DOCUMENT RESUME

ED 048 093   SP 004 567

AUTHOR   Le Baron, Walter Alvin, III
TITLE   The Education Industry Planning Consultant: An
                Emerging Role.
PUB DATE   21 May 70
NOTE   264p.; Doctoral dissertation presented at George
                Washington University, Washington, L.C., May 1970

EDRS PRICE   EDRS Price MF-$0.65 HC-$9.87
DESCRIPTORS   *Consultants, Education, *Educational Planning,
                Industry, Public Schools, School Industry
                Relationship, *Staff Role

ABSTRACT
                This study defines the role of the
education-industry planning consultant. The planning consultant is
envisioned as an independent agent who will be concerned with
improving the interaction among school districts and the education
industry through facilitating the use of comprehensive, long-range
planning. He is seen as functioning to provide a common ground among
the parties involved in educational planning. Following an
introductory chapter, two chapters discuss the background to the
problem. Chapter 2 develops the present status of education-industry
relationships, and Chapter 3 presents a theory of educational
planning. Chapter 4 presents a description of the education-industry
planning consultant's role. This chapter includes the reactions of a
selected jury of respondents who were asked to predict the value of
the role. Chapter 5 summarizes the study and presents recommendations
based upon it. (Author/FT)

Copyright By

WALTER ALVIN LE BARON III

1970

The Education Industry Planning Consultant

An Emerging Role

Walter Alvin Le Baron III

B.A. 1960, State University of New York, Albany
M.A. 1961, The University of Colorado, Boulder

A dissertation submitted to the Faculty of the
School of Education of the George Washington
University in partial satisfaction of the
requirements for the degree of Doctor of Education

May 21, 1970

Washington, D.C.

This Study is Dedicated to:

Beatrice Martin Le Baron

and

Vikki Zygmunt

Two Friends of

Then and Now

Directed by Wesley Thomas Carroll

Professor of Education

TABLE OF CONTENTS

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

The interrelationships of the institutions and organizations
within the American culture are changing radically in response to
new and seemingly endless technological advances. Value systems
sometimes seem confused; sources of authority shift from well
established, traditional patterns, to new forms of special expertise
developed to meet the emerging problems of predicted alternative
futures. Through all this change the schools find themselves in
a state of flux, called upon to undertake virtually impossible
challenges and to work with new and frequently strange forces repre-
senting these technological thrusts.

The educator in the midst of these changes finds himself
confronted with the conflicting demands of decision-making and
critical, disinterested analysis, a position peculiarly suited to
conflict, but one offering exciting challenges, because as
Etzkowitz and Schflander state:

> To try to be an omniscient, rigidly objective, or value-
> free observer from afar is not only to abdicate from one's
> responsibilities as a citizen but to condemn oneself to be
> an essentially irrelevant critic; for it is only by
> participating in the most important and macroscopic areas

1

of life in one's society (and in our society that means
large and complex organizations) that one will have the
relevant resources, data, and materials to develop a
proper analysis of that society.[1]

In this spirit the questions concerning the effective rela-
tions among industry and education can be approached as basic to
understanding the directions of change in the institution of educa-
tion. The field deserves careful attention, and one small part of
it is dealt with in this study.

STATEMENT OF THE PROBLEM

This study will define a developing educational role: the
education-industry planning consultant. The role envisions an
independent agent who will be concerned with improving the interaction
among school districts and the education industry through facilitating
the use of comprehensive, long-range planning. He is seen as
functioning to provide a common ground among the parties involved
in educational planning.

The industrial community, at once the consumer of the school's
products and the supplier of its needs, relates in a host of ways
to the institution of education. During the past five years (or
with the inclusion of some historical precedents, perhaps twenty
years) an "education industry" has developed. This group, composed

---

[1]Henry Etzkowizt and Gerald M. Schaflander, "A Manifesto for
Sociologists: Institution Formation--A New Sociology," Social
Problems, reprint, undated.

many traditional elements--text publishers, furniture manufacturers--

and some new concerns--computer software houses, magazine publishers,

and film maker --seeks to directly affect the nature of the curricular

aspects of the schools. The change is one from passive supplier

of components to active developer of programs. These industries

see themselves as contributing to the process of education; they

are too often seen as exploiting the public domain. In response

to these changes new formats of interaction and cooperative planning

are required, and the education-industry planning consultant is seen

as one aspect of these new relationships.

RATIONALE AND ASSUMPTIONS

The schools, in their relationships with industry, are faced

with several choices: to compete, to cooperate, or to plan integrated

approaches to educational planning. In either case, a condition

of mutual suspicion may be maintained or it can be mollified by

effective models of interaction. Within this context the following

assumptions guide this study:

1. Technological processes (the concern will be with the
   process, not the gadgets) developed by industry can
   make useful contributions to the public schools, but
   they require an explicit planning process.

2. The future will witness a closer relationship between
   schools and industries, not only because of potentially
   increasing profits from an expanding industry but
   because of the increased centrality of education within
   our culture and the necessity for mutual program planning
   and development.

3. Education as a field has not devoted adequate resources
    to the development of planning capabilities (along
    with the concomitant processes of research and develop
    ment or to the development of planning roles and
    functions). Education can find significant expertise
    within the industrial community which can be useful
    itself and which can serve as background for the
    development of educational planning missions.

4. The collection of planning techniques, sometimes grouped
    under the headings of long-range, comprehensive planning
    or "systems analysis," provides a strong potential
    resource for education, when they are carefully defined
    and applied. This use will require the specific design
    of their application to educational planning.

5. The average school district could not support the
    kind of planning expertise envisioned by this consultant
    role. (Indeed, he must be a man with one foot in each
    of two different worlds: education and industry). This
    consideration requires the careful development of an
    outside consultant role.

6. Unless such careful planning techniques are implemented,
    the public schools will face increasing difficulty in
    using the technological developments and in the operation
    of total institutional planning.

7. The education-industry planning consultant appears to
    indicate one viable alternative for developing improved
    education-industry relationships through the use of
    long range, comprehensive planning techniques.

LIMITATIONS

The following limitations are envisioned by this statement:

1. The study is concerned with the area of curriculum
    and instruction; the construction of buildings and
    facilities or provision of institutional services will
    be of interest only as they may affect planning of the
    school's program.

MAR 29 1971

2. The study is concerned with the application of planning
   techniques to the field of education. It views
   these techniques as having developed through the efforts
   of industry and as producti.e for the public schools.
   The study, however, is not concerned directly with the
   planning, development, or implementation of any specific
   technological device or process, except as examples
   may contribute to an understanding of planning processes.

3. The study is limited to a concern for the public
   schools (as opposed to the whole of education) in a
   system-wide context.

4. In general, the study will be concerned with develop-
   ments during the past five-to-ten years, since this
   period spans the new form of industrial involvement
   with the problems of education in the public schools.

SOURCES OF THE DATA

Since this essentially theoretical study will define a

specific role in relation to institutions, the extant research can

contribute but has not necessarily operated within the parameters

of this study. Primary sources of data, therefore, must include

the following:

1. The broad literature on planning (management planning,
   comparative education, futures-planning, and systems
   analysis), consulting, and educational-industry
   relationships.

2. Selected special studies, monographs, resea;   ;.oi 3,
   and evaluation studies, as appropriate.

3. Site visits, interviews, and other contacts with
   individuals presently involved in either the consulting
   role or with projects which help define the need (and
   limitations) on such a role.

Since the study i; intended to explicate an operational

theory, the collection of new data through the use of a formal data

collection instrument will not be undertaken. It will, however,

make use of the interview and case study formats as appropriate.

DEVELOPMENT OF THE STUDY

Following Chapter I, two chapters will discuss the back-
ground to the problem. Chapter II develops the present status of

education-industry relationships, and Chapter III presents a theory

of education planning for use within the universe described by

Chapter II. Each of these chapters will include a review of the

literature, an analysis of present theories in the field, and some

interpretation of the events which help define the consultant role.

Interview material, reports of site visits, and/or case studies will

be included within these chapters.

Chapter IV presents a description of the education-industry

planning consultant's role, which emerges from the study, including

functions, roles and relationships, background and experience, and

potential contract relationships. The chapter includes the reactions

of a jury of respondents who have been asked to predict the value

of the role. Procedures for the study, including modification of

the "Delphi technique" are described in the chapter as they relate

to the use of respondents for testing statements about the role.

Chapter V summarizes the study and presents recommendations

based upon it. Among these latter should be guidelines for using

the consultant an7, in general terms, for improving the interaction
of the local school district and various industrial organizations
(in harmony with universities and other organizations) for the
improvement of the educational process.

The general approach to extant theory and research will be
critical; that is, these areas will be viewed in terms of their
contribution to the development of an effective consultant role.
In this respect close attention will be directed to the principles
underlying research projects, application of technologies, examples
of education-industry cooperation, and the relation expressed
between research and the public schools.

Guidelines for the study are provided by the body of theory
usually referred to as systems procedures or long-range educational
planning, and the role of the consultant will be developed through
this context.

DEFINITIONS

There should be little need for the use of unusual or
esoteric vocabulary; indeed, if the project is to achieve its goals,
it should clarify terms rather than add to an already crowded
vocabulary. Nevertheless, as new terms are used, they will be
defined in context. At this point, the following meaning is assigned
to these expressions:

Consultant: Since a basic purpose of this study is to
define a consultant role, it cannot be adequately explicated here.
The term is intended to encompass a group of functions which depend
on expertise (in this case planning expertise) and which assume a
non-permanent relationship to the organization being served by the
person performing these functions. Within these guidelines the
roles and functions of this particular consultant will be developed
through the course of the study. Note, however, that the education-
industry planning consultant should not be confused with the
"supervisor" or supervisory consultant roles or with product "salesmen"
who are sometimes called consultants because they provide sales
services.

Industry: An organization, privately or publicly owned
profit or non-profit, which provides a product or a service, but
which falls outside of government (or other political) boundaries
will be included within the industry framework for this paper. The
definition, however, excludes foundations (and other essentially
charitable and service groups), universities, colleges, and other
educational organizations (with the possible exception of research
corporations sponsored by these institutions), and any branch of the
military (or federal government). Included will be small (even one
man) consulting organizations and the giant conglomerates. The focus

9

will be on industry only as it relates to public school educational
programs.

    <u>Systems Analysis</u>: A section of the study will be devoted
to an explication of the processes and terminologies relevant to
systems analysis and other planning principles, but the term should
be understood as a general expression encompassing some established
techniques for problem analysis and planning.

<center>NEED AND SIGNIFANCE</center>

    <u>The education-industry planning consultant role</u> contributes
to the mutually effective interaction of the public schools and the
education industries by providing a link between these agencies
through the use of planning. The role, however, has received little
attention in the literature of either industry or education. Con-
sequently, the study should prove significant to the field of
education because it will define and predict new forms of interaction.
The study should provide guidelines for the use of the education-
industry planning consultant by local school districts, indicate
problems in the use of cooperative planning techniques, and define an
operational context for some kinds of industry-education relationships

CHAPTER II

THE INDUSTRY-EDUCATION RELATIONSHIP

INTRODUCTION

This chapter presents a description of present industry-
education relationships. The focus centers on the institutional
format of the industry-education relationship and on some of the
major forces which underlie developing relationships. Two major
themes are pertinent. The first, technological implementation in
education, suggests the basis for the developing industrial stance
towards public education. The second, comprehensive planning,
indicates a need resulting from technology and a condition for its
successful application. This area will be discussed in Chapter III.

The implications of the emerging industry-education relation-
ship are profound. Fritz Machlup, an economist, has coined a new
economic category called the "knowledge industry."[1] Machlup claims
that this knowledge industry eventually may claim 29% of the gross
national product. Kerr has placed education in this perspective:

---

[1]In Warren G. Bennis, Organization Development: Its Nature,
Origins and Prospects (Reading, Massachusetts: Addison-Wesley, 1969),
p. 25.

What the railroads did for the second half of the last
century and the automobile did for the first half of this
century may be done for the second half of this century by
the knowledge industry: that is, it will serve as the
focal point of national growth.[1]

The dimensions of this increasing application of resources
to education and the consequent effects on roles and functions for
the public schools, including new demands for industry linkage,
are only recently being recognized. Coping with these forces will
become a significant task for industry and educational policy makers,
but they will require specialized assistance. One role which
appears viable for this purpose is the education-industry planning
consultant. The role is suggested by the relationships developing
because at industry's direct thrust upon the curricular and instruc-
tional aspect of education. These developments form the basis for
this chapter and define the universe of the consultant's concern.

THE INDUSTRY INTEREST IN EDUCATION

American industry and education have been closely related
throughout the Nation's history. Indeed, many economists see the
growth of industry as directly related to the rapidly increasing
literacy level achieved through a system of public education. For
this reason, satisfying the needs of industry for a highly trained

[1]Clark Kerr, The Uses of the University (Cambridge, Mass-
achusetts: Harvard University Press, 1964), p. 86.

labor force (the obverse of meeting the vocational interests of individuals) has been a traditional role of the schools. On the other hand, industry has supplied the products required by the schools to build and operate the plant, including the materials and equipment for instruction. This supply function extends from plumbing fixtures to blackboards, and from wall clocks to teaching machines. School management and organization have tended to parallel industrial developments in these areas, although important modifications are necessary because of different purposes. A long tradition of interaction between industry and education has developed as a result of mutual interest and needs.

This historic relationship, however, kept clearly distinct the infringement of industry on the selection or design of the school's instructional and curricular elements. In effect, teachers told industry what kinds of teaching materials were required, and industry provided them. A similar relationship existed for other products. The process would look something like this: A teacher (or a university professor of a school subject) would sense a need for a new text (or some other material). He would write the text, perhaps illustrate it, and experiment with it on his classes. If the material seemed worthwhile, the teacher would contact a publisher and undertake to have it distributed formally. Since there is great

13

commercial competition for good material, the publisher may have
contacted the writer first, or the publisher, sensing a need for a
new text, may ask a teacher to prepare one. This latter instance is
less common, however. Once the text is on the market, the publisher
(industry) undertakes to manufacture, advertise, sell, and dis-
tribute the product. The writer receives payment through a royalty
based on sales. Classroom teachers criticize the text, and their
reorder preferences determine how long the product stays on the
market.

This sketch of the traditional interaction among school
teachers, writers of instructional materials, and publishers is
bare-boned, but it does focus on the significant elements of the
traditional relationship. Perhaps the major problem has been
communication, especially from the viewpoint of the classroom teache
Publishers generally advertise their materials through journals
and at convention exhibits. Copies of texts are presented to
principals and are sometimes available in district instructional
materials centers. Teacher choice, however, has been limited to
selecting among finished products. Only inadequate opportunities
have usually existed to effect the selection of materials prior to
publication. Frequently, the complaint is heard that publishers
sacrifice individual and regional differences to the demands of the

mass market. Educational planning has frequently been limited by the availability of texts and other instructional materials.

From the industry point-of-view, rapid changes in teaching materials, especially expensive textbooks, limit profit potentials by increasing development and production costs. Hardcover books face stiff competition from paperbacks and from new duplicating techniques (spirit duplicators and off-set methods) which facilitate a teacher's design of her own materials. Many major curriculum projects, for example, CHEM Chemistry, PSSC Physics, and "The New Math," required planning and design funds in excess of potential profits from publication. Their development has been supported by foundations and the federal government, and publishers acted only as distribution facilitators. This kind of multi-institutional cooperation for materials development has helped promote a new look at industry's responsibility for product planning and develop-ment.[1]

THE EDUCATION INDUSTRY

During the past ten years, we have seen the development of the "education industry," and it has become fashionable to speak of

---

[1]It has also required Congress to reexamine copyright and patent laws, including the disposition of materials in the public domain. No satisfactory new law has yet been created, although the revisions have been discussed for the part five years.

"education as big business." Indeed, it is big business! Between

1957 and 1967, according to one U.S. Office of Education report,

educational expenditures increased from 21 billion dollars to over

50 billion dollars. Some forecasters see the figure doubling again

before 1975. Johns reports that:

> Thirty-six years ago 3.1% of our GNP went into the elementry,
> secondary, and higher public and private education. This
> year (1969) 7.6% of the GNP will be so used. In 1980 I think
> it will be 12%. Private industry knows these facts better
> than anybody else. The computer industry knows them. And
> to a considerable extent the aims of education are now being
> determined by IBM, Burroughs, and others; that is, we are
> getting the kinds of schooling that can be computerized,
> that can be conveyed in the software they can sell, by
> educational television, and so on. These industrialists are
> not politically responsible in the way our representatives
> and senators and board of education are. They are interested
> primarily in profit. Book companies and other organizations
> are allying with the electronics industries. I am concerned
> about these industrial combines taking over from teachers, and
> also from the politicians, because they can make money out of
> education and not be responsible to anybody.[1]

The size of the market does not adequately describe this new

growth industry, which represents a radical change in the education-

industry relationship. As will be developed in this chapter, it

indicates a positive thrust by industry on the planning and production

of curriculum and instructional programs and a transfer of industri-

al (and to a large extent, military) education and training experience

---

[1] Educational Planning in the United States (Second Symposium on Educational Requirements for the 1970's, An Interdisciplinary Approach), Stanley Elam and Gordon I. Swanson, eds., (Itasca, Illinois: F.E. Peacock, 1969), p. 34.

to the problems of the public schools, a transfer which includes
both new educational processes as well as new gadgets and
materials.

Before discussing these ideas, it may be helpful first to
indicate some of the major industrial groups comprising the educa-
tion industry:

The Educational Conglomerates

During the past ten years, a number of large corporations
have merged separate companies to form broad-based organizations
dedicated to the field of education. These "educational conglomerates"
provide under a single management the capability for designing and
producing a complete educational "package," including instructional
materials, facilities and equipment, teaching machines and programs,
perhaps teacher training and instructional management. One leading
example of these mergers is the General Learning Corporation. It
was formed jointly by General Electric and Time, Inc. Through its
creation systems planning resources and computer capabilities from
General Electric were merged with the creative production and pub-
lishing facilities of Time, Inc. The Silver Burdett Company, a
textbook publisher, was later added to the group. General Learning's
management then organized divisions concerned with educational
planning, curriculum and course design, and research and development.

The effect appears to be the development of an industrial group

which can focus the efforts of diverse companies on problems of

education for the public schools, the military, institutions of

higher education, and other industries.[1]

Several other conglomerates have been created in a similar

manner. RCA established an educational division which focused its

many technologies--computers, television, audio-visual aids--on

educational applications. The division includes the RCA Institute

and electronics training school, and has successfully operated train-

ing and educational programs under federal programs such as Job

Corps. RCA has acquired Random House for publish.ng support to this

division. Xerox Corporation combined Basic Systems (an educational

planning company), University Microfilms, and American Education

Publications. In so doing, it united hardware (machine) and soft-

ware (texts and microfilms) capabilities with a strong educational

planning and design group. Three major elements seem to govern

the development of these conglomerates: a capability in a major

electronic system with potential educational applications, a strong

---

1See Charles E. Silberman, "Technology is Knocking at the
Schoolhouse Door," Fortune, August 1966, and J. Sterling Livingston,
"Present Posture of the Education Technology Industry," Proceedings
of the Engineering Systems for Education and Training Conference,
Arlington, Virginia: National Security Industrial Association,
June 14-15, 1966.

and highly respected tradition in educational publishing, and a
specific emphasis on the use of systems analysis and other planning
techniques developed by the military-industrial interests.

Computer Software Firms

Computer software firms develop the programs which instruct
and control the machine. They spring up like wildflowers, usually
in response to some programming design problem, but some have been
in business since the early 1950's. Unless it was created in
response to a specific educational application, these firms seldom
see educational programming (both programmed instruction materials
and computer programs) as their primary business, but they often
find strong secondary markets in training and education. These
markets have been primarily military and industrial, but some direct
applications to public education have been attempted. Usually, the
software firm requires planning, marketing, and research expertise
beyond its basic structure before it enters the education field.
This factor limits its ability to compete with the conglomerate,
which group rapidly "buys up" small firms with good ideas.

Research and Development Firms

There are essentially three types of firms in this category:
the profit research firm, the non-profit research firm, and the

university connected (or sponsored) research foundation. Actually, the differences reflect business and legal procedures but have very little effect on function. The oldest organization of this kind is the RAND Corporation which was established as an Air Force "think tank" during World War II and became the prototype for many other groups. RAND emphasizes the use of the interdisciplinary team to design original, and sometimes unique, solutions to problems. Originally limited to Air Force (later military) questions, RAND has broadened its interests to include major social problems including education. As with most R&D firms it does no manufacturing of products based on its studies, and it tends to remain fairly small.[1]

Other organizations, for example, the Stanford Research Institute, were organized by groups of professors or by a university as devices for the management of R&D projects. They provide a mechanism for receiving government funds, hiring research personnel and purchasing research equipment, while freeing professors from the usually constraining regulations of the university. Several of these arrangements have come under attack recently because they were seen as connecting the university with the Department of Defense, but there seems to be a trend for these groups to separate from their

---

[1]William Leavitt, "RAND: The Air Force's Original 'Think-Tank,'" <u>Air Force/Space Digest</u>, May 1967, pp. 100-109.

sponsoring university anyway. A scholar may teach for a college and work for an R&D group, but one job will be part-time and distinct from the other.

