational education (level a); level b instruction is initiated only if reteaching does not succeed; and level c efforts are initiated only if level b instruction proves to be unfruitful. Note, reteaching requires the implementation of qualitatively different instructional approaches.

BIBLIOGRAPHY

Adelman, Howard S. "The Not So Specific Learning Disability Population," Exceptional Children, (March, 1971), 528-533.

MODEL FOR UTILIZING VOCATIONAL EDUCATION FUNDS IN CORRECTIONAL INSTITUTIONS

Frank M. Santoro

Key Points

Diagnostic Center and Learning Laboratory

Employability plan for all inmates

Pre-vocational training

Continuous job development effort from prison to halfway house to parole phase.

Vocational training in community facilities such as high schools, regional occupational centers, regional occupational programs, community colleges, etc.

Work-study and/or work release programs.

Halfway house with no release time stipulated for inmates, progress out of house contingent on inmates positive behavior.

Parole has responsibility for supportive follow-up services up to six months after release.

Vocational Education funding should begin with:

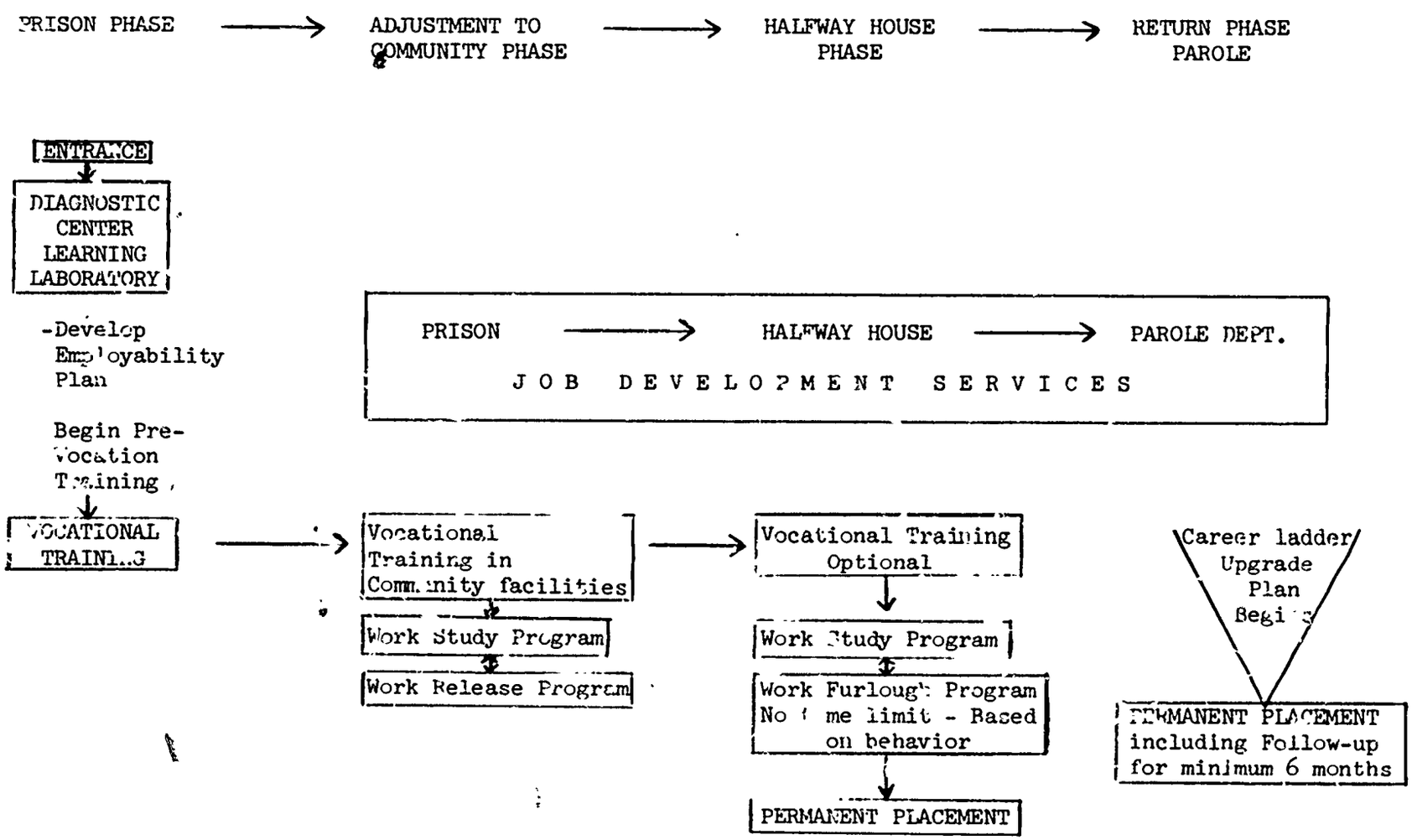
Providing vocational training in the community for inmates still in prison, inmates at halfway houses and those on parole.