These groups are funded through the contract research procedures developed by the federal government.[1] The process works as follows: A government agency (or some other organization) determines that it needs research or development assistance with a problem. (Sometimes it wants help discovering what its problems are.) An "RFP," (request for proposal), is published, and bids are requested from all interested concerns. Each R&D firm designs a proposal in response to the statement of the problem. The best proposal is selected on the basis of quality and cost, and a contract is awarded to the successful firm. The research and development work is then undertaken in terms of the provisions of the contract.

In the field of education, the contract research and development process has been implemented by the U.S. Office of Education, the Department of Defense, the National Science Foundation, the National Institutes of Health, and the Office of Economic Opportunity. During the past decade emphasis has been placed on curriculum improvement projects, applications of technology to education, the

---

[1] Information for potential contractors is available from the Government Services Administration. Most agencies maintain a contract office which will provide information to potential bidders.

development of evaluation and dissemination procedures, the design

and implementation of teacher training and differential staffing pro-

grams, and the development and design of planning functions.

The contract research procedure has been both vehemently con-

demned and broadly hailed as a method for funding research and

development. Much important development work in education owes its

existence to the availability of such funding through the federal

government and the major foundations,[1] but changing priorities and

insecure funding have frequently prevented completing long-range

projects. Translating the results of these efforts into viable, on-

going programs within the public schools, however, has remained a

significant difficulty.

Planning and Management Consulting Firms

Business and industry show indications of a well-established

tradition of using outside assistance for the solution of management

problems and for acquiring expertise on a temporary basis when it is

more efficient than permanently hiring personnel. Education, on the

other hand, seems to have resisted this technique until recently.

The primary impetus for education's use of consultants appears to

---

[1]The foundation's role is coming under serious scrutiny by the Congress. Their viewpoint is well stated by Alan Pifer, "Foundations and the Unity of Charitable Organizations," Annual Report for 1969. (New York: Carnegie Corporation, 1969), pp 3-14.

stem from three reasons: new planning and management developments
outside the field are having a direct effect on the operation of
the schools (especially through legislative requirements for
project management and evaluation); the field of education is not
producing capable and competent managers fast enough or in large
enough quantity to start the organization at all its levels; and,
there is growing recognition that hiring consultants can result in
cost efficiencies.

Consultants are usually employed on a contractural basis by a
school district or other educational agency. Some firms, such as
A.D. Little, provide a broad range of services to clients from
industry, education and other branches of government. Other firms
specialize in working with educational institutions on problems of
management, planning, curriculum design, or training. Many small
firms deal with a single aspect of the educational field, such as
long-range planning, technological applications, or cost accounting.
These consultants usually possess some special expertise as a result
of a wide range of experience with both educational and industrial
organizations. They can make strong contributions to program
development when effectively used.

This brief description may serve to clarify the organizational
changes in response to education's needs for specialized products and

services. The reader, undoubtedly, will be familiar with at least
one firm which falls outside this elementary classification, but all
industry organizations seem to share one or more of these character-
istics: (1) they are concerned with making a profit, hence, they
operate on a cost-effective budget (unlike the schools which must
keep trying to do some jobs without adequate resources or at the
whim of taxpayers); (2) they are concerned with broad-based state-
ments of problems and major improvements in the processes of
education; (3) they represent specialized sources of knowledge about
new techniques, new technologies, and recent developments from fields
outside of education (usually the military and industry); (4) they
are interested in service to education and are generally supportive
of the public schools, although both the need for radical changes
and for alternative structures are acknowledged; (5) they have
represented a threat to many schoolmen who see these new groups as
challenging the "professional" expertise of the educator; and
(6) they are concerned with results, i.e., learning achievement
resulting from effectively designed programs.

SOME BACKGROUND CONCERNS

Through a complex system of organizations, the education
industry has established itself as big business. For the purposes
of this paper, the mechanics of these business changes are less

significant than the forces which cause them and which, although

partly historical, indicate future directions. Before discussing

the present relationship between education and industry a discussion

of these forces may provide a perspective for contrasting several

approaches to the education-industry relationship.

Federal Dollars for Education

The National Defense Education Act of 1958, (NDEA), and the

Elementary and Secondary Education Act of 1965, (ESEA), are landmark

pieces of legislation so far as industry's increasing role in

education is concerned. The NDEA opened the door for the mass

acquisition by schools of equipment and supplies for the improvement

of instruction. It also funded teacher training institutes, so that

familiarity with new techniques and technological advances became

commonplace. Titles I, II, and III of ESEA provided additional

funds for instructional gadgetry and materials, although Title II

was limited to library resources, and Title I funds were designated

for underprivileged groups.[1]

---

[1]Charles S. Benson and James W. Guthrie, An Essay on Federal
Incentives and Local and State Educational Initiative. (Berkeley:
The University of California, December 1968). In this and future
references throughout the study some areas are synthesized from
various materials including particularly the source referenced
by the footnote.

Perhaps Title III, of ESEA 1965, more than any other single
legislative title, stimulated the new relationship between industry
and the schools. This title provided funds for the implementation
of innovative solutions to significant and persistent educational
problems. Under this title experiments were encouraged with
instructional television, computer-assisted instruction, dial-access
equipment, new forms of language laboratories, and a whole host of
self-instruc' onal devices. One significant intent of this act
was to encourage the application of technology within the framework
of the schools. To insure effective operation, the contract
research procedures were implemented, and school districts found
themselves competing for federal funds. It soon became clear that
most school districts did not have the resources to develop plans
for using these new technologies. The developers and suppliers--
the emerging educational industry--had to help school districts
design the use of their wares. At this point, it may be suggested
begins the redefinition of the industry-education relationship in
the areas of curriculum and instruction.

Working as consultants, manufacturers' representatives helped
local districts plan and develop proposals under Title III. Other
resources found their way to the local district, including represent-
atives of R&D groups, non-profit research firms, and independent

education planning consultants. These new resources provided

an exciting impetus to educational change, but they have also resulted

in some difficult problems for the unwary district. First, it may be

stated almost as an axiom that the closer the relationship between

the consultant and a specific product, the more the problem was

stated in relation to the product's ability to solve it. Second,

spurred by ready funds, many implementations were attempted before

the product had been sufficiently developed for use in the public

schools or the schools had been prepared to receive it. Third, much

Title III planning was narrow-gauged; that is, it assumed a change

in part of the system would affect the entire system. Instead,

these piecemeal modifications were often rendered innocuous by the

inertia of the school system. Many potential, productive implementa-

tions failed through lack of broad system planning.[1]

Requirements for Technological Planning

The legislative mandate which provoked the restructuring of

industry's concern for education should not be viewed merely as an

attempt to thwart the public. schools. Indeed, such an intention

[1]These developments are reported in Notes and Working Papers
Concerning the Administration of Programs Authorized Under Title III
of Public Law 89-10, The Elementary and Secondary Education Act of
1965 as Amended by Public Law 89-750 (Richard I. Miller, Study
Director), Subcommittee on Education, Committee on Labor and Public
Welfare, U.S. Senate, (Washington, D.C.: Committee Print, April 1967).

would be difficult to justify as a significant political motivation
for legislative action. Nevertheless, the very active lobbying
forces of the electronics, computer, and publishing industries
certainly helped to focus Congressional interest on their potential
contributions to education. It is useful to explore a few of
industry's reasons for finding a federal mandate desirable.

The first reason is _money_! Technological planning and imple-
mentation are expensive and seem to require an economic universe
larger than the average school district. The most available source
of large funding, which could also be freest of immedi-'- -nlitical
control, appeared to be the federal government. During 36? end 1965
the Congress was struggling to develop appropriate legislation to
deal with major social issues--education, poverty, unemployment.
Some technological systems developed by industry could be justified
as potential solutions to social and educational problems. All that
seemed lacking were funds for development and implementation. Indeed,
some school systems expressed a strong willingness to work with
industry, so long as additional money could be found without raising
local taxes. The federal government, therefore, through its develop-
ment of new social legislation, became the catalyst for bringing
together the schools and the developing education industry.

A second reason, and historically a highly significant one, has been industry's continuing interest in <u>finding new markets</u> for existing products. Since World War II the Department of Defense has invested huge sums for the development of technology-based training programs. Among the significant end-products of these activities have been the language laboratory, both the principles for constructing and a wide variety of completed programmed instruction courses (including many in the common core learning areas), a wide variety of teaching machines, instructional films (and greatly improved techniques for their development), a vast amount of experimentation with applications of the computer to training problems (including training simulation), and a wealth of psychological insights and design data. It seemed reasonable to assume that the public schools should offer a ready market for these items or for new products derived from this research.

The market was ready-made, especially after the first NDEA Act was passed in 1958. Programmed texts, language laboratories, teaching machines, and a host of sophisticated electronic equipment for scientific experimentation were frequently oversold to the public schools. Purchases sometimes far exceeded either instructional requirements or the ability of classroom teachers to use the new gadgetry effectively. Much of this bonanza has been left

in shelves to collect dust. One frequent result, unfortunately,
has been a group of disillusioned and distrustful educators who have
come to confront industry defensively and doubtfully. But industry
learned this "oversell" lesson well, and now a significant concern
of the industry is that one company will "rush the market" with a
new development and thereby discredit the whole group.

A third reason should be mentioned, which might be called a
sense of future direction. Despite the Viet Nam War, a clearly
discernable mandate had been evolving for massive government action
to deal with the great social injustices within the American culture.
The Economic Opportunity Act (1964) and the Elementary and Secondary
Education Act (1965) were thought to be only the initial steps for
attacking social ills. This trend was reinforced by increasing
education and training needed by the sophisticated demands of
technological employment within a science-oriented and rapidly
changing culture. Education was clearly the growth area for the
decades ahead, and industry was "gearing up" to meet the challenge.

Not five years later, a pattern of federal cut-back in the
"people areas," and the general increase in both military spending
and inflationary levels (caused by the waste of war) seem to have

dimmed this bright promise of a nation devoted to education. The

position of the education industry must be viewed in two ways.

American industry, acting in the tradition which has gained it world

leadership, predicted a major social trend (i.e., a potential market)

and prepared to meet it. On the other hand, industry rode a well-

defined wave, and when it crested, the industry found itself

internally conflicted (lacking a clear sense of purpose and

direction) and externally thwarted (lacking a financial and col-

laborative relationship).

New Psychologies and Approaches to Learning

Two developments in the field of psychology have affected

industry's changing relationship to education. The first of these,

"behaviorism," led to the development of a "learning system." The

second change concerns a radical shift in opinion about intellectual

development, especially of the young child. These two areas are not

necessarily related historically, but they are fused in the design of

technological applications to learning problems.

Behavioristic psychology implies that the goals of learning can

be stated and that appropriate experiences for achieving these goals

can be logically ordered. The learner, having understood the goals,

will be rewarded for correct responses (those leading towards the

goals). Basic to the organization of learning experiences is their

division and subdivision into a series of steps manageable by the

individual learner. If the learner fails to achieve the goals, the

system must be redesigned until it works. Responsibility for learn-

ing is shifted to the teacher for failing to organize learning experi-

ments appropriately. The system fails, not the student!

This quick sketch describes the basic concepts underlying the

design of programmed instruction and many computer assisted instruc-

tion (CAI) programs. Both are fairly straightforward examples of

learning systems. A learning system is developed by following a set

of step-by-step procedures which usually include the following:

1. Prepare the learning objective.

2. Sequence the objectives (in the presumed logical learning order).

3. Identify the required learning activities (steps to achieve the objectives).

4. Select the learning components and procedures (teaching strategies and materials).

5. Analyze the cost-effectiveness (or reasonableness of selecting one alternative over others).

6. Coordinate the components and procedures.

7. Evaluate the performance of the learning system.

8. Redesign the system as required by experience with it.[1]

Although this procedure resembles an outline for any curriculum design process, the learning system requires the careful definition of goals whose achievement can be measured. For some kinds of school learning, this measurement of learning is a simple matter. Clearly, if the student responds with 4, it may be assumed that he has learned the answer to 2 + 2 = _. On the other hand, it is perhaps impossible to write a measurable learning objective for determining a student's understanding of "beauty." This kind of problem has caused a heated debate over the usefulness and appropriateness of behavioral objectives for public school education, but the success recorded by such researchers as Hoome,[2] Gagńe,[3] and Skinner[4] has established the learning system as potentially useful for problems of public school education.

---

[1]Robert G. Smith, Jr., The Design of Instructional Systems (Alexandria, Virginia: The George Washington University, HumRRO (AD 644 054), November 1966.)

[2]Lloyd Homme, Contingency Management and "A Behavioral Technology Exists--Here and Now," (Albuquerque, New Mexico: Westinghouse Research Laboratory, 1967).

[3]Robert Gagńe, editor and contributor, Psychological Principles in System Design (New York: Holt, Rinehart, and Winston, 1965).

[4]B.F. Skinner, The Technology of Teaching (New York: Appleton-Century-Croft, 1968).

The second radical change in psychology concerns the reinter-
pretation of intellectual development and stems from the work of
Piaget, Bruner, and Hunt, among others.[1] It had been assumed
traditionally that the child's intellectual development was a "fixed"
process requiring various levels of maturation occurring at appropri-
ate chronological ages and not influenced by education and training.
The focus of early education, therefore, has been placed on the
child's social and emotional development. The child learned group
skills and various cultural-based attitudes during the early years.
Research by the persons indicated above lead to a radical re-evalua-
tion of intellectual development. It could be shown that quite
respectable levels of intellectual development could be achieved
even by very young children, using carefully designed learning
systems (and other aspects of behavioristic psychology). Two and
three year olds could be taught to read, to write, and to perform
basic arithmetic skills. And further, it was believed that intel-
lectual training could compensate for environmental defects resulting
from poverty, home conditions, or other conditions inhibiting later
educational development.

_____

[1]J. McVicker Hunt, "The Psychological Basis for Using Pre-
School Enrichment as an Antidote for Cultural Deprivation," Pre-
School Education Today Fred M. Hechinger, ed., (Garden City,
New York: Doubleday, 1966).

During the 1940's and 1950's the Armed Services and some major industries developed the concept of the learning system and found it an extremely effective method for designing training programs. During this same period the school seemed to ignore this methodology or condemned it as dehumanizing, using the presumed nature of child development as a major defense. The change in thinking about intellectual development dovetailed with the learning system designed with behavioral principals because through application of such precise planning children were learning quite complex intellectual skills. Industry, having been prepared to accept this occurrence because of its research (albeit primarily for the military), exercised greater initial flexibility than educators who had accepted conflicting doctrines.

The leadership for change, therefore, came first from a combination of non-educational psychologists (most with military training experience) and engineers who were designing and building the equipment.

The Faith in the Schools Issue

"Texas school administrators were told that declining caliber of public education may produce schools operated by large business corporations" begins a newspaper report in 1967.[1] In one sense,

---

[1]Houston _Chronicle_, January 6, 1967.

this article continues the criticism of the public schools which was
rampant in the fifties and only partly ameliorated by the reform
movements of the sixties. On the other hand, it predicts the
present situation, because industry is beginning to be viewed as
both a working partner with the schools and as a viable alternative
for achieving specified educational goals.

There are great strengths in the present organization and
structure of American public education, but the pre-technological
framework represented by the schools has not yet provided an adequate
environment for the implementation of new and potentially effective
technologies. Indeed, the organizational structure, institutionalized
professionalism and labor-intensive economics, financial levels and
governmental concern, and philosophical outlook of the schools are
most frequently in conflict with the advances in technology occurring
outside of the schools. Releasing the power of new instructional
formats based on technological advances usually requires radical
structural changes in the schools, and this condition has so far
resolved itself in favor of maintaining the status quo.[1]

---

[1]W.P. Kent, Walt Le Baron and Robert Peterson. _Feasibility of
Using an Experimental Laboratory for Identifying Multi-Media
Problems and Requirements_ (Falls Church, Virginia: System Develop-
ment Corporation, June 1968) Final Report, USOE Contract OEC-1-7-
071143-4419. See also, Commission on Industrial Technology, _To
Improve Learning_ A Report to the President and the Congress,
(Washington, D.C.: The Commission, August 1969).

The following figure, designed for this study, highlights

distinctions between the industrial and educational communities:

FIGURE 1

THE SCHOOL AND INDUSTRY APPROACH EDUCATION
IN VERY DIFFERENT WAYS

Industry thinks about educational problems based on the deliberate predication of needed.	The schools evolved from a poorly defined consensus to be all things to all people.
SYSTEMS ANALYSIS	INSTITUTIONAL CHARTER
It developed new techniques for meeting these problems.	Piecemeal additions met new needs, promised better results.

P/I	CAI	EVT/ITV[1]
NEW EDUCATIONAL TECHNOLOGIES

THE "ADD-ON" PROCESS OF
EDUCATIONAL CHANGE

It added industrial standards of management efficiency.	Tight budget and political pressures bred caution.

PLANNING-PROGRAMING-BUDGETING
SYSTEM
MODERN MANAGEMENT

SCHOOL ADMINISTRATION

The schools just couldn't keep up with new demands for quality and quantity.

It announced a new solution for old and ingrained problems.

THE EDUCATIONAL PACKAGE	THE EDUCATIONAL LAG
It looked for further applications of its developments.	It looked for new ways to do the job.
MARKETING/SALES	EDUCATIONAL RESEARCH

---

[1]P/I: Programmed instruction; CAI: Computer assisted instruction;
ETV/ITV: Educational/Instructional television.

Does the American public have faith in its public schools? Evidence has been accumulated in many directions. It is clear, however, that the traditional structure of public education is changing radically as a result of public pressures and political decisions, and these changes involve industry more directly in the process and management of education. The Economic Opportunity Act of 1964 established two highly significant programs of education outside of the public schools. The Job Corp, a vocational training program, was operated by industries through the contract procurement procedure.

The same act also established the Head Start program <u>outside</u> of the public schools, although a number of schools chose to cooperate with the local Office of Economic Opportunity agency responsible for its operation. One strong motivation for the separate educational operation was the feeling by some that the schools were incapable of dealing with the special problems of the Head Start population because of the extant philosophical and psychological orientation towards early childhood education and because the school seemed to have drifted away from the community Head Start was designed to serve.

This structural distinction provided an unsatisfactory explanation
for problems in dealing with deviant populations.

The search for alternatives to public schools has continued,
and industry has found itself playing an increasingly important role
in the process. Community schools, store front learning centers,
tutorial programs, and many other formats are being explored.
Many of these experiments use the learning systems and some of the
technological advances developed by industry. Two examples are
useful for tracing these developments.

Westinghouse Learning Corporation established a Learning Center
in Albuquerque, New Mexico. The Center serves many problem groups,
among them under-achieving junior high school students. For these
students the Center contracts with the parents to increase the
child's grade level in reading or arithmetic for a fixed fee. The
child may attend the Center until the objectives are achieved. If
the child fails to achieve and clearly won't respond to the Center's
program, the parent pays nothing. How does it work? The Center's
activities are organized around the psychology of "contingency
management." In brief, this theory states that the high expectancy
behavior can be used to motivate the low expectancy behavior. As
Lloyd Hoome, one of the Center's founders, explains, "When a mother
tells her child to finish her spinach before she can have dessert,

she is applying the basic concept of contingency management." There
is a low probability that the child will eat the spinach but a high
probability that the child will eat the dessert. The latter activity,
therefore, is made contingent on satisfactory completion of the
former. In this way, the child sees some reason for completing the
unpleasant task of eating the spinach.[1]

At the Center the unpleasant task for an underachiever may be
reading, and a pleasant task may be playing pool. The student, in
cooperation with the teacher, makes a contract to learn a particular
reading skill or complete some other task. He works on his own,
but the teacher can be asked for help. The student's reward for
completing the task will be a designated amount of time free, in
the game room, to play pool. Through the application of this
process many non-readers have become avid fans of the printed word.

The Center employs a teacher (but not a certified classroom
teacher) and a para-professional to work with classes of approxi-
mately ten students. Over $10,000 worth of books, learning machines,
exercise sheets, and related materials are available to the class.
A separate room contains the play center which is well equipped with
games and activities having high appeal for the age group.

---

[1]These ideas were received during a conversation with
Dr. Donald Tosti, Director, Dr. Lloyd Homme, Chief Research Psychologist,
and Barbara Salazar, Learning Center teacher, at the Westinghouse
Research Center, Albuquerque, New Mexico, November 1968.

Once the student has set a contract obligation expressing his
learning goals, he moves freely about the classroom. Discipline
problems are missing because the student is working to achieve a
goal he helped set. Once he has done so, he can move freely to the
play room. Indeed, the environment and atmosphere are quite unlike
the ordinary classroom!

Two aspects of this example require attention. First, a
great deal of planning both the organization and the materials of
study preceded the introduction of students to the process. The
behavioristic psychology of contingency management was carefully
defined and applied to the specific situation. This researcher
found the Center to be a well-designed, highly operational learning
environment. The second point is close to home. The Center's
director showed little willingness to discuss per pupil cost, and
only rarely has a public school operated under these conditions or
with such low student-teacher ratios. For these reasons, comparisons
between the Center and any school experience are exceedingly difficult.
Again, despite this prior planning, any student at the Center made a
positive decision to attend! he, or his parent, could also choose
not to attend. Such positive pre-choice is equally unavailable in
the public schools.

Why would an industry undertake such a project as the
design and operation of a learning center? In part this particular
center was motivated by the Corporation's research and development
interests. Despite these concerns the Company believed it could
offer a learning program to students presently failing public
schools, and it could do it at a profit. In this respect the
Corporation places itself in direct competition with the schools,
but it limits its educational concerns to carefully defined goals.

The success of this and related projects by various
industries has provoked the use of "performance contracting" by the
U.S. Office of Education. Under this arrangement, a contractor
agrees to achieve predetermined learning goals (e.g., raising a
student's reading level by two grades) within a specified length
of time and at a stated cost. Failure to achieve the goals within
the specified time results in a loss of payment. A contractor may
spend more or less than he charges in order to achieve the goals.
The first performance contract has been awarded to the Dorsett
Educational System Co., Norman, Oklahoma, through the Texarkana
School System, from funds provided by Title VIII, ESEA (dropout
prevention). Under the terms of the contract, "if the company can
raise the reading and mathematics level of students who need the
most help...by one full grade in 80 hours, it will receive

$100 per hour per student. If the job takes 105 hours or more,

payment is reduced to $60 per student."[1] Much criticism of this

plan has already been voiced, but as Lessinger states in Nation's

Schools:

> If schools are to be held accountable for results, a new
> approach to the basic mission of the schools is necessary.
> First, the focus must shift from teaching to learning.
> Second, a technology of instruction based on specific
> learning objectives will start to build. Finally, a
> rational relationship may be established between costs
> and benefits.[2]

Some Specific Educational Technologies

This section will discuss three of the technological areas

which have drawn industry and education into new relationships.

The emphasis in these discussions will be on the processes involved

and the relation of the gadgetry to these processes.[3]

---

[1]"Private Firms Win Performance Contract: If Students
Don't Learn, District Doesn't Pay," Phi Delta Kappan, November 1969,
p. 135, see also Leon M. Lessinger and Dwight H. Allen, "Performance
Proposals for Educational Funding: A New Approach to Federal
Resource Allocation," ibid., pp. 136-137.

[2]Leon M. Lessinger, "After Texarkana, What?" Nation's
Schools, 84 (December 1969), pp. 37-40; the RFP was published in
Educational Technology, August 1969, pp. 5-9.

[3]Robert Heinich, "Technology of Instruction: Impetus or
Impasse," in Planning for Effective Utilization of Technology in
Education, Edgar L. Morphet and David L. Jesser, eds., (Denver:
Designing Education for the Future, 1968), p. 81.

who, ultimately, may choose what to study, when and how long to study, how to receive information and assistance, and which factors determine, according to his individuality, success. The relation of the teacher to this process will be minimal insofar as the routine cognitive processes are concerned, but the implications for the development of human relations and creative interaction direct that the teacher's role will be an important one as the student's control of the routine elements increases.

Technology has replaced various teaching functions. -- The teacher's need to drill students can be virtually eliminated, at first slowly by workbooks (which need correcting) and then rapidly by teaching machines (which can choose the type and conditions of drill). To a large extent movies and television recordings can replace the teacher's "information presentation" function, and various devices can stimulate the question-answer procedure. With automatic test scoring, mark compilation, and attendance keeping, a large percentage of the teacher's traditional activities may be automated. This release of the teacher for productive, creative human activity seems to emerge as the significant contribution of technology to education.

climate control on learning appear to be only poorly explored at
this time. Once effective combinations of light,heat, and humidity
are established according to the variety of learning and the student's
individual requirements, the variable conditions could be created in
the school.

Another level of control provided by the new technology involves
the organization and presentation of stimulae in orders assumed
appropriate for specific learnings. Programmed texts achieved
breakthroughs in this area, and the new capabilities of the computer
to branch according to the needs of individual students suggests
that individualized instruction for every student may become
possible within the near future. The teacher would become the
selector of appropriate materials and the guide for the student's
development. The learning function is shared by the student and
the technological system.

Technology has increased control of the learning environment
by the student. -- Recent developments such as the programmed text
and the teaching machine, dial access, the computer, and response
systems give the individual student new opportunities to control
the rate, selection, and the direction of his learning. Branched
programming techniques and computer guidance and record keeping can
provide an individual program tailored for the particular student,

obviating of economic disadvantage). The advance of technology has
increased this aspect of the educational function, and the new
technologies have once again moved beyond the realm of the class-
room world.

Technology has increased control of the learning environment
by the teacher. -- Although it is suggested by item two that the
teacher is losing control through expansion, the technologies are
also increasing the deliberate variations achievable in the learning
environment. Such commonplace matters as adequate ventilation and
lighting (and instant changes in light and sound levels) should not
be underestimated. Schools can now create an ideal climate for each
activity. Shades are pulled and lights shut off for movies in one
room while noise is kept in and out by sound baffle walls. Students
switch the light on under the microscope, no longer crowding around
the window on a sunny day. Various arrangements of electronically
controlled apparatus have been designed to make available in the
individual classroom the resources of electronic storage and
reproduction, enlarged display of any image and instant copying of
materials needed in mass quantities. In a somewhat imaginative vein,
Buckminister Fuller's geodesic dome could make possible a school in
which climate is so well controlled that the tropics may be
simulated or the artic experienced directly. The implications of

When discussing technology, however, we are forced to consider how the advancing technology is affecting educational functions.

Implications of Advancing Technology

Technology aids the teacher in the performance of a specific function by extending the teacher's time and place.--Blackboards increased the time limits of a teacher's utterances, made visual display possible. Dial-access systems and television perform this same function. In short, one value of technology has been the increase in the range of a teacher's effect. A first use of the electronic technology was a natural development of greater ranges for the teacher's effect, but at a certain point the technology became a block to the immediate participation of the learner with the teacher. At this point, the technology is no longer assisting, but competing with, the teacher.

Technology has expanded the learning environment.--Access to sound and visual images, by either mechanical or electronic means has increased the number and the range of images and experiences which are available in the learning environment. In fact, the choices now available to teachers are so great that careful selection and adequate utilization are more serious pedagogical problems than the procurement of experience. (This statement assumes, of course, the

44

These shifts, from use to design, from machine to procedure,
from the casual to the basic, are causing the greatest problems
for proponents of technology. The implications of this discussion
seem clear. Technology has not permeated the 2 x 4 x 6 classroom,
nor the traditional system of education, to the degree required for
its acceptance as a viable part of the learning environment. As
McLuhan suggests, we are living in the linear, bookbound past, using
limited sensory resources, and deliberately confining our thoughts
about education to the schoolhouse. The first need for the new
technologies becomes a view of them as serious purveyors of infor-
mation and insight. The result may be a new view of education as a
human function, supported by a psychology which is appropriate for
image perception, and operative within an educational system that
evolved from this new view and this new psychology.

The early technological devices were designed to assist the
teacher in her tasks, but she was always in control of the educa-
tional process. These developments did not question the role or the
functions of the teachers, but as "total learning systems" are
designed, making it possible to replace the teacher entirely, the
place of the teacher in the system becomes the overriding problem.
Yet only a minimum of attention has been devoted to the restructuring
of the teacher's role in terms of changing organization of functions.

Two changes in technology must be recognized as they affect
the structure of education. First, technology has changed from
mechanical to electronic. Second, technology has changed from
non-systematic to systematic; that is, the effective interrelationship
of all the parts is critical to the operation of any of the parts
within the system. Previous technological advances, such as movie
projectors, radios, etc., could be incorporated into the available
on-going system. Not so the computer! This electronic, system
technology, at its inception and as a requirement of its appropriate
application, causes radical alterations of both ways of thinking
and acting.

Heinich discusses the nature of this technologic process as
it is presently perceived for education:

A fundamental principle of general technology shifts emphasis
from the use of a tool to the design of the tool. The
sophistication of technology is directly related to the
number of decisions that are made in the design stages, and
many modifications in design decisions made at the time of use
must be justified. However, education is now structured so
that emphasis is placed on use rather than on design.
Instructional management arrangements, professional training
and budgetary allocations are based on the assumption that
not enough instruction contingencies can be specified sufficiently
far ahead to make advance design possible . . . Instructional
technology, however, allows identification of these tasks
which can be taken care of by carefully designed mediated
instruction. Placing the focal point of instructional strategy
at the curriculum planning level moves us in the direction of
emphasizing design rather than use when mediated instruction
is assigned responsibility for specific student behaviors.

Technology makes possible the organization, storage, and
retrieval of information beyond the needs of the teacher-learner
situation. -- Especially significant for education is the profile of
the individual student which can be developed and the comparison
of this profile with innumerable (potentially) standardizable facts.
An educational program could be tailored to quite precise qualifica-
tions with this capability provided by the computer's storage and
access functions. Simulated factors may allow relatively accurate
selection of careers at any early age. Already, simulated futures
of individual students are indicating the desirability of various
alternatives at the elementary level. The guidance function will
be revolutionized by the memory power of the computer. The
implications for the teacher in this situation are severe. Decisions
formerly based on a low amount of specific information and a high
degree of personal insight will now require judgements based on
large amounts of information and a different kind of decision power.
The heuristic capabilities of the computer require exploration as
aids to the control of information in the pedagogical environment
and the selection of reasonable alternatives.

Technological systems can replace the teacher, and
accomplish training faster and more completely than the human system.--
Essentially, once a function can be objectified and reduced to

50

routine, it may be programmed for an appropriate technological

system. Many training programs have been appropriately subjected

to such analysis; so has much of what happens in the classroom.

The eventual replacement of the teacher might occur, however, only

if education is seen as totally objectifiable, a situation difficult

to imagine and clearly unpleasant to predict, but a critical need

for the profession will be to determine clearly what actions require

the unique capabilities of the human teacher.

Within the framework of these functions and given the resolution

of present uncertainties, technologies are viewed as holding promise

for the following kinds of advantages when properly implemented:

- Improved use of the nation's limited educational
  resources.

- Increase in student-teacher ratios without a lessening
  in the quality of education.

- Relief from the tedium which marks many traditional
  classroom patterns.

- Increased student involvement in the design and control
  of the learning situation, and increased active partici-
  pation in and responsibility for learning.

- Improvement in the dissemination of quality education,
  the updating of needed skills, and the provision of
  educational opportunities for populations of increasing
  size, variety, and dispersion.

It is clear, however, that technology will significantly

improve education only to the degree that its total impact has been

perceived and planned for. The effective design of technology

uses, however, appears to depend on an understanding of the role and

functions of teaching.

THE COMPUTER

A computer is simply a machine for storing data and for perform-

ing certain basic mathematical and logical operations on stored data.

Its chief advantages seem to be huge data storage capacities and

almost instantaneous calculations. Through the process called

"programming" computers can be "trained" to perform an amazing

array of tasks, including many related to education. Some special

programming "languages" now permit communicating with the computer

by using ordinary English, and this development has led to broad

instructional experimentation.

Computers have been applied to three areas of education:

administration (in general, the business and management functions of

the school), research (especially for data storage and statistical

calculation), and, instruction.[1] This last area is of particular

concern, and three classroom applications of the computer will be

mentioned.

---

[1]Educational uses of the computer are annotated and summarized
in Don O. Bushnell and Dwight D. Allen, The Computer in American
Education (New York: Wiley, 1967); Ralph W. Gerard, ed., Computers
and Education (New York: McGraw-Hill, 1967); and Andrew R. Molnar
and Beverly Sherman, U.S. Office of Education Support of Computer
Activities (Washington, D.C.: Government Printing Office FS 5.212.
12044 , 1969).

An _instructional management system_ involves the organizing
of pertinent information so a teacher's decisions can be based on
analyses of student behavior and learning needs. Since the computer
stores information, making it available to a teacher as needed, the
kinds and amounts of information teachers require for instructional
decisions have become critical questions. Where formerly, if the
teacher acted by hunch and intuition, it could have been because
information was either not available or could not be organized
fast enough. An effective instructional management system now
makes possible the design of teaching strategies based on complete
and rapidly available information about the learning situation. An
effectively implemented, computer-based, instructional management
system can provide the teacher with immediate results of student
performance. With this kind of "feedback" the teacher can adjust
her relationship to each student in terms of his prior performance
and learning needs.

A related technological advancement is called the _student
response system._[1] In a specially designed classroom each student is
equipped with five buttons. At the request of the teacher the student
can press one of these buttons to indicate an answer to a multiple

[1]E.L. Rivest, _Instrumentation Systems for Group Instruction_
(Schenectady, New York: General Electric R&D Center Rep No.
67-C-300 . July 1967).

choice question or a true or false question. The teacher's desk

is equipped with a display of lights which can indicate each

individual student response and/or the group's responses to each

question. Student response systems have been connected to computers

which record individual students' learning profiles and perform

statistical calculations. A student response system provides a

means for immediate feedback in the learning situation and for

immediate testing of student comprehension. A teacher, feeling

that his presentation is not being adequately received, may ask

simply "Do you understand me?" Each student could press a "yes"

or "no" button and the teacher, by reading the lights displayed

on her desk would know both which students understood or did not

understand and which percentage fit each category. In this way a

presentation can be modified almost instantaneously. The advantages

of using an electronic system seem to be twofold: First, the

system can preserve student anonymity so that only the teacher knows

how each student is answering. Second, the system provides for

the storing and measuring of responses. Cumulative student records

can be developed and adjustments in the learning environment can be

made as a result of actual experience.

The <u>drill and practice mode</u> has been the most successful

computer application to the instructional process. In this mode a

teacher presents the basic concepts and learnings, and each student performs a series of practice drills at the computer console. Programs have been developed for the teaching of basic arithmetic and basic reading skills. Computer terminals may be placed either in the classroom or at some other convenient location in the school. Most practice drills take about ten minutes.

The material for the drill and practice mode has been carefully organized and sequenced to meet the needs of each learner. When a student makes a mistake, he can be sequenced to an easier exercise or to practice with concepts which precede the present level. If he is successful in the initial exercise, he is sequenced to more difficult problems using the same concept and then to practice with new concepts. Unlike the traditional workbook each individual's needs can be met through many alternative drill and practice sequences.

At the end of each drill session the student receives a record of his achievement. Each student profile is stored by the computer and can be used by the teacher to adjust the learning environment. This computer mode implies a close relationship between the use of the computer for drill and practice and the use of the "live" teacher to present concepts and to develop principles. The functions assigned to the machine have been carefully related to effective roles for the teacher.[1]

---

[1]Richard C. Atkinson and Patrick Suppes, Program in Computer-Assisted Instruction. Final Report (Stanford, California: Stanford University, 1968 ERIC Document ED 026 893).

The development of simulations and games for education in the

grades has been wide-spread through the 1960's and represents an

extension of the war games and management simulations developed

earlier by industry and the military. Many games do not use

computers, but if many decisions are required or a large amount of

information must be organized the computer has been found useful.

Young children respond well to the computer mode of learning, which

consideration deserves attention. One popular computer game,

the Sumerian game, has been developed by the IBM Corporation. The

game

> is designed to teach sixth graders some principles of economics
> as they applied to the neolithic revolution in Mesopotamia
> during the fourth millennium B.C. After an introductory
> program tape and slide presentation the pupil seats himself
> at a computer terminal and assumes the role of the Luduga I,
> Priest King of Lagash in the year 3,500 B.C. The player
> is presented with a series of problematic situations and
> must indicate on the typewriter his decisions concerning
> such questions as how much grain to plant for that year,
> how much to save, and how much to feed the people. As the
> game progresses, the pupil is faced with problems of
> expanding populations, irrigation, foreign trade and other
> complex situations which confront a changing economy ...
> The objective of the game is to make decisions in such a
> way that the city-state survives a series of natural and
> political crises, that the population grows, and that a high
> rate of technological innovation is maintained ... Throughout
> the exercise the child makes decisions and enters his answers
> at the computer terminal. The computer immediately returns
> a progress report including the number of bushels of grain in
> the harvest reaped from the seed grain set aside for planting,
> a report on his inventory, crop losses from disaster, and
> the size of the population.[1]

---

[1]Elliot Carlson, Learning Through Games (Washington, D.C.·
Public Affairs Press, 1969, pp 151-159).

If the student plays the game successfully, Sumeria grows
and prospers. If he is not successful, the civilization starves!
Through playing the game the student learns some of the principles
of basic economics. Games of this nature have been enthusiastically
endorsed by many educators, but the difficulties in constructing
an effective game and the cost of computer time in relation to
other teaching techniques may limit their development and adoption.

EDUCATIONAL AND INSTRUCTIONAL TELEVISION

Perhaps the most widely used and most thoroughly researched
technology applied to education has been television. Projects using
television fall into two general classifications: Instructional
(ITV) and educational (ETV), but the difference is not always clear-
cut. Educational television refers to any television transmission
(either on regular television channels (open transmission) or through
a closed circuit television system (CCTV)) for the purpose of
bringing additional material to the classroom. This material may be
simply "enrichment" or it may be part of the basic subject matter
(e.g., a Shakespeare play) from which lessons are developed. Within
this broad framework much commercial television may be classified
as "educational." Since the "content" of the broadcast can include
both "live" and "canned" (film) segments, the television may be

seen as primarily a communications vehicle spanning time and space.
Educational Television appears to be useful because it solves com-
munications (but not necessarily learning) problems.

The _instructional_ application of television, however, is
more specific than the educational communications function. Tele-
vision is used for the direct support of subject-related instruction.
The classroom teacher is either supplemented or supplanted by instruc-
tional television. ITV has been found useful for ameliorating prob-
lems of teacher shortage (when not enough good teachers were
available for all the classrooms or for transmitting the efforts of
a unique expert teacher over a broad area). Applications of ITV
have varied from excellent to very poor. Chu and Schramm, studying
the reasons for variation in quality have reported two generaliza-
tions. First, "educational television works best when it is felt
to be needed--in answer to a recognized problem that cannot very
well be solved otherwise." Second, Television works best when it is
made a part of an integrated instructional package."[1] In other
words, simply adding television to the classroom as a gadget has
not been effective. As with all technologies, television works
when its use is carefully planned.

---

[1]Goodwin Chu and Wilbur Schramm, _Learning From Television:
What the Research Says_ U.S. Office of Education Report, presented
by Schramm at the DAVI Convention, March 1968. See also _Educational
Television: The Next Ten Years_ Bulletin 1964, No. 12, (OE-34036)
(Washington, D.C.: U.S. Office of Education (HEW), GOP, 1965).

One outstanding example of the effective planning and use
of instructional television may be found on American Samoa. Since
1961 the educational system of American Samoa has undergone a
virtual revolution in educational thinking and planning, especially
in the deliberate application of an advanced technology to the
solution of persistent and chronic educational problems. In all-
new consolidated schools, designed for television instruction, the
Samoan child views television from one-quarter of the school day
in the early grades to one half of the school day in high school.
Each classroom also has a native Samoan teacher who views the
television lessons with his students, manages the operation of the
classroom, and attends to individual needs in preparing for and fol-
lowing up the television lessons.

There are four essential elements in this system of educa-
tion, and each was designed specifically to relate to the others.
The production process, the television transmission system, the
lesson design,and the local school. The design of each element
evolved from a careful analysis of the nature of the Samoan child
and the education problems caused by peculiarities of language and
culture, and from a careful analysis of the inherent difficulties of
educational system, especially a critical shortage of qualified

teachers. The essential purpose for the system's design was to insure effective teacher-student communication for learning.

When the TV teacher appears on the television screen, the children greet him as a friend. They respond to questions and are genuinely involved in the lesson. This is not the passive viewing of entertainment or "enrichment" such as has been frequently observed in other uses of instructional television. The television is an active (and interactive) part of the child's learning process. It is this quality of the instructional television which is most difficult to explain and may remain only vaguely appreciated unless observed.

In Samoa, television functions in an appropriate way in relation to the total learning environment, and the children respond positively to two aspects of the broadcast. First, the television teacher talks directly to the child, say good morning, etc., and they respond by name to the teacher. This and similar devices insure a close rapport between the children and their television teachers. Second, the children respond to the quality of the instruction and the quality of the planned lesson. There is no question about the appreciation for quality in the instructional process on the part of even the youngest children. Although critics of the Samoan experiment have noted a lack of empirical data on

achievement and on the operation of the system, there are several
favorable elements obviously present. First, there is a well-run,
creative atmosphere developed by a dedicated, talented, and sincere
staff. Second, there is a strong sense of purpose and contribution
on the part of the staff, and there is excitement, attention, and
involvement on the part of the students. Third, there are still
signs among the faculty and in the schools of changes so radical
that adjustment to upgrading and improving is a continuing activity.
And fourth, the whole Samoan education system is based on a
deliberate plan which recognized major educational problems and
planned the use of a broad-scale technology to solve them.[1]

A recent development in educational television may have
profound effects, especially for the field of early childhood
education. Called <u>Sesame</u> <u>Street</u>, the series was produced by the
Children's Television Workshop (National Educational Television).
Two major forces underlay the development of this series. First,
the principles which led to television advertising that could
attract and hold the attention of even very young children were felt
to be applicable to instructional design. Second, television was
available to poverty populations since even most ghetto homes have

---

[1]Based on personal observation and discussions with Roy Cobb,
Director of Education, American Samoa, and members of his staff.

television. In this way, even very young children could receive
instruction in basic skills and concepts prior to entering the
public schools.