Develop work-study programs in prison and at halfway houses.

Provide vocational training within the prison and pre-vocational training in a learning laboratory.

Provide vocational counseling personnel to provide job development services.

MODEL FOR UTILIZING VOCATIONAL EDUCATION FUNDS IN CORRECTIONAL INSTITUTIONS



There are about 400,000 Americans in local, state and federal positions throughout the United States. Over a third of this number is non-white and generally the median grade achievement level is 8th grade. Although inmates range from illiterate to college educated, the largest group tends to be the functional illiterates making up 10% of all the inmates.

More than 100,000 persons leave federal and state prisons each year. Few of them receive the kind of training, while in prison, which would enable them to compete successfully for jobs. An even larger number of releasees, many of them teen-aged youth, leave local correctional institutions in cities and towns where modern training programs are, for the most part, not available. Most penologists emphasize that the purpose of imprisonment should be rehabilitation rather than punishment and that training and education are important instruments for rehabilitation. Our society, however, has not provided the facilities and personnel needed to develop the work skills of prisoners.

Most offenders, when they enter penal institutions, have little training or occupational skills. Many of them have had unstable employment experiences, long periods of unemployment, and have poor attitudes toward work. Unfortunately, they generally leave prisons with little or no improvement in either their work skills or work attitudes.

The releasee who enters or re-enters the labor force today is handicapped by his penal record as well as his lack of skills. This additional burden makes it particularly difficult for him to find a job in an economy in which opportunities for the inadequately educated and trained are often scarce.

His lack of education and low vocational skills undoubtedly contribute to his inability to adjust to the world of work, and are apparently significant factors in his high rate of return (recidivism) to correctional institutions. At least one-third of all releasees from federal and state correctional institutions

(30,000 per year) return as prisoners.

The annual cost to the economy of maintaining the entire penal system, including police, parole officers, and the courts, has been estimated at $2 billion. Only a small percentage of this amount is now being utilized for training purposes.

Vocational training does not occur in a vacuum. A number of factors have a bearing on its success. The inmates' family structure, including child rearing practices, is an important influence. Any training program must deal with whatever positive or negative characteristics emerge as a result. The lower the inmates age, the more likely the ex-offender is of continuing in crime. He finds that legitimate means do not succeed in achieving desired goals. There is a need for continued reinforcement towards goals.

Research has clearly demonstrated that unemployment is a major cause of economically based crime. The most recidivistic category of felony offense is the economic crime. Previous research supports the hypothesis that job training and subsequent employment on a regular basis is related to parole success which in turn is likely to lead to lower recidivism.

It has been found that retraining leads to substantial improvements in the employment record of released offenders. One very important result of job training is the opportunity to train inmates not only in relevant skills, but also in proper attitudes and habits of regularity and achievement. In fact, prison work experiences can, if properly managed, provide the most stable work experience the offender has ever had. This is extremely important for later success, not only in terms of the behavior of releasees, but also in terms of making employer attitudes more favorable. In many cases, employers have expressed greater willingness to hire trainees if only because they have completed a training program.

It must be noted, however, that usual prison industries and work programs

show little relationship to after-prison success, mainly because, for the most part, these are programs of make-work and enforced idleness. They are certainly not proper training for productive work habits or skills needed on the outside.

Once ex-inmates leave prison for the outside world, studies have shown, the great majority seek employment for the first month or so. The available evidence indicates a great need for post-prison support, both in terms of obtaining a job, and in adjusting to employment, community, and family.

The first six months is the crucial period; if the ex-offender can make it, with help, through this period, the prognosis for continued success is favorable. This points up the need for such arrangements as halfway houses, within a community-oriented strategy of rehabilitation. It has been stated that the halfway house is the most important innovation to appear in the mid-twentieth century.