After its first months of broadcast, there are reports that
Sesame Street is proving itself successful for teaching the alphabet,
number sense, and other basic concepts to very young children.
This success deserves particular recognition since the program is
broadcast primarily on VHF channels over educational television
stations. These stations are not normally available to or used by
the populations for which Sesame Street was primarily intended. In
order to make information about the broadcasts common knowledge
a concerted advertising effort was undertaken. Many community
organizations and national associations contributed to this adver-
tising effort. Buttons were distributed in supermarkets and full-
page ads have appeared in many newspapers. Parents have been urged
to write for a free sample of a parent's guide to which they may
then subscribe at a nominal price. This advertising builds listener-
ship and encourages a relationship between the child's viewing and
the parent's responsibility for early education.

This use of broadcast television for instructional purposes
raises some important questions for the schools. If television can
reach early childhood (or other) populations, both in "the ghetto"

and in other environments, and if television can motivate children
to learn effectively prior to their entering the school, a strong
and viable technological system for education will have evolved.
This alternative to pre-school preparation may not only be more
cost effective than designing additional kindergarten or pre-kinder-
garten programs, but it has the distinct advantage of involving the
child's parent and home environment in the process of learning.
These conjectures require information on the effectiveness of
Sesame Street and other educational television broadcasts before they
can be accepted as planning principles. Nevertheless, these systems
represent potentially important areas for careful planning.

CLASSROOM USES OF TECHNOLOGY

Teachers have used various types of classroo   chi   gy for
years. Among the most common are movie projectors, tape recorders,
slide projectors, and overhead projectors. During the past ten
years teaching machines, language laboratories, telephone and
tele-lecture applications,and videotape recorders have been added
to this list. Some very recent developments include the talking
typewriter, two-way or "talk-back" television, an electronic
music keyboard,and microfilm and micro-fiche readers. These devices
are generally referred to as "classroom technology" because they can
be used in the "standard" school classroom, operated by a teacher

or a student, and applied to the on-going program of instruction.
A selection of these devices can be found in virtually every school
and applied to a wide variety of instructional and educational needs.

Research in the technology field has concentrated in three
areas: tests of the effectiveness of each technology as a teaching
device, tests of the superior effectiveness of one technology over
another (or over a live teacher), and tests of the reactions of
receivers to technological messages. The research has not been
generally applicable in useful ways to real learning situations in
the schools. Other research efforts and studies have dealt separately
with the support of each technology--physical facilities, light and
noise levels, seating and related concerns--in an attempt to improve
the conditions in which technologies are used. Some attention has
been devoted to administrative and management problems related to
technological implementation and use. A considerable and growing
body of literature explores the nature of learning processes and
interrelates technology, principles of learning, and the conceptual
organization of subject matter. Although a tremendous amount of
money and effort is being devoted to technological research, some-
thing seems to be missing. All of this research and development
has failed to result in any major change either in the use of tech-
nology within the schools or in the tasks of education.[1]

---

[1]Kent, Le Baron, and Peterson, op. cit.

The chief cause for these problems in the use of technology appears to stem from either a lack of perception or a lack of appreciation for the necessity to redesign total learning situations, or at least to begin with a clear statement of learning goals and the comprehension of the system presently working to achieve these goals. There appears to be a general lack of systematic and thorough planning in the application of technology to perceived problems of educational improvement. Technology can perform certain functions which are appropriate to their nature and which can support learning. They should not, however, replace or supplant a teacher performing these same functions unless the role of each is designed in relationship to the other.

Planning the use of classroom technology (and indeed planning the use of computers and television) might be improved through the consideration of some basic principles which may be stated as follows:

1. The effective use of technology will probably alter the nature of the institution--the school and classroom.

2. Technology should not be viewed casually; it implies the processes of technology applied to education.

3. Functional analyses of the teacher-learning process in the manner of "man-machine systems" will be required before effective decisions about the use of technology can be made.

4. The technologies should be selected and implemented in accordance with their contribution to the various

types of learning, some of which lend themselves
to mechanization more readily than others.

5.   The technologies serve, basically, two purposes in
     the instructional environment; they extend the
     range of available experiences, and they extend
     the teacher's (or learner's) control over the stimuli.

6.   The technologies also increase the potential _impact_
     of learning beyond that which may be acceptable
     within the school, i.e., it could be possible to
     smell war!

Most attempts at implementing multi-media and other tech-

nologies seem to remain short-ranged and minor thrusts on the

educational system. What is required, however, before any tech-

nologically supported program can be successful is an analysis of

the whole educational structure. The _problems_ are not problems of

technology; they are problems of _education_ for which some technologies

may offer viable solutions. The use of technology in education

will probably remain ineffective to the degree that the purposes,

goals, and processes of education remain vague or misunderstood.

THE EMERGENT EDUCATION-INDUSTRY RELATIONSHIP

T e preceding background should indicate that the area of

education-industry relationships is extremely complex, highly

volatile, and generally confused. Industry, and most individual

organizations within industry, are concerned with defining a role

for themselves and a relationship with the public schools. This

task has proved exceedingly difficult, and many organizations have
pursued costly false directions. One useful perspectus, however, is
provided by Locke's suggestion that there are four kinds of
"educational businesses": (1) generating, collecting, organizing,
and selling information; (2) creating and marketing systems of
instruction; (3) transmitting knowledge and information (com-
munications); and (4) marketing specialized services (consulting).[1]
Most members of the education-industry are concerned with one or
more of these functions.

Some writers on the subject are not so willing to accept
prima faci good intentions. Heddinger writes:

> So long as industry is anxious to stand with its tin cup at
> the federal dollar trough along with all of the other social
> and governmental agencies which have come to depend upon
> such federal assistance for their very existence, then w~
> in education are in real trouble because centralized con\ ..~
> of education is inevitable and industry's greater partici៲ ·៲.. ៲
> in education will only hasten that day.[2]

Heddinger offers no basis for this conclusion in his article, and so
far as this investigator can discover, his prediction has not been
borne out. A more reasonable summary of recent history is presented
by Vance:

---

[1] Robert W. Locke, "Education and Business: How Much of a
Partnership?" Business Education World, 48 (October 1967) 5-6.

[2] F.M. Heddinger, "Industry's Role in Education Defined,"
American School Boards Journal, 155 (September 167) p. 30.

Big business was attracted to education in a big way in 1966.
In the sovering years of 1967 and 1968 big business learned
that changes in education take time. In 1967 and 1968
educators, curriculum reformers and those instructional
materials producers who had been around for sometime (not
really very big business) became more aware of what they
really knew all along: dramatic change in education will
not occur until teachers and administrators have been
prepared for dramatic change.[1]

Saettler emphasizes this point of view and suggests a basic

weakness in the relationship:

While government and industry, for example, each determines,
in large part, its own research and development, education
remains almost wholly dependent on derived technologies
which, if applied, often conflict with educational goals
and purposes ... While there is nothing wrong with the
idea of private industry serving education as producers
of what education is not able to product itself, it can be
seen that the widespread use of instructional materials
and devices which educators had no hand in designing or
testing means that it is the commercial producers rather
than the educators who have much to do with determining
the curriculum.[2]

It is difficult to accept Saettler's premise that applied

technologies must conflict with educational goals, or that industry

produces materials educators have no hand in designing or testing.

---

[1]John F. Vance, "Role of the Instructional Materials Industry,"
Preparing Educators to Meet Emerging Needs Edgar L. Morphet and
David L. Jesser, eds., (Denver: Designing Education for the Future,
1969) p. 78.

[2]Paul Saettler, "Instructional Technology: Some Concerns
and Desiderta," AV Communication Review, 17 (Winter 1969) 357-361.
Saettler may object to these criticisms because he talks of open
systems in referring to educational processes which somehow will
achieve openness without causing changes in the contributing
institutions.

These statements effectively posit a virtual dichotomy between some-
thing called education and something called industry, education
being dominated by the stronger force. A second implication is
more subtle, yet more destructive than the first: that education
should be a self-sufficient, limited, and ultimately closed system--
requiring only carefully defined products from another system--is
absurd. Indeed, it is not only contrary to history, but it estab-
lishes a basis by which new forms of cooperation become exceedingly
difficult. If each institution--education or industry or both--
must be primarily concerned with self-identity and life space,
rather than the achievement of mutually accepted goals, then it
seems predictable that tension will accompany any effort at
cooperation. In this respect, Holton's position appears reasonable.

> The fundamental patterns for the relationship between industry
> and education is just now being invented. It has to be a
> partnership in a very complex consortium in which the teaching
> profession, the academic subject matter specialists, the
> industries, the regional laboratories, the financial granting
> agencies, and the schools of education--above all the last--
> have to be full and strong partners.[1]

None of these positions explains the direct and necessary
involvement between these two basic institutions of our society;
they simply imply varing degrees of cooperation, competition, or

------

[1]Gerald Holton, "The Education Industries: A Discussion,"
Harvard Educational Review, 37 (Winter 1967) 113.

defensiveness. But if education is viewed as a process (rather than

an institution) encompassing the whole of society, then some integral

relationship must exist between the schools and the industries,

and it must exist at the conceptual level. Komoski has clearly

perceived this relationship and calls the present era the "second

industrial-instructional revolution." He states,

> the interaction of industry and education in the United States
> has entered a new stage in which the earlier indirect and
> unconscious interplay of education and industry has been
> transformed into a closely-knit interdependency by the
> complex educational and social implications of the second
> industrial revolution.
>
>   Under these changing circumstances:
>
> A once vital local educational system frequently took the
> form of unadaptive conditioned responses rather than the
> form of adaptive responses to changing conditions. The
> results of this "tendency" is now clear: American indus-
> trial and social life has undergone a revolution since the
> development of the nineteenth-century factory-like school,
> while the school itself has undergone little more than a
> haphazard evolution. We should not, therefore, be surprised
> that one group of today's educational reformers are in
> revolt against "unresponsive," "mass produced," "industry-
> inspired," educational systems, while others advocate the
> use of "new industrial technology" to bring about a new
> "instructional revolution" characterized by "innovation,"
> individualization, "highly responsive," instructional
> systems. This latter group of reformers seems to be
> saying that the problem now facing American education is
> caused by the fact that leftover forms, practices, and
> techniques of this country's first (nineteenth century)
> industrial-instructional revolution are now in conflict
> with the newly emerging forms, practices, and technologies
> of what they see as a long overdue "second" industrial-
> instructional revolution, although none of them might put
> it so theoretically.

From this point of view, Komoski finds that

> If one grants that there is a fundamental conceptual relation-
> ship between _industry_, as the systematic ordering of man's
> thinking about production, and _instruction_, as the systematic
> ordering of his thoughts about how to transmit learning, then
> it would seem inevitable that in a highly industrialized
> society the organization of learning would be profoundly
> affected by industry.[1]

Komoski's comments are dealt with at length because they are pre-
cisely relevant to the nature of changing institutions in light of
changing technologies, and to the structural dilemma provoking the
explication of the education-industry planning consultant's role.

Educational technology has changed from _mechanical_ to
systematic, i.e., the effective interrelationship of _all_ parts is
critical to the operation of _any_ part within the system. Systematic
technologies require the reconceptualization (and frequent redesign)
of the entire system. Developing new and viable second generation
technological education systems will require radical structural
changes in the schools and new "interdependent" linkage among
industrial organizations, schools, and many other educational

---

P. Kenneth Komoski, "The Second Industrial-Instructional
Revolution," _Teachers College Record_, 71 (December 1969) 327 -338.
From another point of view J. Kirschner suggests that educators
interest in technique over the past two thirds of a century accounts
for a traditional interest in technology, but he warns against
the dehumanizing inherent in overemphasizing technique. ("Education
as Technology: Implications from the History of an Idea."
Teachers College Record, 70 (November 1968) 121 - 126.

institutions. But we are faced with a dilemma: if the application of technology to education means the achieving of important educational goals, and this application means changing the structure of public education, then to what degree, based on what values, should the present structure be protected or the power of the technology released, when the two are in conflict? This problem is at the heart of the industry-education relationship, because the technological solutions developed by industry are forcing education to defend its values in terms of its <u>achievements</u>, not its institutional <u>structures</u>.

<u>IMPLICATIONS FOR THE FUTURE OF</u>

<u>INDUSTRY-EDUCATION RELATIONSHIPS</u>

The development of interdependent relationships among the many partners in the educational process remains exceedingly difficult. This direction, however, appears preferable to forms of cooperation or conflict which imply rigid instructional definition and maintenance. Since the entire field of education (i.e., as a process within a society) is being scrutinized as a result of technological change, some implications can be suggested.

The first implication is that the public schools will not be affected by these changes, in which case they will continue to be

considered obsolete and largely ineffective at dealing with change.
No one would suggest this stance, but the vast technological and
social changes during the past ten years--and the industry-education
relationship is one--means that accepting change is inevitable.
Any group which ignores this encounter will be passed by! With
this thought in mind, the following areas require attention:

An Emphasis on Planning

Large-scale interdependent technological systems require an
emphasis on _planning_ rather than on _operation_. Since all of the
parts must be integrated and since all function together, no part
can be designed or operated without a clear knowledge of the whole
system. This basic aspect of technology is beginning to find
acceptance in the field of education. This challenge will be met
by conceptualizing the total redesign of alternative programs to
meet educational needs. The next chapter will deal with these areas.

New Teaching and Support Roles

It is now commonplace to speak of such "support team"
members as audio-visual aides, educational technologists, test and
measurement specialists, and curriculum planners, but many new roles
will emerge from the technological interdependence. Some functions
will remain in the schools, but many--some quite closely related to
instruction--may be located in R&D centers or industries. These

73

changes may represent the greatest threat to teachers. The education profession now must broaden itself to accept many new types of educational personnel, including many who may never work directly with children: computer programmers, learning system engineers, electronic engineers, specialists in accoustics and lighting, behavioral psychologists, evaluation specialists, and planning generalists. Integrating this tremendous number of roles and the institutions which house the practictioners of these roles becomes a significant problem for the use of new technologies.

Funding and Control

The implementation of technological systems requires new thinking about the use of educational funds and the control of the education process. Carefully designed technological systems are expensive, both to plan and to implement. They have very high "start-up" costs, but once they are implemented they usually achieve lower operational costs than the system they replace. Since a broad-based technological system, such as a computer-assisted instruction or an instructional educational network, can operate over a considerably larger area than one school district, new patterns for planning and control will require exploration. New concepts of funding (and here primarily the political task of training the public to accept them) and new forms of cooperative interaction among districts seem required.

80

COMPETITIVE STRUCTURES

There is a clear trend for the development of competitive
structures to deal with educational tasks previously assigned
exclusively to the schools. The negative reaction to this develop-
ment usually states that industry will profit from the achievement
of children based on predetermined and limited behavioral profiles.
The positive aspect may be emphasized if the word competition
is changed to alternative. The public schools clearly have not
presented a broad spectrum of alternatives for the education of
young children. Since the generating of alternatives is basic to
systematic planning and technological improvement, this environment
is healthy because new patterns of effective education may result
from this increasing attention.

A BASIS FOR THE CONSULTANT ROLE

Important implications from this chapter concern the struc-
ture of a consultant role and the organizations and processes of
this interaction. The tasks suggested for the consultant emerge
as those of integrating the functions of education and industry,
implementing appropriate planning procedures and techniques, and
linking the diverse elements in the developing relationships among
partners in the educational enterprise. It is important to
emphasize that this role responds to the conditions brought about

by Komoski's "second technological revolution," and, therefore, it indicates a new direction in educational communication and planning. While the next chapter will deal with the processes of planning which will form a basis for the consultant's knowledge and actions, this chapter has sought to provide a formal structure in which the consultant role would find itself embedded.

CHAPTER III

THE PROCESS AND ORGANIZATION OF PLANNING

<u>INTRODUCTION</u>

This chapter will attempt the development of a schema for
understanding the processes and the organization of planning. The
chapter will for   background to defining the role of the educational
planner and the role of the education-industry planning consultant.
The chapter will first attempt to define educational planning and
to distinguish planning from management and evaluation. Several
levels of planning and the major characteristics of the planning
process will be explicated. This discussion is followed by an
enumeration of some purposes and theoretical bases for planning,
which lead to the presentation of an integrated planning model.
The chapter then concerns itself with the organization of the plan-
ning process at various governmental levels. The structure of an
effective planning group, including the functions and skills
required by such an activity, are discussed as they relate to the
role of the planner. The implications of this discussion for the
design of a consultant role are then developed.

76

Only inadequate attention has been devoted to the areas of

the planning process in education. Indeed, as Ozbekhan suggests,

> Planning is too new and raw a discipline, or art, or
> science, to require us to indulge in a lengthy exegesis
> to establish the working hypothesis that we need. Tenta-
> tive ideas of a description character can be derived from
> observation and sustained by tying them to the main, the
> salient elements that make up the context of planning
> activities.[1]

But if the planning activity is new, its importance cannot be under-

estimated. Chase suggests that:

> It is possible that the most significant development in
> education during the next decade will be the emergence
> and wide spread adoption of new concepts and new technolo-
> gies of planning. Rapidly expanding theoretical knowledge
> and constantly refined techrological instrumentalities
> make status in almost every field today a fleeting con-
> dition. This is not yet characteristic of education where
> institutional inertia, popular fears and political caution
> retard the application of advanced knowledge and techniques.
> Yet the scent of change is in the educational air and many
> have sniffed it and found it exhilerating, if not
> intoxicating.[2]

Lecht emphasizes that:

> The extent to which we are likely to implement our educa-
> tional priorities depends on how rapidly the economy grows
> and on the competing claims for resources arising from the

---

[1]Hasan Ozbekhan, "Toward a General Theory of Planning,"
Perspectives of Planning, Erich Jantsch, ed., (Paris: Organization
for Economic Corperation and Development, 1969), p. 52.

[2]Francis P. Chase, "Tne Status of Educational Planning in the
United States," Education Planning in the United States,
Stanley Elam and Gordon I. Swanson, eu.., Second Symposium on Educa-
tional Requirements for the 197''s, An Interdisciplinary Approach,
Phi Delta Kappa, Commission on Zducation (Itsaca, Illinois:
F. E. Peacock, 1969), p.41.

> pursuit of other goals ... From this viewpoint the task of
> policy, and essentially of politics, is to reconcile these
> claims, and to keep a multitude of competing claims within
> the constraints set by the availability of the anticipated
> resources.[1]

The means for selecting among competing claims within the pattern of

constraints is found through the process called planning.

SOURCES OF A DEFINITION FOR EDUCATIONAL PLANNING

It may be safely stated that there is no clear-cut field

called "educational planning." At the same time one is forced to

recognize several sub-areas which may contribute to the definition

of such a field. Among these are national-level planning for

underdeveloped countries, extensive efforts under ESEA Title V of

the Elementary and Secondary Education Act.[2] Culbertson indicates

that there are at least three different but somewhat interrelated

planning traditions which have implications for educational plan-

ners. These include, "economic forecasts of educational needs

and plans to advance economic and social development in developing

---

[1]Leonard A. Lecht, "Strategic Variables in Planning,"
Planning and Effecting Needed Changes in Education, Edgar L. Morphet
and Charles O. Ryan, eds., (Denver, Colorado: Designing Education
for the Future: An Eight State Project, June 1967), p. 9.

[2]See, for instance, The State of State Departments of
Education, The Fourth Annual Report of the Advisory Council on
State Departments of Education. (Washington, D.C.: U.S. Office of
Education OE 2:050-69), 1969.

nations, second, and array of planning techniques found in the
technology associated with operations research, and third, PPBS—
an outgrowth of operations research."[1] The field of corporate
planning, especially as it relates to long-range planning, repre-
sents a relatively recent contribution to this field. Worth-
while treatise recently published in the business management field
emphasizes the new interest being directed to long-range and
comprehensive planning. These texts draw extensively on the base
disciplines of economics, political science, and the general area
of behavioral sciences.[2]

Two other sources of a definition should be included. The
first is the tradition of operations research and systems engineering;
the second is the tradition of systems design and planning. These
fields overlap and interlink depending on purposes and needs (and
on the authors who explicate them). Together they represent the
application of technological _process_ to defining and solving social
problems. An important resource on this emerging trend of system-
atic social design is Boguslaw's volume, The New Utopians.[3]

---

[1] Jack Culbertson, "State Planning in Education, in _Planning
and Effecting Needed Changes in Education_, op. cit., pp. 271-272.