Explanation of the Model

When the inmate enters prison, he will be oriented to the Diagnostic Center which includes a counseling and testing service. This center will assist the inmate to explore his interests and abilities in detail and to begin the development of an employability plan. This plan includes the steps necessary to move the inmate from where he is to where he wishes to be in regards to a career.

In many cases, pre-vocational training will be part of the plan in which case the inmate will utilize the services of the learning lab. He will improve his reading, and computational skills and begin to become involved in vocational training offered in the prison.

As indicated above, the vocational training within prisons is very poor. Based on research and observation, it is lagging because operating costs are great and prison administrators are not willing or able to budget for such programs.

The in-prison adjustment to the community phase begins when the inmate has indicated the ability to behave well in prison and has made progress with the

employability plan. It can take the form of either a work release program where he works in the community and returns to prison directly after work, or by continuing the vocational training but in the community utilizing community vocational facilities. The third option would be a work-study program where he works part-time and trains part-time. At this time the inmate begins to benefit from job development efforts that are being carried on by prison counselors and job development experts.

The third phase of a prisoner's term, again based on his positive behavior, is the halfway house. He is moved to a community facility which is minimum security with no final release time limit indicated. His options here are similar to the last phase in terms of work and study offerings, but differs in that the inmate contributes to his room and board, has continuously greater amounts of freedom and can be released before completing his term if recommended by halfway house staff.

Release from the halfway house can take as little as two weeks, or as much as six months to a year depending on inmate progress. Release is speeded if the inmate has permanent placement and has given evidence of self-sufficiency.

The parole phase includes close follow-up work by parole officers for a minimum of six months. This assistance should take the form of providing continuing counseling assistance related to the job, family and other problem areas that might complicate release and cause frustration and ultimately return to prison.

BIBLIOGRAPHY

An Evaluation of M.D.T.A. Training in Correctional Institutions, Vol. 1, March, 1971.

"Back to Jobs, not Jail," N.J.E.A. Review, Vol. 45, Number 3, November, 1971.

Jacks, James C. "Education and Training in Correctional Institutions," Center for Studies in Vocational and Technical Education, The University of Wisconsin, 1968.

Report and Evaluation of an Experimental and Demonstration Project in Basic Education, Pre-Vocational Training, Education Department, Sierra Conservation Center, Jamestown, California, September, 1970.

Statistical Abstract of the United States, 1970, U.S. Department of Commerce, Bureau of the Census.

Conducted personal interviews with Administrators of:
California Rehabilitation Center
Chino State Prison
Central City Correctional Center
Midway Correctional Center
Community Return Project
Vinewood Correctional Center for Women
Salt Lake City Correctional Center

DISADVANTAGED PERSONS

Bob Sartin

Definitions

Disadvantaged persons are those persons who cannot succeed in the regular program of vocational education.

The regular program of vocational education ...

- is planned and operated in a manner which meets standards established for programs of a similar nature
- has an expected rate of progress
- specified entrance requirements

Characteristics of Disadvantaged Persons

- Ineffective communication -- oral, written
- Subminimal arithmetic skills
- Essential mathematic competencies absent
- Poor concentration, short attention span
- Inappropriate social/cultural skills
- Occupational goals lacking
- Inadequate psychomotor and/or perceptual skills

Mechanisms for Identifying Disadvantaged Persons

- o Staff opinion
- o Achievement tests
- o Diagnostic tests
- o Grades
- o Absenteeism
- o Extreme classroom behavior -- disruption, withdrawal
- o Follow-up

Model for Test Battery Development

Intended:

Present:

6: Each enrollee is tested and counseled; Battery/tests (A) Diagnoses (B) Predicts success in each occupational area

5: Composite battery with parts of national and local tests; norming, etc., in process

4: Composite battery with significant relation to training content

3: Nationally developed tests with local norms

2: Nationally developed and normed tests

1: Admission with no testing and/or counseling

VOCATIONAL EDUCATION DISADVANTAGED ACCOUNTABILITY SYSTEM (VEDAS)

Tony Pitale

Introduction

The purpose of this meeting is to explain the tentative framework of a system for providing and improving vocational education services to the disadvantaged as well as evidence of accountability.

We hope to utilize the expertise in San Francisco to improve the structure and fill in the components. The result will be an accountability system acceptable to a large urban school district and the State Department of Education. It is hoped that this mutually developed system may be pilot tested in a large urban school district, improvements made, and the resultant model be transported for use in other urban districts. In this way, the educational needs of disadvantaged and the administrative requirements of vocational educators may be more adequately satisfied.

A Definition of Accountability

Within the educational setting, "accountability" might be defined as follows:

A condition which organizational decisions and practices are routinely made in order to gradually improve the quality of student performance in an educational effort.

This definition implies the presence of certain basic processes:

- o community and staff commitment to valid common goals;
- o performance objectives throughout the organization;

- o routine logging of reliable information about inputs, processes, results;
- o routine non-technical interpretations and review;
- o corrective actions consistent with results.

Thus, typically after two or three years, the organization (and all individuals and units within it) will be accomplishing all or the vast majority of its objectives and, as a result, measures of student attitudes and achievement will show uniform gains with all minimum performance standards being met.

History of Accountability Movement

Through the 1950's, vocational education programs were planned and implemented with varying, usually practical levels of sophistication. The emphasis was on the classification of occupations and development of skills that related to each vocational area with comparatively little formal attention to evaluation for purposes o gram improvement or accountability.

In the Vocational Education Act of 1963, the advent of special services for disadvantaged resulted in new administrative problems concerning methods to provide specialized services to the individuals with special needs.

More recently public attention has focused on many public agencies resulting in increased needs for evaluation as well as deliberate generation of information for accountability. These needs exist for the total program of vocational education and especially for programs offering special services for disadvantaged.

At this time, the public eye is sharpening and demands for involvement and accountability are becoming more specific. Therefore, we suggest that there is need for a process which will result in appropriate services delivered to appropriate people while providing evidence of accountability.

The tentative process that is illustrated is called a Vocational Education Disadvantaged Accountability System (VEDAS). This proposed VEDAS includes four

general management components which interrelate to comprise a system.

The components are:

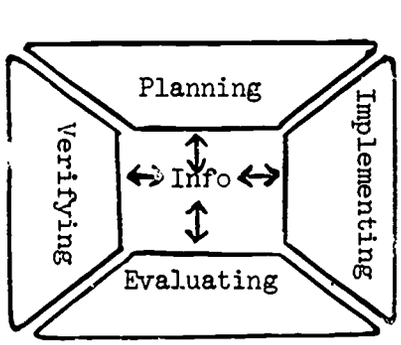
Planning

Implementation

Evaluation

Verification

These four components exchange required information as follows:



The four components surround and interact with an information center which provides for identification, organization, and distribution of appropriate data and information to and from the school and community. Once the system is operational, the components are generally utilized in a continuous circular pattern. We might begin by explaining the structure of Planning.

Planning

Planning is a management activity that identifies and utilizes necessary information to design and provide for implementation of a program of services to remove disadvantagements. The factors to be considered in planning a program of services may include the following:

- o analysis of existing programs, resources and needs
- o establishment of goals and objectives
- o identification of possible alternative programs and required resources
- o given needs and available resources, select appropriate alternative

- o prepare implementation plan for selected program of services
- o prepare plan for information flow
- o prepare plan for evaluation of program of services, and VEDAS for purposes of decision making, improvement and verification.

Implementation

Once the various components of the system have been developed, the implementation of these components will be procedural. The system will be monitored and improved as it provides quality services designed to remove disadvantagements from identified students. As the system operates during this step, information for evaluation and accountability will be provided at the appropriate time.

Evaluation

During this phase we examine the process and results of the program to identify effectiveness and efficiency. This analysis includes all activities that contribute to detract from the removal of disadvantagement from vocational education students. The results of this analysis will assist planners in modifying and improving the program where possible. An equally important outcome of this phase is the generation of useful information for verification purposes.

Verification

At any time during the VEDAS, appropriate information can be made available for any legitimate request from a group/agency which will verify the extent to which the vocational needs of the disadvantaged are being met. In addition, a method of periodically providing public information through appropriate media will be incorporated.