[2] An excellent review is provided by Robert J. Mockler,
"Theory and Practice of Planning," Harvard Business Review, 48
(March-April 1970) 148-159.

[3] Robert Boguslaw, The New Utopians: A Study of System
Design and Social Change (Englewood Cliffs; New Jersey; Prentice-
Hall, 1965).

Boguslaw traces planning from the early utopians through the
economists and the mechanists to the present work of system analysts.
The volume emphasizes the important contributions of early plan-
ners but warns against the over-optimism of the new, computer-
oriented utopians who seem bent on mass societal transformation.

Each of these sources can contribute to a definition of
planning. It remains, however, for educators to undertake the hard
task of synthesis and the development of a useful statement of
planning process and organization.

A DEFINITION OF EDUCATIONAL PLANNING

Virtually every author concerned with the field has attempted
at least one definition of planning. It may be useful to look at
some of these definitions. Ozbekhan suggests that "planning is
thinking about what is not; about what may never be; it is imagin-
ing and speculating. It is on all these and many more scores,
divorced from a reality in which, as all hard-headed 'practical'
people know and go around saying, is made up of facts--present facts."[1]

Ackoff concurs that "planning is the design of a desired
future and of effective ways of bringing it about." He continues
by suggesting that planning is a decision-making process but

_____

[1]Ozbehkan, op. cit., p. 70.

cautions that not all management decisions are planning decisions.

He finds that planning decisions have these characteristics:

1. "Planning is something we do in advance of taking
    action; that is, it is anticipatory decision-
    making.

2. "Planning is required when the future state that
    we desire involves a set of interdependent decisions;
    that is, a system of decisions. (The principal
    complexity in planning derives from the inter-
    relatedness of the decisions rather than from the
    decisions themselves).

3. "Planning is a process that is directed toward
    producing one or more future states which are
    desired and which are not expected to occur
    unless something is done."[1]

Anderson and Bowman derive a definition of educational

planning as follows:

Planning is the process of preparing a set of decisions of
action in the future. The search is for the best alternative
that can be identified or discovered with a reasonable output
of time and effort in search and comparison, but this will
never be the best in any absolute, truly optimal sense. In
practice planners' decisions come closer to the notion of
"satisfying" than of optimizing behavior.... Educational
planning is the "process of preparing a set of decisions
for future action pertaining to education.... The essence of
educational planning is the scheduling of coordinated streams
of students and of teacher trainees for shorter or longer
distances in various channels of training and schooling.[2]

---

[1]Russell L. Ackoff, A Concept of Corporate Planning
(New York: Wiley Interscience 1970), pp. 2-3.

[2]C. Arnold Anderson and Mary Jean Bowman, "Theoretical
Considerations in Educational Planning," Educational Planning,
Don Adams, ed., (Syracuse, New York: Syracuse University Press
Center for Development Education , 1964), p. 10ff.

Morphet appears more realistic than these earlier writers.
He suggests that:

> Planning is not a process of speculating on probable develop-
> ments and preparing a theoretical blueprint for meeting needs.
> Rather, it is a process of attempting to determine appropriate
> goals and objectives, obtaining and analyzing pertinent inform-
> ation that will bring into focus present and emergent problems
> and needs, and obtaining agreement on steps and procedures
> that are designed to meet these needs so that objectives can
> be obtained.[1]

For the purposes of this chapter, the following definition
of planning appears useful:

> Planning is the process for the generating of alternative
> futures, the selecting of appropriate futures from these
> alternatives, and the relating of these futures to the on-
> going system. Planning requires evaluation of past actions,
> models of desirable future actions, insights about the
> dynamics of the future, knowledge and assumptions about
> resources, statements of desirable and possible aims and
> goals, and the determination of productive relationships
> among these factors.

Anthony suggests that planning is "roughly, deciding what
to do," (and distinghishes it from control, "roughly, assuring that
desired results are obtained."[2] In this respect Ozbekhan's comment
is pertinent:

> Planning is _sui generis_, a human social activity which is

---

[1]Edgar L. Morphet, _Planning and Effecting Needed Changed in
Education_, op. cit., p. xiii.

[2]Robert N. Anthony, _Planning and Control Systems: A Framework
for Analysis_ (Boston; Graduate School of Business Administration,
Harvard University, 1965), p. 10 .

designed to act <u>on</u> the environment <u>for</u> the purpose of changing
it in such a way that tendencies toward coherence and cohesion
are enhanced and tendencies toward disintegration and dis-
solution are kept under check. In other words, planning is
a process whose function is to reduce entropy and increase
organization within the environment.

A definition of educational planning may be suggested
by simply limiting the focus of comprehensive planning to educa-
tion. While education.1 planning takes place within carefully
defined institutional boundaries, its purpose is to adjust behavior
towards the achievement of recognized educational goals.

Distinctions Between Planning and:

<u>Management.</u> -- In order to adequately define the planning
process it is necessary to distinguish planning from a number of
related processes. As was indicated earlier, some authors tend
to see planning as part of the general process called "management."
Other writers, however, distinguish between planning as a process,
especially long-range and normative planning, and management.
Planning differs from management in its decision-making process.
The planner is essentially a staff member who makes recommendations
to the policy-maker. As Duncan suggests, "The planner is one
who poses alternatives; he is not a final decision-maker. As such

---

[1]Ozbekhan, <u>op</u>. <u>cit</u>., p. 111.

he influences decisions, to be sure, but he does this through the

careful appraisal of the possible alternat've course of action."[1]

Management, however, describes the decision-making process within

the organization. Management resembles the political process,

both of which involve consensus and setting a course of action.

Planning is viewed as distinct from these processes, but related

to them, because it provides both alternative goal structures,

and methods of achieving them.

Evaluation and Research.--The planning process should also

be distinguished from the evaluation and research functions.

> Evaluation in education signifies describing something in
> terms of selected attributes, and judging the degree of
> acceptability of 'suitability' of that which has been
> described ... the process involves three distince aspects:
> (A) selecting the attributes that are important for judging
> the worth of the specimen to be evaluated, (b) developing
> and applying procedures that will describe these attributes
> truly and accurately, and (c) synthesizing the evidence
> yielded by these procedures into a final judgement of worth.[2]

The key word is _judgement_, which implies a pre-determined

baseline, since evaluation cannot take place unless goals have been

selected and established. In this respect, evaluation is a meaningful

---

[1]Merlin G. Duncan, "Planning and Politics," Paper presented
at the National Conference on Educational Planning, Mankato State
College, Mankato, Minnesota, October 7-25, 1968, p. 46.

[2]_Encyclopedia of Educational Research_. Chester W. Harris, ed.,
(New York: Macmillian, Third Edition, 1960), p. 482.

concept only within a closed system. Planning, on the other hand,

can operate within an open system. Both may be contrasted with

Research which is seen as the comparison of describable worlds

(or the significant variables within describable worlds) for the

purpose of determining the efficacy of differing variable mix.

Research differs from evaluation. A research conclusion reflects

a measurable change attributable to variation within a fixed (or

constant) world. Evaluation judges causes, effects, and processes

based on a recognition of significant factors but on less than

complete control of the world. Both, however, can reflect change

only against a pre-determined measure of significance or statement

of goals, and this remains the task of planning. Eide indicates

that, "From the policy-makers point of view planning provides

the raw material for decisions in terms of clearly formulated

priority choices and alternative lines of action, their implications

worked out and explicitly stated."[1] He makes the following

distinctions:

> Decision making might be defined as the fixing of values of
> output variables. Programming might be defined as estimating
> the values of input variables when the values of output
> variables are given. Implementation might be defined as
> the checking of whether values of coefficients describing
> structural co-variance correspond to expectations. Research

---

[1]Kjell Eide, "The Planning Process," Educational Planning
in the United States, op. cit., p. 80.

might be defined as the systematic study of structural
coefficients within the model, including the developing of
theories about the determinents of such coefficients. Fore-
casting might be defined as estimating the values of output
variables, when the values of input variables are given
(reversing the programming process). Planning might be
defined as operations with a model in which, a priori, neither
input nor output variables are given.[1]

Levels of Planning

The literature on corporate planning usually distinguishes

three levels of planning and control. These have been called by

Anthony strategic planning, management control, and operational

control. The term management control might be replaced by manage-

ment planning; thus, there is established a control (evaluation)

function and a planning function on the mission level. Operational

control deals with a specific operation of a program or organiza-

tion and is not of concern in the context of this paper because it

is clearly a management function.

Strategic planning, according to Anthony, includes "choosing

objectives and (?) planning how to achieve these objectives....In

strategic planning, the task is much less one of making an optional

choice than it is one of being imaginative and systematic in formu-

lating alternatives from which the choice will be made."[2]

---

[1]Ibid., pp. 78-79.

[2]Anthony, op. cit., p. 26 ff.

Strategic planning is related to the concept of long-range compre-

hensive planning. It precedes the organization of the institution

(in the case of education, the schools) and seeks to define a

system based on viable and major processes. As O'Toole suggests,

"What is required is an analysis of the whole educational struc-

ture before the fact. The system needs to be studied comprehen-

sively and all the parts of the total process fitted together in

a meaningful whole."[1] This statement clearly indicates the task

of strategic, or long-range, planning.

Anthony defines management control as follows:

> Management control is a process carried on within guidelines
> established by strategic planning....The management control
> process is intended to make possible the achievement of
> planned objectives as effectively and efficiently as possible
> within these givens. The management control process involves
> making decisions about what to do in the future, and this is
> planning in the ordinary means of the term. But the planning
> decisions made in the management control process are of a
> somewhat different character from those made in the strategic
> planning process.[2]

He goes on to suggest these relationships between strategic

planning and management control:

> Strategic planning is the process of deciding on objectives
> and policies. It has to do with major decisions with long-term

---

[1]John F. O'Toole, Systems Analysis and Decision-Making in Education (Santa Monica, California: System Development Corporation SP2020 June 1965), p. 12.

[2]Anthony, op. cit., p. 26 ff.

consequences. Management control has to do with the on-going operation of the enterprise, within the guidelines established by these policies ...Unless the distinctions are understood, mistakes will be made in (1) stating generalizations as if they were applicable to both processes, (2) applying to one process a generalization that is valid only for the other, (3) or giving too much emphasis to one process and not enough to the other.[1]

The essential distinctions in the activities, strategic planning and management planning , which are significant for this paper, include the following:

1. The nature (and source) of the information required for each activity.

2. The external (strategic) as opposed to internal (management) viewpoint from which the same or related activities are considered.

3. Strategic planning relates to the whole of the organization (integration is, in fact, an aim), but management planning picks and chooses among parts of the organization.

This section has delineated carefully some distinctions in types of planning. It is important to recognize major difference between long-range, comprehensive (or strategic) planning and management planning (or control) as an activity related to the operation of the on-going system.

---

[1]Ibid., p. 62.

Characteristics of Planning

Having distinguished long-range, comprehensive planning

from the planning function of management, it is worthwhile to note

some of the salient characteristics of this activity. Ozebkhan

indicates that the fundamental characteristic of the planning

process is that it is

> conscious and rational, and that it represents acting on
> some object, defined as environment. Such action is
> undertaken for the purpose of effecting changes in the
> environment. Planning, therefore, can be said to include
> the following: (1) Perception of the environment;
> (2) Definition of the purpose of the changes one wishes
> to effect in the environment; (3) and design of the acts
> whereby the environment will be altered.[1]

Brooks suggests that in discussing the planning process it

is necessary to emphasize that "planning is a process, not a

product; (2) comprehensive planning is not synonymous with a

comprehensive plan; (3) and, the strongest impetus to effective

educational planning is the commitment of the educational leader-

ship to the necessity for the function.[2] Rackley and Carroll feel

that "education planning should be directed toward meeting clearly

---

[1]Ozbekhan, op. cit., p. 152.

[2]Richard D. Brooks, Comprehensive Planning in State Educational Agencies (Madison: Wisconsin Department of Public Instruction, 1968), p. 10.

defined and generally accepted goals."[1] Determining and defining

goals is an important aspect of long-range comprehensive educational

planning. In this respect Coombs suggests that there are three

new dimensions in educational planning: its comprehensiveness of

coverage, its much longer time perspective, and its more conscious

and detailed integration with national and social development.[2]

He cautions that educational planning of this new variety must be

concerned not simply with expanding the old system but also with

changing it.[3]

Coombs leads us to acknowledge this clear distinction between

the traditional planning which was limited in its scope and closely

related to management planning and the new long-range, comprehensive

planning which is emerging in many fields today. Ways has indicated

six characteristics which typify this newer approach to planning:

> 1. A more open and deliberate attention to the selection
>   of ends toward which planned action is directed.

---

[1]J.R. Rackley and Donald M. Carroll Jr., "Supplementary
Statement," to Jack Culbertson, "State Planning in Education."
Planning and Effecting Needed Changes in Education, op. cit., p. 290.

[2]Philip H. Coombs, "What Do We Still Need to Know?" The
World Yearbook of Education, 1967; Educational Planning,
George Z.F. Bereday, Joseph A. Lauwerys, and Mark Blaug, eds.,
(London: Evans Brothers, 1967), p. 60.

[3]ibid.

2. A more systematic advanced comparison of means
    by criteria derived from the ends selected.

3. A more candid and effective assessment of results
    usually including a system of keeping track of
    progress toward interim goals.

4. An effort, often intellectually strenuous, to
    mobilize science and other specialized knowledge into
    a flexible framework of information and decision.

5. An emphasis on information, prediction, and
    persuasion rather than on coercive or authoritarian
    power.

6. An increased capability of predicting the combined
    effect of several kinds of simultaneous actions on
    one another ....[1]

Hall helps to distinguish the characteristics of modern

planning by listing its values and its limitations:

1. Planning makes it easier to achieve integrated
    and purposeful action.

2. Planning anticipates troubles and avoids delays.

3. Planning provides the logical basis for coordination
    and control of both systems engineering and
    development.

4. Planning helps to achieve economy of executive
    systems engineering and development effort.

5. Planning facilitates other management functions.

6. Planning encourages the development of some goals
    because it normally emphasizes the importance of
    decisions related to goals.

Max Ways, "The Road to 1977," Fortune, January 1967, p. 93ff.

Hall also noted that planning faces these limitations:

1. Planning takes time.

2. Planning is expensive, not only in time, but also in money, professional technical people, and physical laboratory resources.

3. Design and use of plans tends to make the organization inflexible.

4. Plans are based on assumptions and forecasts of future conditions, so planning is limited by the extent to which these conditions can be forecast reliably.

5. The design of short-and long-range standing plans is limited by a lack of recurring problems.

6. Planning is limited by its undesirable effects upon individuals.[1]

In summary, the long-range comprehensive planning which functions as the basis for this paper, has these characteristics: (1) it emphasizes a process which states goals and relates resources to achieving these goals; (2) the plan which results from this process is subject to constant change and modification; (3) the planning process precedes the management process and is separate from it.

The Recent Emphasis on Planning

This emphasis on long-range, comprehensive educational planning is a relatively recent phenomenon, having received

Arthur D. Hall, A Methodology for Systems Engineering (Princeton, New Jersey: Van Nostrand, 1962), pp. 78-80.

significant attention only during the last five years. Culbertson

feels that this trend has been influenced by:

> The increasing value being placed upon quality education and
> the impact upon citizens, and their leaders of the increasingly
> large investments to achieve quality; the trend towards the
> use of more systematic planning in state and federal govern-
> ment generally; the large planning capacity of the business
> community and its growing involvement in education; and the
> increasingly wide array of tested planning techniques which
> are now available for use.[1]

For Coombs, the emphasis on increased educational planning is caused

by "the sharp increase in popular aspirations for education; the

acute scarcity of resources; the inherent inertia of educational

systems which has caused them to respond too sluggishly in adopting

their internal affairs to new external necessities; and the inertia

of societies themselves."[2] The increasing emphasis on educational

planning indicates a response to pressures for the adoption of new

technologies and the effective use of limited resources.

Eide sees the trend towards planning stemming from:

> the rapid development in recent decades of science--and the
> social sciences in particular....Planning may be regarded as a
> systematic application of research to problems of policy,
> constituting the main link between research and policy-making.
> Only when research has reached a stage of basic knowledge
> and theoretical linking together of different traditional
> academic disciplines, permitting broad applications of its
> research findings to the solution of practical problems--

---

[1]Culbertson, op. cit., p. 208.

[2]Philip H. Coombs, The World Educational Crisis: A Systems
Analysis (New York, Oxford, 1968), p. 4.

only then the stage was set for a significant development of
planning. The role of planning in adapting research findings
to policy problems applies both when aiming at policy change
as well as consistency control. Although the growth
of the social sciences cannot be said to have directly caused
the recent demand for planning, it has made the development
of planning possible by providing the planner with the
main instruments for his work. And planning has proved to be
an effective way of bringing the vast resources of research
to bear upon government policy-making and administration.[1]

Priorities and Resource Allocation Planning. -- This type of
planning is essentially economic. It is concerned with establishing
priorities within an educational system for the tasks which need
to be accomplished and then assigning resources to the achievement
of the tasks. Within the educational system Sanders acknowledges
the following resources:

1. The presence of pupils for established times.

2. Services of teachers.

3. The specifiable fixed facilities.

4. The specifiable learning equipment.

5. The services of n-instructional personnel.

6. The uses of specifiable fixed facilities for non-
    instructional purposes.

7. The use of non-instructional equipment.[2]

---

1 ibid., p. 32.

2Donald P. Sanders, "Toward a Theory of Educational Develop-
ment," Comparative Education Review, XIII (October 1969) p 276 ff.

McCusker and Sorenson suggest that a resource combination

> that yields the most favorable overall relationship of
> benefits to cost ...will be one that allocates more than the
> usual amount of funds to the acquisition and servicing of
> instructional materials, and provides a cadre of specialized
> instructional assistance to the professional staff.[1]

They suggest further that an allocation of resources based on the

evaluation of the system's performance may in fact change the

present use of resources. It is important, however, that:

(1) "the possibility of alternative allocations be recognized, and

(2) that the alternatives be compared systematically with one

another so that the selection of the most promising arrangement

can be made analytically and rationally."[2]

Love and Kyle have analyzed school systems in terms of the

investments which may be made in these school systems. Since

their work was primarily devoted to improving education in under-

developed countries, they see a necessity for the nation to

invest capital in these aspects of the total educational system:

(1) teacher training; (2) students (tuition and related school

costs); (3) buildings; (4) other facilities; (5) teaching methods

(for improved use of extant teaching staff); (6) program materials

---

[1]Henry F. McCusker Jr., and Philip H. Sorensen, "The
Economics of Education," The New Media and Education: Their Impact
on Society, Peter H. Rossi and Bruce J. Biddle, eds., (Garden City:
Doubleday Anchor Books, A604 1966), p. 224.

[2]ibid.

(in support of the teaching staff or to conserve the teaching staff); and (7) technological teaching aids.[1]

Priorities and resource-allocation planning offers alternatives for the use of scarce resources. Determining which alternative mix is effective for a given school system depends on the goals of the system, the resources available to it, and the relation of the use of these resources to other programs. Alternative resource allocation planning is usually achieved at the national level, and these techniques are only rarely applied in a local school district.

Human Resource Development Planning. -- Human resource development planning incorporates on a national level the fields of manpower planning, development planning, health and welfare (general social) planning, and educational planning. This area is generally only poorly defined. Davis points out that "no general model or set of models which describes, explains, or predicts how a society develops its human resources by educating and training its members" has yet been developed.[2] Nevertheless, this kind of

---

[1] Roy E. Lave Jr., and Donald W. Kyle, "Application of Systems Analysis to Educational Planning," Comparative Education Review, XXII (February 1968) pp 39-56.

[2] Russell C. Davis, Planning Human Resource Develop: Educational Models and Schemata (Chicago: Rand McNally, 1966) p. 276.

human resource planning requires considerable attention. The OECD

has sponsored a number of studies in developing and underdeveloped

nations following in general the human resource development approach.

Two basic steps in this planning methodology are now evident:

1. On the basis of a development plan or a systematic
   assessment of future levels of economic activity
   where no plan existed, production targets were
   established for the economic sector.

2. These occupational targets were converted into
   educational qualifications to yield an indication
   of total employment distributed by levels and types
   of educational achievement.[1]

Chirikos and Wheeler conclude that "if a nation is interested

in planning improvements in the quality of its labor force, th

almost exclusive use of manpower criteria for designing educational

policy and even other programs such as health seems to be unavoid-

able."[2] On the other hand, Davis argues with equal eloquence that

education cannot be planned in a one-to-one correspondence
to work force requirements. The relationship between educa-
tion and production is to indirect: Education may increase
production, lower it, or be irrelevant to it; and education
does more than merely enhance a man's productive behavior.
Educational planning in terms of work force requirements
provides some minimal estimates which are useful for planning,
but work force requirements can never control all educational
target setting."[3]

---

[1]Thomas N. Chirikos and A.C.R. Wheeler, "Concepts and Techniques of Educational Planning," Review of Educational Research,
XXXVIII (June 1968) pp 264-275.