RECOMMENDATIONS FOR THE APPORTIONMENT OF TITLE B FUNDS IN CALIFORNIA

Shelby E. Wagner

SCHEMATIC OF DISTRIBUTION OF VOCATIONAL EDUCATION FUNDS

FEDERAL GOVERNMENT
V.E.A. 1963
V.E.A. 1968
(90-318)

VARIOUS STATES

Alabama — California — Wyoming

Title A | Title B | Title C | Title D | Title E | Title F | Title G | Title H | Title I

- Unified, High school and Community College Districts write application... stating purpose and giving assurance of compliance that funds are not used to supplant state or local funds.
- Consideration is given to maintaining, improving, and expanding Vocational Education programs.
- Funds made available must contain provisions that 15% of the appropriation is spent for vocational education of the disadvantaged.
- Funds made available must contain provisions that 10% of the appropriation is spent for vocational education of the handicapped.
- Allocation of funds is determined by a weighting factor based on average daily attendance.

PROPOSED CHANGES IN THE ENTITLEMENT SYSTEM FOR FUNDING PART B

Question sixteen on the list of problems to solve read, "How might the entitlement system for funding of Part B be improved?" This paper, in summary form, will address itself to that question.

The majority of the high school and unified school districts are faced with a shortage of operating capital during the months of July, August, and September. The reason, although apparently simple, stems from a complex, financial struggle that has existed for years between the schools and the state legislature. The results show that school districts have spent their reserves to accommodate their needs. Specialists in school finance today recognize this need and recommend school districts no longer carry a ten percent item of the budget as the reserve, but have an adequate cash flow.

An adequate cash flow is one that allows the district the opportunity to operate during the low monetary income months without borrowing. In a few cases each year, districts are forced into this situation. An example of this in the 1972-73 fiscal year is the Bonita Unified School District of Los Angeles County.

A cash flow chart will depict the major sources of district income as secured taxes and principal apportionment. Secured taxes are paid to the district in the following manner: one percent in September, ten percent in November, thirty-seven percent in December, three percent in January, twenty-four percent in April and twenty five percent in May. Principal apportionment is paid to the district in the following manner: six percent in July, twelve percent in August, eight percent each month from September to January, with the balance paid February through June.

Because entitlements are paid quarterly, with no more than seventy-five percent reimbursed prior to completion of the program, it is recommended that the first quarter's funding be advanced to the district and should be received near the start of the first quarter.

In 1972-73, Part B funds for California totaled over thirty-two million

dollars of a total package (Parts A-I) of slightly under forty million dollars. Thus, eighty percent of the Vocational Education program funds are in the Part B entitlement. But despite this amount, small districts of less than ten thousand average daily attendance receive a small share. In some cases, the smaller districts receive the funds earmarked for the disadvantaged and handicapped, only to return them to the general category for redis- bution. The districts do not have the time and talent necessary to complete the paperwork. It is recommended that the funds to be utilized for the disadvantaged and handicapped be removed prior to allocation of the remainder of the Part B funds. These funds, which total twenty-five percent, would remain to be allocated for approved projects for the disadvantaged and handicapped. School districts would have greater freedom in their curriculum offerings and could more effectively coordinate vocational and general education.

Mr. Roland Boldt and Dr. Erick Lindman have presented some financial considerations and concepts. One of the concepts discussed concerned the "weighted pupil." This concept needs little clarification.

The weighted pupil concept was utilized for the purpose of distributing funds to the community colleges as well as the high schools. It was thought that the funds should be distributed to the participants in the same ratio as they were expended previously. Thus, community colleges received forty-two percent of the funds.

One must note that, generally, the assessed valuation per pupil in the community college is higher than the assessed valuation per pupil in the high school district. As such, the community college has the opportunity to raise a much more significant amount of revenue by levying the same tax as the high school district.

Dr. Lindman has recently noted that one must look at the excess or residual

cost in a different light. By taking the total cost of vocational education (the addition of direct, indirect, and new equipment costs) and subtracting the entitlement, districts are left with the excess or residual cost. It is recommended that entitlement funds be allocated on a percentage basis to all eligible based on the excess or residual cost concept. In 1969-70, community colleges would have received approximately thirty-eight percent of the available funds.

There is a need to assess what a particular district is doing for the vocational education program. This assessment must be in terms of comparison to other districts. As such, we are measuring local effort.

Allocations were previously based on a formula of comparing average daily attendance. The district's average daily attendance was divided by the state's average daily attendace with a factor the outcome. This factor was applied to the total share of the funds to ascertain the district's share.

There were some inherent problems. Small districts with one thousand students and many vocational education programs would have the same factor as a district with one thousand students and perhaps one vocational program. The formula was changed to aid those districts with good effort.

Under the present formula, the district's vocational education average daily attendance is divided by the state's vocational education average daily attendance. This tends to reward those districts which are making a major effort in vocational education and a commitment thereof.

The dilemma, however, arises out of the reporting procedures. As a result, the state has been unable to allow more than twenty percent of the total money to be distributed by vocational education average daily attendance. It is recommended that the formula be changed to allow the attendance in vocational education courses to be the major factor in distribution of funds, perhaps as much as eighty percent.

In August, 1972, the California State Supreme Court ruled in the Serrano-Priest decision that the wealth or lack thereof should not affect the education and opportunity for education for his child.

To partially solve this problem, it is recommended that a percentage of entitlement B money be set aside, with districts given the opportunity to submit applications based on local projects. Funds would be allocated to districts on developed criteria that would include the value of the aforementioned project. Funds would be distributed in a matching manner in inverse proportion to the wealth of the districts. Thus, a poor district would be forced to commit ten percent local funds to receive ninety percent state funds. A rich district would be forced to commit ninety percent local funds to obtain ten percent funds. This concept may serve to meet the provisions of Serrano-Priest.

PROPOSED CHANGES IN TITLE B FUNDING

- A SUMMARY -

1) Change dates of payments of entitlement

   Under the current system, the entitlement payments are made quarterly. School districts are financially pressed because of the "cash flow" processes and need the first allotment of funds prior to the start of the first quarter.

2) Remove the disadvantaged and handicapped funds from the regular funds

   Because the amounts of allocations are small, school districts often return this portion of the funds back to the state for redistribution. To avoid small and ineffective programs, these funds should be removed before entitlements are granted and allocated for approved projects.

3) Change the share of High School and Junior College Allocations

   Weights were initially given to High Schools and Community Colleges based on average daily attendance in the ratio of 58 to 42. This was

the approximate ratio of money spent prior to the inauguration of the entitlement system as adopted by the Federal government. Basing the allocation on excess costs would be a far more equitable means of distribution.

4) Change the allocation of funds

The allocation of funds should be based on two factors. Approximately 50% of the available funds should be granted on the formula of the District's vocational average daily attendance divided by the State's vocational average daily attendance. This rewards those districts with large and high percentage of students in vocational education programs. Approximately 25% of the available funds should be granted on the formula of the District's average daily attendance divided by the State's average daily attendance.

5) Allow 25% of the available Title B entitlement to be utilized by districts in creative projects

Because of the Serrano-Priest decision, local effort and the wealth of districts would be a key ingredient. Under this provision, districts could write projects and submit applications. Allocations would be granted with the poorer districts receiving a greater percentage of money. Funds would be distributed on a matching or percentage basis.

A MODEL TO DIVIDE VOCATIONAL EDUCATION MONIES AMONG SCHOOL DISTRICTS AND REGIONAL OCCUPATIONAL CENTERS--REGIONAL OCCUPATIONAL PROGRAMS

Alan P. Wunsch

Historical Development of Regional Occupational Centers and Regional Occupational Programs in California

Regional occupational centers and regional occupational programs have progressed from the original concept to a workable and viable part of the total educational system in California. Historically, these stages of growth and refinement can be directly related to the additions, deletions, and modifications of the statutes. A summary of these actions follows:

- 1963: Senate Bill 1379, passed by the Legislature, permitted any county superintendent of schools or any high school district to establish and operate at least one countywide vocational high school. The provisions included a 15 percent permissive tax for operation (10 cents) and construction (5 cents).

- 1965: In response to resistance to the concept of separate "trade schools," the Legislature changed the title from "Countywide Vocational High Schools" to "Regional Occupational Centers."

  By 1967, one regional occupational center was established.

- 1968: The Legislature added the language "regional occupational centers or programs," thus permitting the use of multiple facilities in various locations in lieu of a single, central facility. The regional occupational program was defined to be a "vocational or technical training program which meets the criteria and standards of instructional programs in regional occupational centers and which is conducted in a variety of physical facilities which are not necessarily situated in one single plant or site."

  By 1969, two regional occupational centers and some 15 regional occupational programs had been established.

- 1971: The Legislature expanded the number of ways a regional occupational center and a regional occupational program could be established.