[2]ibid., p. 276.

[3]Davis. op. cit., p. 22.

It appears, therefore, that human resource development planning has

been most useful in underdeveloped nations. Only inadequate

attention has been paid to this methodology in the United States,

primarily because of the multiplicity of educational goals assigned

to the system of public schools.

Applications of Technology to Education.-- Carpenter has

provided the most thorough analysis of the requirments for

appropriate planning of the applications of technology to education.

He enumerates seven practical guidelines based on an approach of

"fitting the general systems models to known examples of technological

introductions:

1. The introduction of significant changes in a component
    part of a system leads to many kinds and degrees
    of changes in the entire system; significant
    components do not change independenly of the whole
    system.

2. Semiclosed systems are very selective for kinds and
    amounts of influence or forces which have potentials
    whether actual, sensed or perceived -- for effecting
    changes in the system. The selection processes
    have many forms of expression: accepting and
    integrating new developments, accepting and isolating
    them, and rejecting them partially or entirely.
    Innovations require changes also in these selection
    mechanisms.

3. Regulations of the ratio of the amount of new energy
    or the amount of change influence relative to the
    total size of the system---the "critical mass"
    factor--importantly affects the character of
    successive change states. The rates of input and
    the assimilation of that which is new relative to

the total size affects the stability of the
system...

4. Small peripheral "inputs" which act over short
    periods of time and in subordinate parts of a
    system are not likely to produce significant
    restructuring of the system or to modify its
    directionality and rate of accomplishment pro-
    ducitvity. The "inputs" which are perceived
    to be too different or non-congruent with the
    established operating system are most likely
    to be rejected.

5. Accepted innovations that are significant require
    redefinitions of patterns of responsibilities and
    performance of all of the membership of an
    institution,and therefore retaining and readjust-
    ment of roles are necessary parts of effective
    innovative strategies ...

6. Innovations that require marked changes in roles
    and responsibilities of staffs or faculties also
    require realignment and adjustments of assessments
    of professional performance and changes in the
    rewards and incentives systems of educational
    institutions.

7. There are also operating, contingent to innovations,
    processes of gradual deacceleration or "entropy."
    These processes tend to reject the new and to
    restore the traditional. Innovations may be per-
    ceived as threat to established statutes, social
    ordering and learned skills, and these threats
    increase the already high levels of insecurities of
    staff or faculty members.[1]

The controversy over the application of technology to educa-

tion has resulted in a debate which perhaps casts more heat than

---

[1] C.R. Carpenter, "Society, Education and Technology, Part Two:
On Planning Developments in Education," Planning for the Effective
Utilization of Technology in Education, op. cit., pp. 21-22.

light on the problem. Oettinger, one of the severest critics of the

use of technology in education, nevertheless offers this worthwhile

summary:

> The introduction of technology into education is an age-old
> process alternately exhilerating and depressing. The vast-
> ness of prevailing ignorance about both education and
> technology is matched only by the acrimony of debate about
> the value of educational technology, a debate blighted by
> a persistent confusion of ultimate promise with immediate
> possibility. Scientists or engineers who believe that quick
> but expensive technological remedies are all that's needed
> to cure education confront businessmen and school board
> members at ease with the status quo and anxious only to
> keep both the budget and the kids in line. Teachers are
> helpless in the middle.[1]

Instructional Planning.--The Texas educational agency

defines instructional planning as follows:

> Instructional planning is a systematic and continuous process
> designed to solve current and long-range problems and influence
> the direction and rate of educational change. Its first
> steps are to define and describe educational problems--in
> order to set goals for planning--and to gather pertinent inform-
> ation about problems and identify resources available to
> deal with them. The next steps in instructional planning are
> to design alternative solutions to problems and then decide
> which alternative to implement. The final steps of the
> procedure lead the planners back through the planning process
> again, but armed this time with information about the results
> of activated plans gained through through their evaluation.[2]

---

[1]Anthony G. Oettinger with Sema Marks, Run, Computer, Run:
The Mythology of Educational Innovation, Harvard Studies in Tech-
nology and Society. (Cambridge, Massachusetts: Harvard University
Press, 1969), p. 39.

[2]Texas Education Agency Office of Planning, Bulletin,
mimeographed, April 1967.

The increasing complexity of learning systems brought about
by the new technologies means that greater planning and control must
precede the student's encounter with the learning situation. The
explicit development and implementation of teaching strategies
becomes the primary planning function. If the strategies are
to develop autonomous learners, Costa finds that they will be based
on relevant data and theories concerning:

> Information about the learner--his characteristics,
> interests, past experiences, and needs.
>
> Past experiences of the teacher--what has worked, what
> hasn't.
>
> Constraints, limitations, and contents of available
> materials.
>
> Theoretical understanding of how learning, motivation,
> reinforcement and transfer take place.
>
> The logical sequence of learning tasks--what must have
> been learned prior to the next learning.
>
> Expectations, values, and directives, of the school
> administration, the community, and the district.
>
> The child's development--physically, emotionally, and
> cognitively.[1]

The potential envisioned for machines and human teachers in
combination remains far more exciting than fearful. Nevertheless
with Joyce, we would like to:

---

[1] Arthur L. Costa, "Strategies for Developing Autonomous
Learners," Audiovisual Instruction, 13: 8 (October 1968) 821.

Imagine an education, for example, in which the student
teaches himself many skills by self-instructional materials
using strategies derived from the analyses of those skills;
engages in scientific inquiry with the guidance of teachers
using strategies derived from the disciplines; studies his
society with other students who teacher-leaders operate
from conceptions of desirable social processes; meets with
a counselor who tries to arrange an educational environment
appropriate to his personality; and selects electives from
a storehouse of instructional systems which are built around
a range of strategies matched to his ability, experience, and
learning style. Now wouldn't that be something.[1]

THEORETICAL BASES FOR EDUCATIONAL PLANNING

This section will attempt to discuss some theoretical bases

requisite for educational planning. While the preceding section

dealt with definitions and parameters of planning activity it is

now appropriate to develop planning as a _dynamic_ activity composed

of a number of discrete steps and organizable along a time continuum.

A brief description of systems analysis procedures will be under-

taken, along with a discussion of the step-by-step process, followed

by a discussion of various educational planning models. The section

will present an integrated planning model which will form a bases

for organizing the planning process.

---

[1]Bruce R. Joyce, "The Development of Teaching Strategies,"
Audiovisual Instruction, 13:8 (October 1968) p 821.

Systems Analysis

System analysis is an orderly process for first, defining

and describing a universe of interest (and the significant factors

and their interrelationships within the universe); and second,

determining what changes in the universe will cause the desired

effect. Systems analysis generally begins with the broadest state-

ment of the universe and then isolates and defines the parts of the

system according to their function, noting the interrelationships

among these functions. Sackman describes systems analysis in

terms of a deductive-inductive reasoning process:

> System development up to a point resembles a progressive
> deductive process proceeding from very general to minutely
> partioned levels. The deductive path runs from statement
> of the problem, to system description,to operational speci-
> fications, to program specifications and transfer functions,
> to flow diagrams, and finally to the coded program manuscripts.
> This process is a stepwise act of creation by successive
> subdivision of the system concept into its elements...The
> initial products, in turn, reverse the deductive trend and
> indicate an inductive process in which small pieces are
> successfully assembled into larger components and
> subsystems....[1]

Thorne and Willard indicate that a systems analysis should

> start at the highest and most general echelon of cognizance
> and authority to determine the boundaries of the overall
> system; proceed to define the system, in stages of increasing
> detail, translating functional requirements into specific

---

[1]Harold Sackman, Computers, System Science, and Evolving
Society: The Challenge of Man-Machine Digital Systems (New York:
Wiley,1967), pp. 280-281.

requirements for material, etc.; and not prejudice the solution by conjecture.[1]

They analyze the advantages of the systems approach in the following

manner:

the system approach is an orderly way of appraising a human need or complex nature, in a "let's stand back and look at this situation from all its angles" frame of mind, asking oneself:

How many distinguishable elements are there to this seeming problem?

What cause and effect relationships exist among these elements?

What functions need to be performed in each case?

What trade-offs may be required among resources, once they are defined?

We have said that the Systems Approach in suitable for assessing the challenges of a broad scale or ... challenges of (a) magnitude ... characterized by the following orders of difficulty:

A complex goal (involving a major system composed of hardware, computer programs, facilities, personnel and data).

A constantly changing environment (which affects objectives, constraints, and criteria)

Limited resources for advanced development (money, manpower, facilities, and time).[2]

---

[1]P.G. Thome and R.G. Willard, "Systems Approach: A Unified Concept of Planning," Aerospace Management, Fall-Winter 1966 in Scientific Manpower Utilization, 1967. Hearing before the Special Subcommittee on the Utilization of Scientific Manpower, United States Senate. (Washington, D.C.: Committee onLabor and Public Works, 1967), p. 278.

[2] Ibid.

These brief comments on systems analysis do not yield a
complete description of the area, a task believed to be beyond
the scope of this paper.[1] While the area has remained controversial,
especially in the application of systems procedures to education,
the comprehensive, step-by-step, total planning process inherent
in systems appears to offer educators these advantages:

1. A way of viewing large problems within a productive
   prospective.

2. The effective organization of the parts into meaning-
   ful systems for dealing with problems.

3. The effective application of resources based on
   alternative organizations.

4. A context for understanding the constraints imposed
   upon the institutional structure of education.

5. A group of planning techniques which makes possible
   large-scale, long-range planning.

6. An interdisciplinary, problem oriented approach to
   research and development.

On the other hand, systems procedures can be no magical
scientific savior for the complex problems implied by technology.

---

[1]A broad literature exists in this field, although little
work has been directly applicable to education. Worthwhile intro-
ductions include: Sackman, op.cit.; Systems Analysis for Education
Planning (Paris: Organization for Economic Cooperation and Develop
ment, 1969); A Modern Design for Defense Decision: A McNamara-Hitch-
Enthoven Anthology Samuel A. Tucker, ed., (Washington, D.C.:
Industrial College of the Armed Forces, 1966); and Frank W. Banghart.
Educational Systems Analysis (New York: MacMilliam, 1969).

Some important limits include:

1. Systems procedures cannot show ways to operate below
    certain necessary minimums.

2. They cannot remove the constraints imposed by
    insitutional force, but they may suggest ways
    to work around them.

3. Systems analysis cannot compensate for a lack of
    clear-cut purpose or for a confused operational
    philosophy.

4. Systems analysis cannot provide simplistic proce-
    dures for arriving at incontestable conclusions.

5. There can be no guarantee that procedures developed
    in one discipline will be automatically trans-
    ferable to another field.

6. Systems analysis cannot replace judgements.

A Step-By-Step Procedure

The process of systems analysis can be defined as made up
of several distinct steps. There is no general agreement as to the
number of steps in this process, although the tasks are usually
organized in a consistent order. Henrie and Bailey suggest the
following six steps in the process:

1. Clarifying goals.

2. Defining objectives.

3. Defining missions and analyzing them as tasks.

4. Sequencing tasks.

5. Setting up a management system.

6. Setting up an evaluation system.[1]

The process of systems analysis is not straightforward

or linear. Many processes interact, and feedback from any point can

force us to reexamine an earlier step before proceeding further.

In this respect, the following listing of basic steps seems useful:

Step I : Conceptualizing the system or the "problem
           universe";

Step II : Defining the subsystems;

Step III: Stating the objectives of the system;

Step IV : Developing alternative procedures for achieving
           the objectives;

Step V : Selecting and implementing the best alternative;
   and,

Step VI : Operating the system.

Figure 2, based on these six steps shows the

basic system methodology as developed over the past 20 years. Note

that the system begins by explicating boundaries of the system and

problems envisioned by the analysis. It proceeds then to a system

description and a statement of systems requirements. The next

step on this chart shows the basic subsystems divisions usually

---

[1]Samuel N. Henrie Jr., and Higgins D. Bailey, "Planning
Carefully or Muddling Through: an Educator's Choice." _Journal of
Secondary Education_, XXXXIII (December 1968) pp 349-352.

FIGURE 2 - a

A METHODOLOGY FOR DESIGNING ALTERNATIVE SYSTEMS

FIGURE 2 - b

A METHODOLOGY FOR DESIGNING ALTERNATIVE SYSTEMS
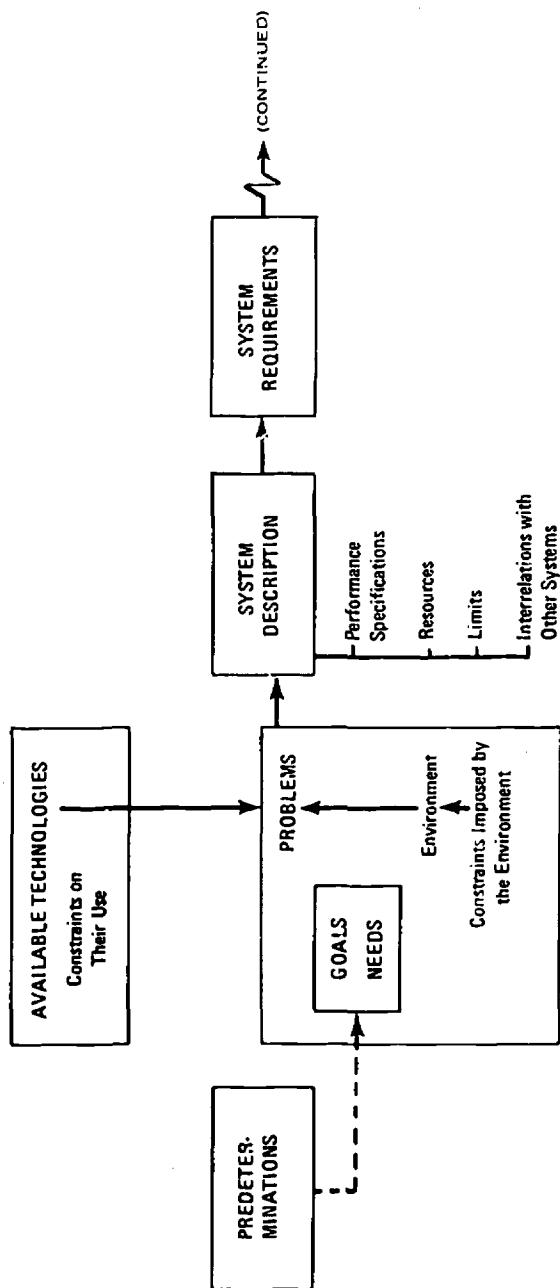
recognized in system planning: program, personnel, and equipment.

These three subsystems undergo design and production phases, both

of which are mentioned by programs of management or evaluation.

These management and evaluation systems govern the operation of the

system when that stage is eventually reached.[1]

### Aspects of Total Systems Planning

The effective application of systems procedures in education

should be viewed from a perspective which sees the total design

process as composed of three interrelated but distinct aspects.

These are the task of systems design, the analysis of the system

environment, and the change or implementation process. Figure 3

shows how these relationships can be explained graphically by

imbedding each of these elements within a circle and enclosing

these circles in a box. Between each circle is a two-headed arrow

indicating the necessary intercommunication among the elements.

The system design process has yielded highly sophisticated

engineering systems, but this process has not been functionally

interrelated to either the system environment or the change and

implementation process. The systems approach begins with a premise

that the educational enterprise achieves its apparent objectives

---

[1]See Sackman, op. cit., Chapter Five, "System Development
and System Testing," pp. 171-216.

FIGURE 3

THE TOTAL DESIGN PROCESS

System Design

Implementation
and Change Process

Environment
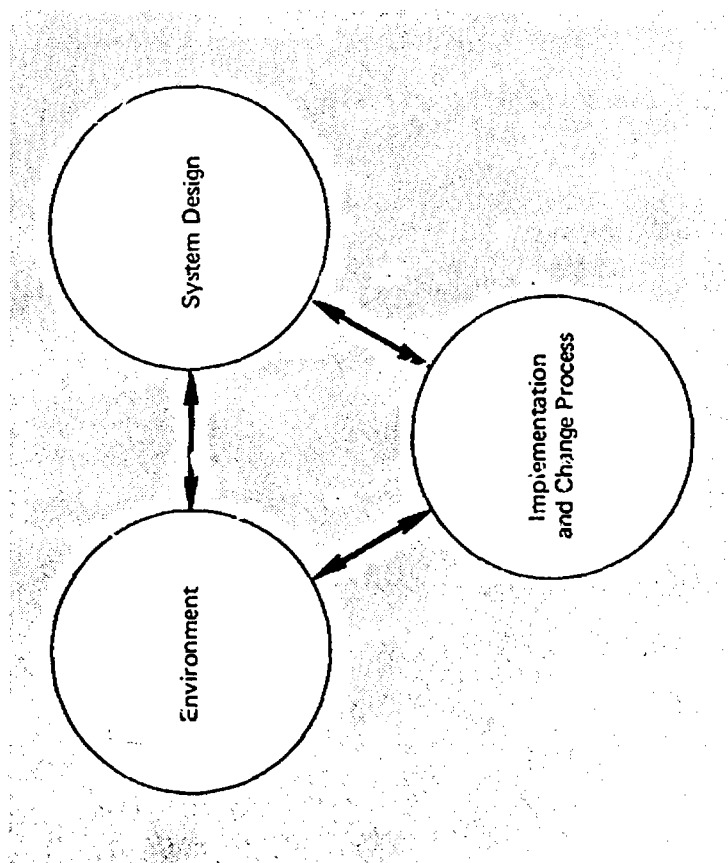
primarily through people, rather than through machines. Furthermore, the systems approach of industry must be modified if it is to serve school enterprises properly, since industrial organizations generally utilize rigid barometers to indicate degree of success and failures--such as profit or loss statements, measurement of tangible products, and quality assurance standards--while school systems have generally operated in the absence of such definable criteria. Basic to the entire concept of systems procedures when applied to the educational environment is a belief that if the systems concept is to be helpful to educators, it is important to recognize that schools exist primarily to facilitate goals related to student learning.

If education is thus regarded as a system, it clearly follows that problems neither exist nor can be solved in isolation from the total system; and the system's environment must also be considered, since the environment is the primary location of both system constraints and system resources. The environment includes both the explicit and the implicit political, economic, and social forces which impinge on the system. It causes system problems, and it can also provide problem solutions. For instance, suppose a program of training, emphasizing child growth and development, were provided for all expectant mothers. Such an alternative might

produce greater results than similar expenditures for additional
preschools, for nursery-level educational television, or for some
other scheme. This essentially educational program, however,
while affecting the K-12 input and thus the educational system
would require changes in areas beyond the limits of the ordinary
school system, as well as adaptive changes within it.

The literature on change and implementation appears to be
growing at leaps and bounds both within and outside the field of
education, and the development models has improved the evaluation
effort. Feedback relating input and output is beginning to yield
some effective observations of educational programs. It may be
too soon to place strong faith in analyses of critical factors and
predictions based upon them, but they have certainly become useful
and important guides to judgement.

These three areas, the system design, the system environ-
ment, and the change process, have not received sufficient attention
as integral parts of a single process for discovering and implementing
educational improvements. As a result there is little compatible
information on which to develop the potential effects of changes
in one aspect of the total process or the whole process. For
instance, evaluating whether to change the system or to redefine
the environments can seldom be adequately handled by present tech-

niques of experimenting, both because essential factors are not always
known, and because alternative environments in education are seldom
considered.

Levels of Educational Planning

The preceding section made clear that a total planning
system must include several elements. It is also necessary to
emphasize that educational planning occurs at a number of "levels."
Indeed, many difficulties in planning occur from confusion about
the level at which the planning is taking place. For instance,
a federal mandate (as evidenced through the NDEA, 1958) to supply
great quantities of technological gadgetry to the schools made
excellent good sense in terms of the necessity for expanding
certain industrial sectors of the economy. The same decision,
however, appears to have been justified when considered at planning
within the schools.

In attempting to clarify the various levels of educational
planning, Figure 4 defines seven such levels and suggests major
"inhibitors" for each. Specific planning tasks can then be defined
at each level and specific organizations of the planning function
can be recommended.