Purpose of Regional Occupational Centers and Regional Occupational Programs

As stated in the California State Plan for Vocational Education, the purpose of regional occupational centers and regional occupational programs is the following:

> to provide a means whereby vocational, technical, and occupational educational programs can be extended through a wider variety of specialized courses to serve a larger number of students than can be provided adequately, efficiently, and economically by a single district. It is a further intent to provide high school students and graduates and out-of-school youth and adults, regardless of the geographical location of their residence in a county or participating region, with the opportunity to enroll in a vocational or technical training program.

The Present Situation

During 1970-71, California had five regional occupational centers and 23 regional occupational programs. These centers and programs were located in 27 of California's 58 counties and involved 142 high school districts. Total enrollment in these centers and programs was 41,350, with 20,186 identified as high school students and 21,164 as adults. The enrollment represents 8 percent of the total eleventh and twelfth grade and adult school enrollment of the 142 participating districts.

The total income for all operations was $21,112,605 during the 1970-71 school year (see Figure 1). The largest portion of income (73.5 percent) was derived from various types of permissive tax levies, depending upon the manner in which the ROC/ROP was established.

The second largest portion of income (17.0 percent) related to the funding of an ROC/ROP, was the receipt of state support through ADA. An ROC/ROP is credited with a full unit of ADA for each 180 minutes a student spends in an ROC/ROP sponsored training program. The arrangement allows a participating school or district to receive a full ADA unit for a student who spends 240 minutes per day in his parent high school. The ROC/ROP also receives an ADA unit for the

same student if he spends 180 minutes in an ROC/ROP program or a partial unit proportionate to the actual time spent in such a program. The point is that ADA generated by the ROC/ROP does not take away any portion of the ADA earned by the parent school or district sending a student to an ROC/ROP program.

As of the present time, no federal funds are available directly for the support of regional occupational centers or programs, other than the 2.0 percent from VEA Vocational Education Act of 1968. These monies are obtained under the title of "special projects' such as grants for conducting workshops and short-term training programs for administrators, teachers, and counselors who are involved in ROC/ROP programs.

If indeed, direct Federal monies are approved for use in operating ROC/ROP programs at some future time, the following recommendations are made for an equitable distribution of these funds:

Recommendation No. 1--According to Program Load

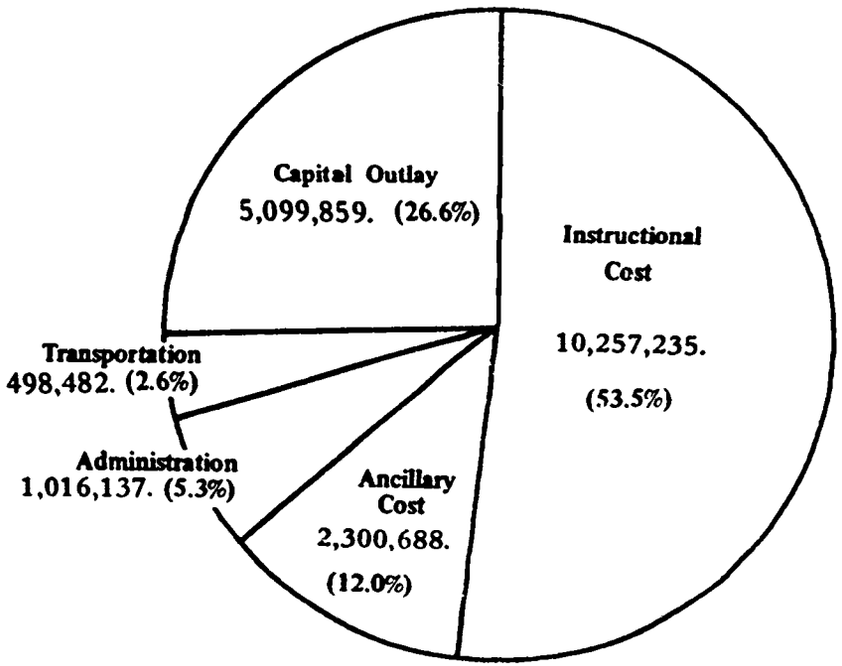
Program load can be defined as the number of students who might benefit from an ROC/ROP. This can be considered potential program load as opposed to actual program load. In the case of ROC's/ROP's, a potential load measure for those participating in the ROC/ROP would be the number of those students who were not expected to complete a bachelor's degree. Varying states will have a wide range of their potential vocational education students attending ROC/ROP classes because of different ways in which ROC's/ROP's are formed and differences in the willingness of students to attend.

Recommendation No. 2--According to Program Accomplishments

Program accomplishments are the outputs of ROC's/ROP's. This concept can be measured by the number of enrollees, certificates earned, or graduates placed on jobs upon completion of the program.

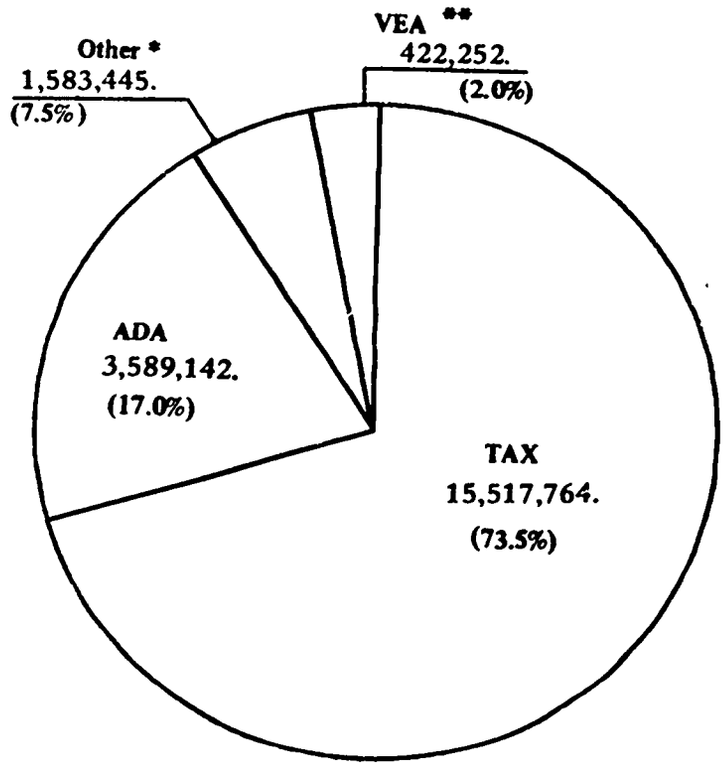
Expenditures for 1970 - 71

$ 19,172,403. represents a 55.6% increase over 1969 - 70



Income for 1970 - 71

$ 21,112,605. (Income figures were not available from 1969 - 70.)



* Other includes grants from participating schools, MDTA, WIN, Apprenticeship Programs & Reserve or carryover.

** VEA Vocational Education Act of 1968

Fig. 1. Financial Information for Regional Occupational Centers and Programs in California, 1970-71

Recommendation No. 3--According to Fiscal Need

Fiscal need is the amount of money needed to operate a minimum level of services after a minimum fiscal effort has been used to pay for these monies. Fiscal need, in the case of ROC/ROP programs, is the cost to the Federal Government of providing vocational education to students after a minimum percent of state and local tax bases has been spent for vocational education.

In education, a minimum level of service usually reflects the number of students who are to be educated. As numbers of students increase, measures of fiscal need will increase. Since measures of potential program load are based on students also, fiscal need and potential program load measures are likely to be directly related.

Recommendation No. 4--According to Fiscal Effort

Fiscal effort is the amount of financial resources spent on services. In terms of school districts' fiscal effort for education, the current expenditures of those school districts for ROC/ROP programs above the monies collected for taxes and ADA is one measure of fiscal effort. These monies could be funded on a dolar-for-dollar basis.

BIBLIOGRAPHY

Bregman, Ralph, Parker Foster, and Gregory Channeson, "Imperial Valley Occupational Survey," A Report on the Condition of Vocational Education in the County of Imperial, California, 1971.

Corwell, Fred, et al., "Orange County Regional Occupational Program Study Report," March, 1970.

Gilbert, Paul. "Relationships of Federal Grant-In-Aid Programs to National Goals for Vocational Education and Goals For Grant-In-Aid." Unpublished doctoral dissertation, University of California, Los Angeles, 1972.

Smith, Wesley P., "Status Report for 1970-71 on the Regional Occupational Centers and Programs." State of California, Sacramento, September 14, 1972.