FIGURE 4 - a

SEVEN LEVELS OF PLANNING

LEVEL	DEFINITION OF TERMS	INHIBITORS OF THE SYSTEM
The Mandate	Within the community exist forces which arise as the result of perceived needs of the community. One such expression is "education." This force then is generally expressed in four ways: 1. Philosophical: the good of the mandate 2. Societal: the legitimacy of the mandate 3. Political: the active value of the mandate 4. Economic: the power of the mandate If no such expression exists within the community, one must be created by leadership - a relatively autocratic viewpoint, or the area may be considered not worthy of attention. The increasing concern for "poverty" and "integration" are examples of changing mandate.	Philosphy: amgiguous, unclear, missing Society: no clear felt need 'or education (i.e., only indoctrination, or some other form of initiation) Political: Lack of viable consensus Economic: lack of resources or lack of aporopriate allocation of resources
The Mission	The forces of mandate organize themselves into an expression of the force of the mandate, the population affected by the mandate, the direction of the mandate, and the reason of the mandate. The sum of these statements expresses the mission. Each of these areas requires explanation: 1. Force of the Mandate: such expressions as "our democratic obligation," "the American responsibility," "the white man's burden " or "the Christian's duty," represent the expression of a mission's force. Less emphatic expressions may be found, for instance, "when resources are available," "the worthy aim of elimination of poverty must wait the return of peace," and "the cause is noble." Without adequate force a mission will fail. 2. The Population: a mission concerns a population by eliminating nonparticipants. The democratic obligation affects only those who can accent a mission as cbliging their democratic sensitivities. Population is stated by the creators of mission or arises as a concomitant of mandate. To some extent population adds force by requiring entrance or focusing efforts. 3. Direction of the Mission: education seeks to provide the good man. Direction indicates where a mission will lead, and a mission must encompass distance or atrophy. For education, the direction of mission depends on a belief in the improvability of man through growth in such a way as to make life more meaningful The Cardinal Principals are valuable statements in this sense (and perhaps in this sense only).	Omission of operational acceptance makes mission only idle banter Force implies willingness of the individual to accept without coercion; otherwise the mandate loses its effect Insufficient numbers adhering to the mission, or adhering to essentially conflicting or competing missions, weakens the potent al consensus and the potential strength through dedicated numbers Lack of direction cause dissipation of resources, anomie, and cynicism. Chief inhibitors are failure of consensus, lack of dedication, confusion about means, competition among power groups and means, and stability maintenance and defense mechanisms preventing growth and change

FIGURE 4 - b
SEVEN LEVELS OF PLANNING
(CONTINUED)

LEVEL	DEFINITION OF TERMS	INHIBITORS OF THE SYSTEM
The Mission (CONTINUED)	4. The Reason of the Mandate: a mission appears reasonable because of the obvious inability or inadvisability of life to continue otherwise. The improvability of man through education provides the vehicle for human attainment.	Lack of drive, self-satisfaction (on a societal level), insistence on "crash" programs or emergency conditions to provoke action, and philosophic confusion detract from the reason of the mandate. The chief inhibitor of mission is ennui.
Aims and Goals	Aims are generalized sub-divisions of the mission. As such, they should be consistent with the statement of mission and capable of being justified by reference to the sense of mission. Goals, then are specific, frequently measurable, statements emenating from the aims. Both aims and goals can change without changes in the mission, but a change in aims and goals will affect the means, tasks, skills, and techniques. A twelve year education for everyone may suggest a desirable aim, but if the mission is to provide an educated man, the aim may not fulfill the requirements voiced by mission.	Lack of consensus for establishing priorities inhibits operation. The inability to express viable aims and/or workable goals prevents development of a system.
The Means	Means is used here to indicate the institutions of education. The word causes some problem. Means are appropriate for aims and goals or they fail to meet the aims and goals. It is the force of institutions that they seek to protect themselves when aims and goals change and render them obsolete or ineffective. In this sense institutions possess a force not attributable to aims and goals, whose redefinition can be prevented by institutional power.	Poorly defined institutions result from the lack of sanctioned purpose. The schools, then, are in a state of flux, drifting rather than directed to a task. Adjustments of the system for the convenience of the means subjects aims and goals to the requirements (needs and institutional force - usually defensive) of the system and prevents adjustments necessary to align the system with change.
The Tasks	The programs operated by institutions should stem from the requirements of the aims and goals. Appropriate tasks should be assigned to appropriate institutions, within a field of awareness of the full number of institutions addressing a mission. Tasks can be organized by the nature of the human involvement and judged appropriate by their success in achieving aims and goals within the context of the means.	Programs become ends for themselves rather than building blocks for the achievement of aims and goals of high purpose (i.e., the inbreeding of academic success tends to further the aim of academic success rather than relating its meaning to a larger framework).
The Skills	Here is another troublesome word, but it is intended to encompass those things learnable which are required for the achievement of tasks, viz., the attainment of goals. We assume our well educated man (an aim) requires competence in the use of his native language (a skill). Skills may be of two varieties: content and method. One learns to read (method) in order to be well read (content).	Skills are necessary to permit the achievement of program. Skills cannot be more clearly defined, or adequately selected, than the program statements which guide their determination. Programs designed only to achieve skills are classed within themselves, unless the relation to higher aims and goals has been established (e.g., there is little purpose in learning to read unless print media are available and a natural (an accepted - mandated) item of the societal need.

FIGURE 4 - c

SEVEN LEVELS OF PLANNING
(CONTINUED)

LEVEL	DEFINITION OF TERMS	INHIBITORS OF THE SYSTEM
The Techniques	This area incorporates the whole methodology of achieving skill development. Technique is appropriate if it achieves skills in such a way as to further the aims and goals. Some techniques are destructive of the mission although they achieve the required skill. Regimentation, for instance, is found to be such a technique.	(Technique is useful when it promotes efficient, efficacious accomplishment of skill training for task accomplishment). Techniques promoted for their own sake, or as central to the system, destroy the system. This danger holds whether the supported technique is a philosophical system or a technological advance.

Models for Educational Planning

Many problems of educational planning can be
understood through the development of educational models. Such
models should be of sufficient complexity to define the system
completely, yet of sufficient abstraction to permit the design
of change. Models of the operating educational system--either
process or institution-oriented--have not as yet been sufficiently
developed. Indeed, their importance has only recently been estab-
lished.

A successful model depends upon a representation of reality
which is sufficiently accurate for the purposes of the planners
and which takes account of alternatives. Successful model
development is dependent upon the availability of adequate data,
frequently over a period of time. Wurtel concluded his study of
educational models in these terms:

> The picture portrayed here is one of formidable theoretical
> and statistical obstacles to the development of adequate
> planning models. Though many of the models (analyzed for
> this study) are still in fairly exploratory stages the
> extensive current interest in such efforts may be some
> indication of a growing sense on the part of planners of
> the importance of such endeavors, and may provide some hope
> for significant theoretical breakthroughs in the not too
> remote future. Due to the complexity of the educational
> system (vast numbers of inter-dependent variables, com-
> plicated and not too well understood relationships, changing
> patterns), as well as the complex array of demands upon
> the system from other sectors of the economy, mathematical

models may evolve into indispensable tools for rational and consistent planning.[1]

Concerned with applying scientific methodologies in the social sphere, Helmer describes the purposes and characteristics of modeling in these terms:

> The purpose of constructing a model of a given situation is to select certain elements as being relevant to the problem under consideration, to make explicit certain functional relationships among the elements, and to formulate hypotheses regarding the nature of these relationships. A characteristic feature in the construction of a model is abstraction: certain elements of the situation may be deliberately omitted because they are judged irrelevant, and the resulting simplification in the description of the situation may be helpful in analyzing and understanding it. In addition to abstraction, model-building sometimes involves a conceptual transference. Instead of describing the situation directly, it may be that each element of the real situation is simulated by a mathematical or physical object, and its relevant properties and relations to other elements are mirrored by corresponding simulative properties and relations.[2]

There are many varieties of models. Some give only an impression of a universe and, as a work of modern art, may be communicable only to a small group. Other models may be carefully detailed and easily understood by those familiar with the symbol system. Presently there is a strong preference for models which

---

[1]Zavia S. Wurtele, _Mathematical Models for Educational Planning_ (Santa Monica, California: System Development Corporation SP3051 November 1967), p. 18.

[2]Olaf Helmer, _Social Technology_ (New York: Basic Books, 1966), p. 7.

relate their parts by describing the information passing between
them. These "cybernetic analyses" provide more operational or use-
ful views of reality than the earlier mechanistic or biological models.
The development of information models, especially those mathematically
based, within the field of education is perhaps a task beyond the
present "state-of-the-art."

All models, regardless of how abstract or concrete, have
certain characteristics by which their usefulness may be judged;
these include: (1) the model is complete; (2) the model reflects an
operational reality; (3) the model is understandable; (4) the model
encourages further analysis; (5) the model encourages feedback.

A useful model for purposes of educational planning could
be evaluated on each of these five points. Helmer's analysis of
the model's advantages is especially worthwhile:

> The advantage of employing a scientific model lies in forcing
> the analyst to make explicit the elements of a situation he is
> taking into consideration and imposing on him the discipline of
> clarifying the concepts he is using. The model thus serves the
> important purpose of establishing unambiguous intersubjective
> communication about the subject at hand. Whatever intrinsic
> uncertainties may becloud the area of investigation, they are
> thus less likely to be further compounded by uncertainties
> owing to disparate subjective interpretations.[1]

---

[1] Ibid, p. 8.

Educational planning models should include a macro-model

for "education," another macro-model for the "schools," and appro-

priate micro-models for specific clusters of behavioral aims and

goals. An "educational macro-model" should cover, broadly, all those

aspects of changing behavior for which educational institutions are

considered responsible. The school would select "goal areas" from

the macrc-model for education. Figure 5 indicates one macro-model

system view of a program of education through the schools. The

primary reason for developing such a model is to present an over-

view of the total educational system, and to interrelate

specific planning missions. Thus a high level of system integration

can be maintained.

Figure 6 shows another form of model begins with the

individual student and traces the development of the curriculum,

by relating content and method to the learner and the system's

objectives.[1] This type of model facilitates the planning of programs

based on (1) a theory of learning and the learner, (2) a body of

knowledge appropriate to the goal, and (3) a selection of teacher-

technology resources which facilitates achievement of the goal.

---

[1]This model was developed during discussions with Stuart
Westerlund, then in the Office of Planning and Evaluation, Bureau
of Elementary and Secondary Education, U.S. Office of Education.

FIGURE 5 · a

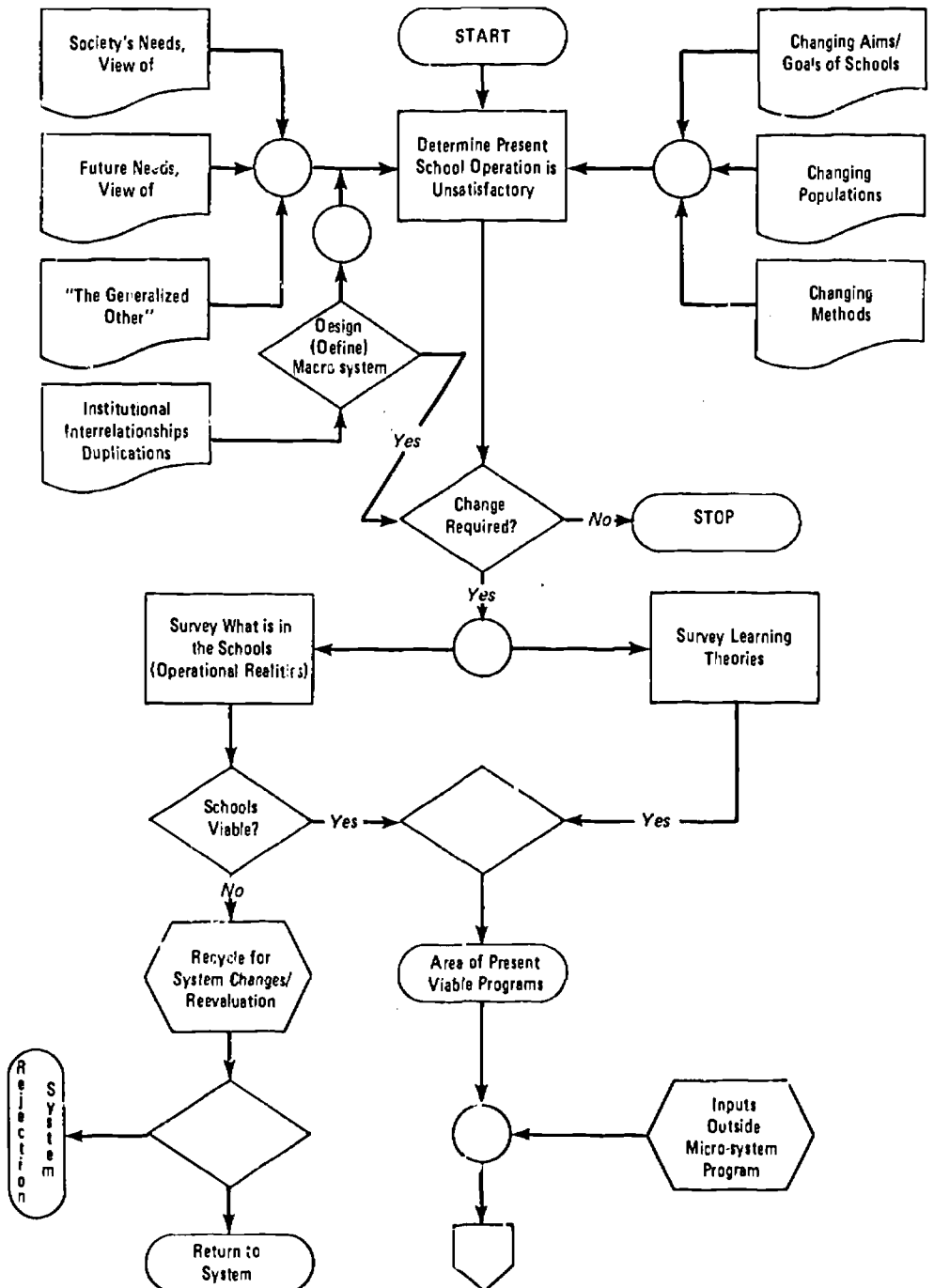## THE MACRO-SYSTEM OF THE SCHOOL SYSTEM

FIGURE 5 - b
THE MACRO-SYSTEM OF THE SCHOOL SYSTEM
(CONTINUED)

Restudy System

Determine Measurable Goals from Above Study

Continue System ← Yes — Possible Under Present System — No → Change System of Schools

Birth to Death Needs of Individual viz. Trends of System of Schools

Yes · No

Macro-systems Relationships → Sufficient in Formation

Needs of Society Expressed as System of Schools

New Roles of Education In/Out of Systems of Schools

Yes

Discard Goals ← No — Desirable Under Present System — No → Change Current System

Yes →

Objectify All Possible Goals of the System

Tests for Objectivity, Redundancy

Reject Possible Not Desirable ← Select Desirable Goals → Not Achievable Under Present System, Develop Research
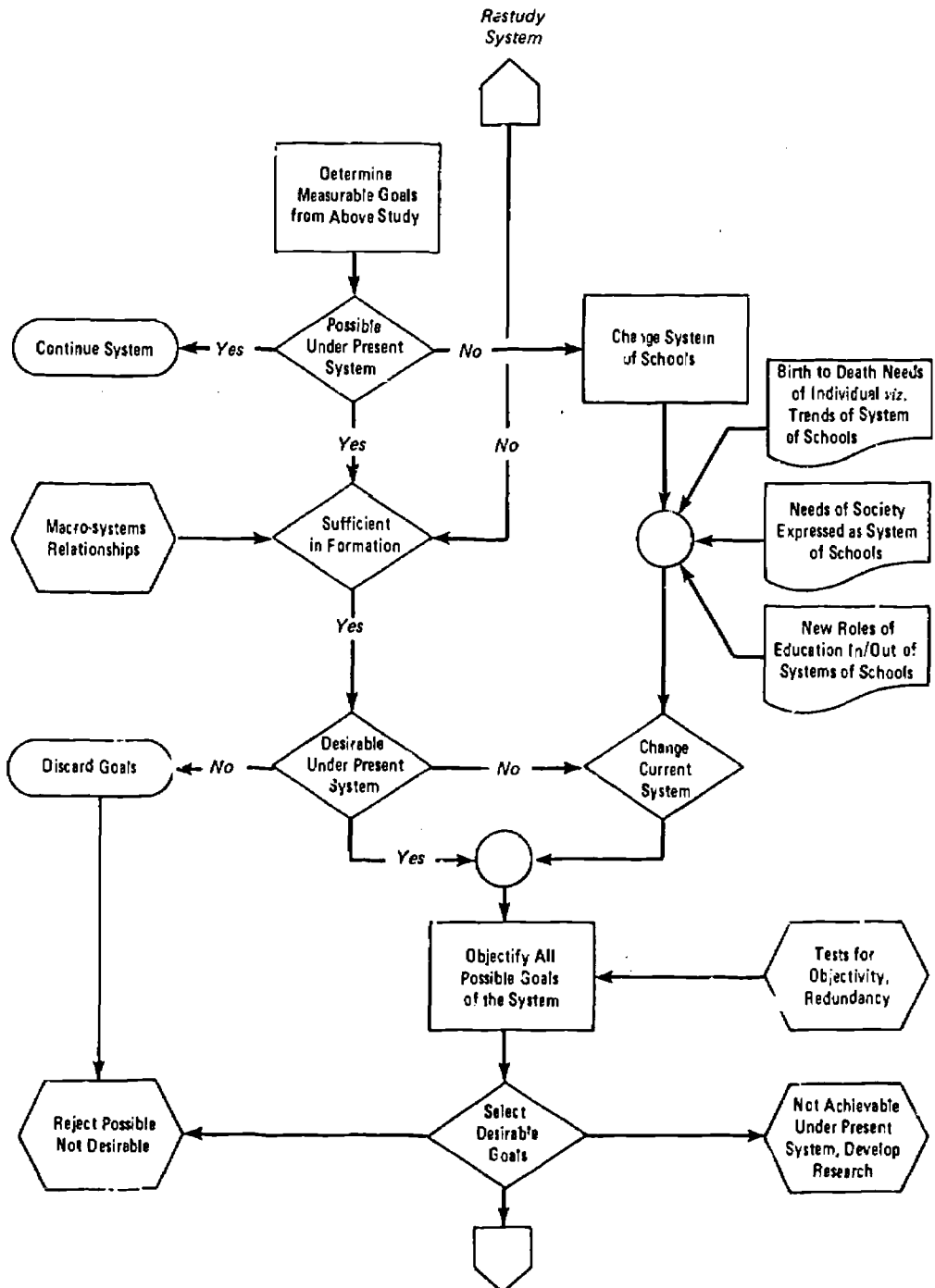
FIGURE 5 - c

THE MACRO-SYSTEM OF THE SCHOOL SYSTEM
(CONTINUED)

FIGURE 5 · d
THE MACRO-SYSTEM OF THE SCHOOL SYSTEM
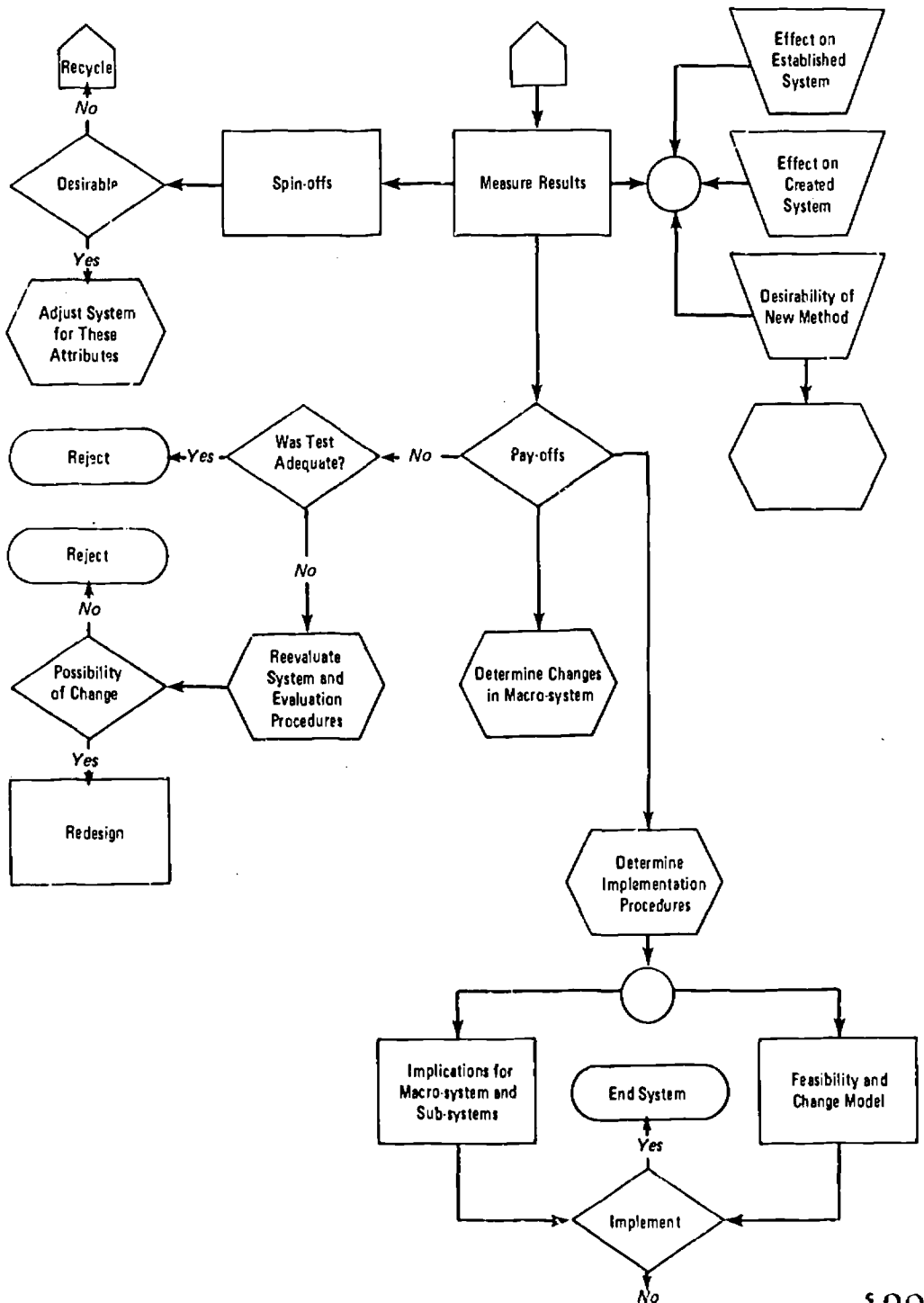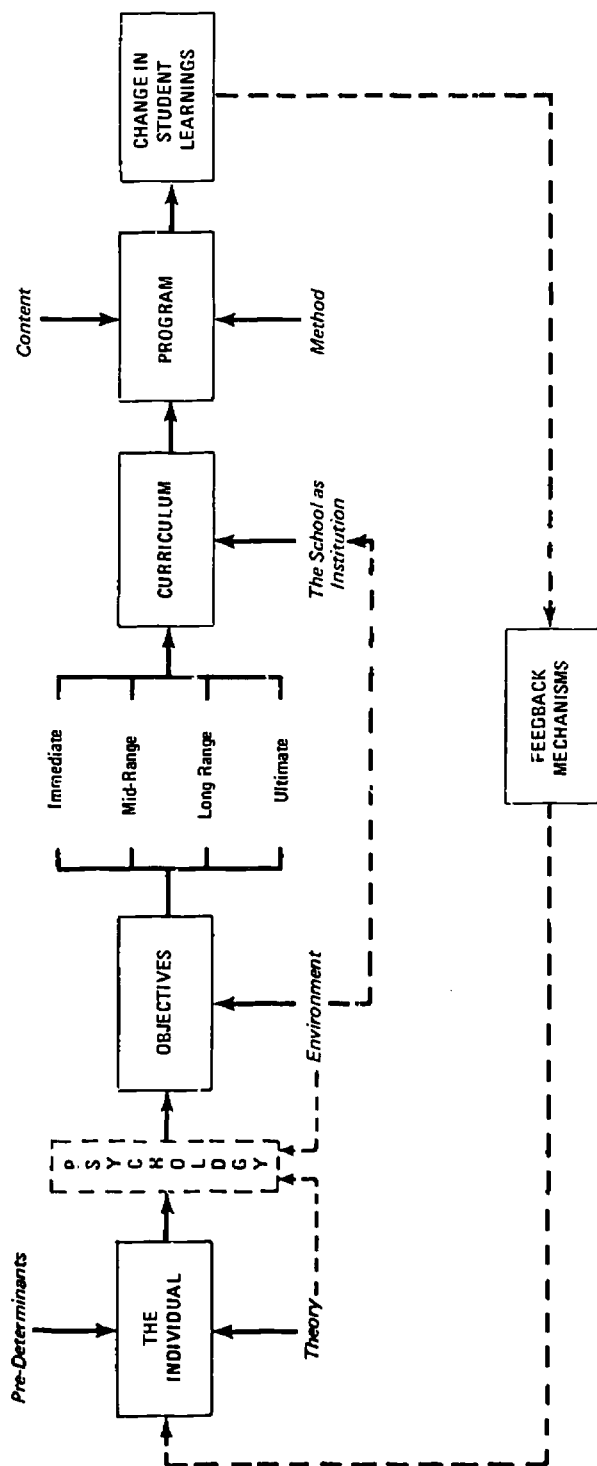### (CONTINUED)

133

FIGURE 6

A FRAMEWORK FOR THE DEVELOPMENT OF
EDUCATIONAL LEARNER-BASED EDUCATIONAL PROGRAMS

The concern, however, rests not only with the individual but with a system of education which can effectively deal with great numbers of individuals. Any organization, however, because of its existence, has goals of its own. The organizational goals, if the organization is responsive, should operate in a clear dynamic with the goals for each individual within the system. This may not always be the case, and it has been strongly suggested that the schools have lost sight of their relationship with students through institutional rigidity, defensiveness, and a lowering of efficiency. Figure 7 posits a dynamic between these two viewpoints and suggests a mechanism for evaluating the degree to which each program is worthwhile.

No one model, it has been suggested, can adequately portray a system so complex as a school or a process so sophisticated as education. Subsystems, however, can be extracted from the gross-systems models and developed to indicate the significant aspects or features of the total system. The interrelationships of these subsystems, based on their effect on system goals, would relate the parts to the whole. The models provided for educational planning at this stage of sophistication would not be intended for mathematical simulations, but they could shed light on the form and substance of the system. It seems important for the "art of education" that the necessity to qualify all aspects be controlled.

FIGURE 7

RELATING INDIVIDUAL AND ORGANIZATIONAL OBJECTIVES

129
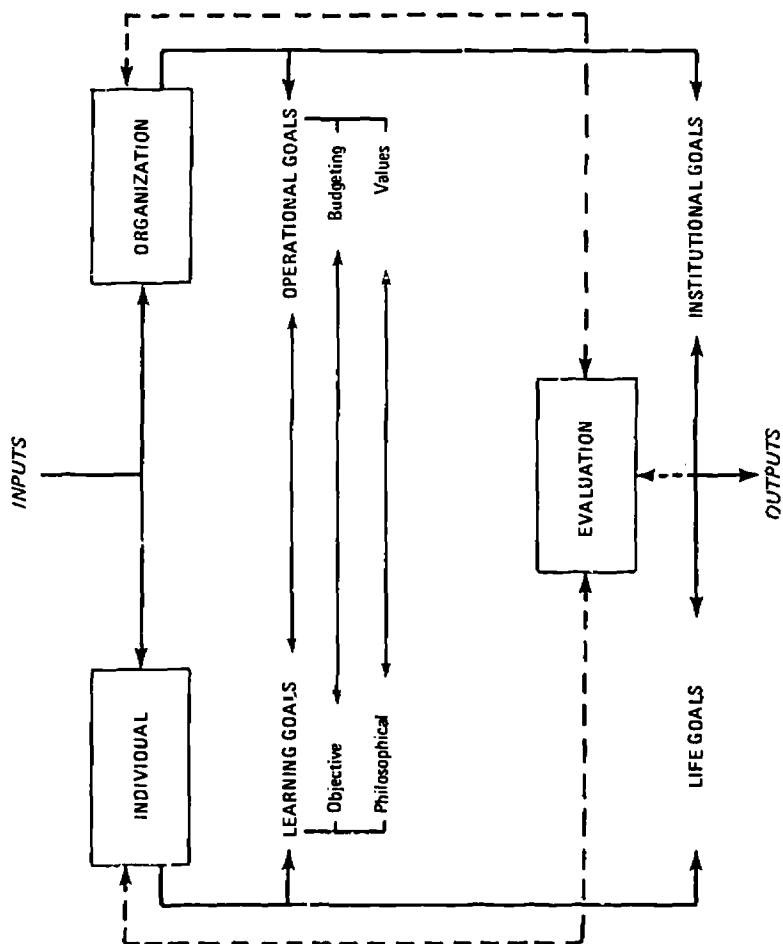
This form of model building appears to be basic for the process of comprehensive, long-range educational planning. Ackoff puts these activities in perspective:

> It seems to me, one of the most practical things we can do in preparing ourselves for effective long-range strategic planning for an organization is to engage in the invention or design of an idealized form of that organization, an exercise that should ignore all apparently practical constraints. Once such a design has been completed, we can determine how closely it can be approximated and we can systematically plan the transition toward the ideal. However, we should not engage in designing an ideal without awareness of two essential characteristics of such an effort. First, our concept of an ideal will change over time, and hence our formulation of it at any moment of time is at most a _relative absolute_. Second, since our efforts at idealization are necessarily rooted in our own culture, any ideal that we formulate is not likely to be ideal in societies other than the one in which we have grown. Therefore, a formulation of an ideal is not only a relative absolute, it is also _absolutely relative_. One final general point: I am certain that one essential characteristic of an ideal university or an ideal business is that it would be continuously designing itself and would use controlled experiments to evaluate at least the important features of the redesigns. Therefore, if idealized design is a utopian effort, it is utopian with a difference: the utopia involved is dynamic and far from perfect but is capable of systematic progress toward that elusive ultimate ideal, perfection.[1]
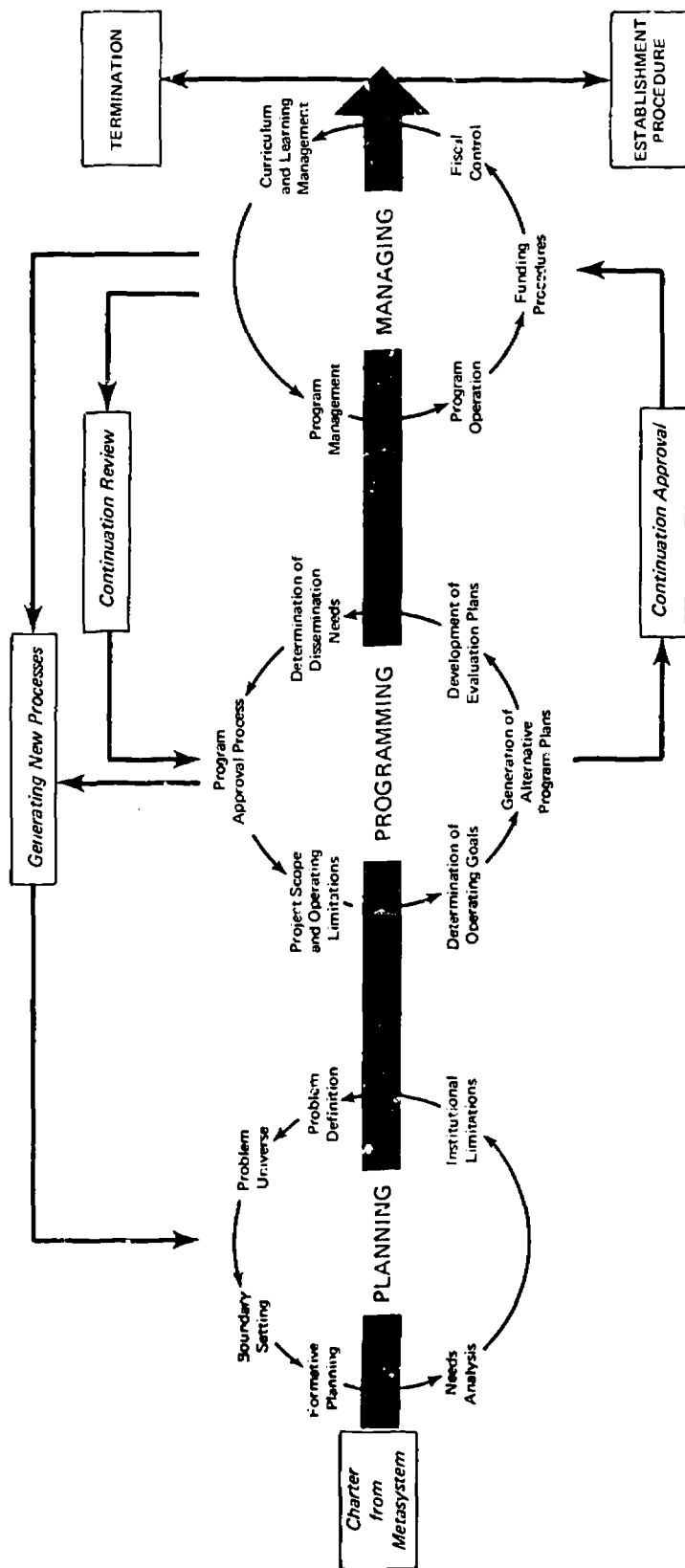
An Integrated Planning Model

A basic axiom for effect.ve comprehensive, long-range planning is to avoid confusing part of the planning process with _all_ of planning. Figure 8 presents a model which attempts to integrate

---

[1]Ackoff, _op. cit._, p. 60.

FIGURE 8

AN INTEGRATED PLANNING MODEL

the various aspects of the planning process. This model is based
in part on the PPBS (Planning-Programming-Budget System) work
sponsored by the federal government and recently applied to educa-
tional planning.[1] It seeks, however, to go beyond the PPBS work by
suggesting relationships between the program planning effort and
activities outside of the model. It further seeks to link various
types of planning orientations (i.e., manpower, priority, economic,
etc.) and various specific planning activities as they occur in an
on-going planning mission.

The model begins by positing a direction for the planning
process, indicated by the black arrow running through the center of
the process. At the left extreme are indicated the chapter from
the meta-system, that is, the forces outside of the defined educa-
tional system influencing its scope and its definition of problems.
The arrow indicates a movement through time and space. At the
right end of the arrow are two divergent decisions. Planning
either leads to a practice which becomes established or to the
termination of some practice, either a former one or one which was
not effective following deliberate planning.

General statements on PPBS are contained in <u>Program Budgeting</u>...
David Novick, Ed., (Santa Monica, California: RAND, 1964, 1965) and
Harry J. Hartley, <u>Educational Planning-Programming-Budgeting</u>:
<u>A systems Approach</u> (Englewood Cliffs, New Jersey: Prentice-Hall,1969).

Superimposed on this basic dynamic are three circles labeled <u>planning</u>, <u>programming</u>, and <u>managing</u>. Each represents a major division in the total planning process and resembles some- what Anthony's division of planning into strategic planning, management planning, and control. Each circle is envisioned as an arrow proceeding in a direction. This is to suggest that each of the operations, represented by a circle, while interdependent, establishes a synamic within its functional space. On each circle various basic activities for the particular planning process are indicated. Once ideas are developed at the planning level, they can be moved to the programming level. When effective programs have been designed, they can be transferred to the management level and operated as on-going program. Information from operation is fed back to the programming and/or planning stages so as to review the present process and to generate new planning. If the continuation review indicates that the programming (although it may require modification) has been satisfactory, it will remain a management-level responsibility. But if the review indicates that the program-ming is not constant with the system needs, then additional planning will be undertaken based on experience with the systems operation.

Each of the activities on the circles relates to a particular kind of activity. For instance, an educational system would under-

take a needs analysis, but similar analyses would be undertaken by
a health system, a welfare system, and a manpower procurement
system. These analyses would indicate trade-offs among the systems.
Each activity, therefore, suggests a major integrated planning
process. One can imagine a number of circles connecting each
activity, almost as gears intermesh.

This kind of planning model should be applicable to all the
levels of planning indicated by Figure 4. The model serves
two purposes: First it emphasizes that at any planning level the
total process of planning can be undertaken in the stages represented
by the model; thus, the integrated function of planning is explicated.
Second, the model shows some ways of relating these planning levels
and indicates how feedback can be used as a basis for future plan-
ning. Through this dynamic both the time and the hierarchical
dimensions can be related by an integral process.

This generalized planning model offers another advantage.
Within its boundaries models developed for curriculum, mathematical
analyses or for management may be contained. While no one model
can adequately present the dynamics of education, one which facili-
tates understanding the processes for effective educational planning
can be exceedingly useful.

ORGANIZATION OF THE PLANNING PROCESS

The first section of this chapter attempted to establish a
definition for long-range comprehensive educational planning, and
the second discussed some theoretical bases for this activity.
The present section will now attempt to place this function in an
organizational setting. The viewpoint will be specifically on long-
range, comprehensive educational planning within federal, state and
local educational agencies, because regardless of the thrust by
industry on the instructional and curricular areas, the public
schools will continue to be the baseline institution for such
planning.

Location of Planning Responsibilities

There is general agreement in the planning literature that
the more comprehensive and the more long-range the planning effort,
the higher the responsibility for it should be placed in the organi-
zation.[1] Several levels of public planning are usually recognized:
(1) planning as a political process, (2) planning at the national
priority level, (3) planning as a function of the state education
department, and (4) planning in the local school district. Additional
planning and development missions are carried out by R&D centers,

---

[1]Preston P. Le Breton and Dale A. Henning. _Planning Theory_
(Englewood Cliffs, New Jersey: Prentice-Hall, 1961), p. 184.

)

universities, and professional organizations. These efforts,
however, are generally not comprehensive in nature.

Buchmiller describes the educational comprehensive planning
process as it relates to basic concepts of public administration.
In an extremely useful paper, he suggests that:

> Ample evidence can be found within the various layers of
> bureaucracy of public administration that competition for
> resources will set up at least four levels in the politics
> of planning. The first level can be characterized as the
> intra-agency competition for the ear of the executive for
> various component parts of the program for which the agency
> is responsible. The second level is the inter-agency com-
> petition for priorities and financial resources to carry
> out programs for which each agency is responsible. The
> third level of political conflict occurs in the legislative
> arena as executives seek and compete for political support
> necessary to establish and implement needed programs. The
> fourth is between government and the private sector where
> intense competition shows no sign of abating; rather, it
> will probably increase as larger allocations of financial
> resources become available to meet social needs.[1]

Buchmiller indicates clearly a basic tension in the planning
process between the legislative and the executive function at each
level of government. Indeed, a considerable literature discusses
the appropriate location of the long-range, comprehensive educational
planning function. This discussion can be summarized by recognizing
that comprehensive, long-range educational planning is facilitated
by the mutual cooperation of political and administrative elements

---

[1]Archie A. Buchmiller, Central Comprehensive Educational
Planning: A Role for State Educational Agencies (Madison, Wisconsin:
Wisconsin Department of Public Instruction, DPI-BOP-2-1969, 1969)
p. 5.

at each government level and among the various government levels.

Within this context McClure indicates that the state educa-
tion department "should have responsibility for planning on a long-
range basis. But this planning cannot be left entirely to the agency
itself and its staff members. The state agency is in a unique
position to give leadership but it must involve others.[1] Furse
suggests several choices for a state's selection of an appropriate
planning mechanism:

1. The state education agency may assume responsibility
   for or may be designated as the sole planning body for
   all aspects of education....

2. A planning council (or commission) may be created--by
   legislative or executive action with representation from
   the major sectors of education.....

3. A state planning commission may be elected or created
   to coordinate statewide educational planning, and to
   assimilate educational plans into a total, comprehensive
   state development plan.

4. A citizen's committee may be appointed to establish
   broad educational goals,and to reconcile the needs of
   different educational agencies and institutions.
   Regular authorized administrative bodies could serve
   the technical planning needs of such a citizen's goal
   setting committee.

5. The state legislature may retain to itself the right to
   formulate plans.

_____
[1]William P. McClure, "Planning Adjustments in the Educational
System," Educational Planning in the United States, op. cit., p. 136.

6. An eclectic or syncretic approach may utilize elements
   from all of the above as well as additional ones
   not included here.[1]

The role of the federal government in comprehensive, long-range education appears confused and subject to interpretation, since studies of the comprehensive planning process at the federal level have not indicated any specific locations for planning responsibilities.[2] Several functions of federal planning are significant: (1) federal planning is rarely comprehensive; it results in specific legislative programs to meet specifically defined educational needs. (2) the implementation of PPBS within the Department of Health, Education and Welfare and the U.S. Office of Education led to the establishment of planning departments at the office and bureau levels. These departments have not yet, however, made available long-range plans for their particular divisions, although they have produced much of the groundwork necessary for planning.

---

[1]Bernarr S. Furse and Lyle O. Wright, eds., Comprehensive Planning in State Education Agencies (Salt Lake City: Utah State Board of Education, 1968), pp. 26-27.

[2]See, for example, Robert Dorfman, ed., Measuring Benefits of Government Investments (Washington, D.C.: Brookings Institution, 1965), and The Planning-Programming-Budgeting System: Progress and Potentials, Hearings before the Subcommittee on Economy in Government (Washington, D.C.: Joint Economic Committee, Congress of the United States, 1967).

(3) there seems to be no particularly viable models guiding the
appropriate purposes and tasks of educational planning at the
federal level.   (4) an effective approach to understanding federal
planning is through the study of individual legislative histories.
An important aspect of the federal involvement in educational
planning has been the support of these activities at the state and
local level. Through monies made available under Title V of the
Elementary and Secondary Education Act, various projects in com-
prehensive planning have been undertaken within specific states and
by regional or other state groups. These projects represent the
comprehensive approach to the design and development of comprehensive
planning missions within public agencies.[1]

The development of comprehensive, long-range planning in local
school districts has been less organized and consequently less
significant than the development within the state educational depart-
ments. This concern appears directly attributable to three factors:
(1) a lack of outside support for such activity, except as it
relates to the grants procurement process for federal funds; (2) a
lack of commitment on the part of the local electorate and school
administration for comprehensive long-range planning;[2] and (3) a

---

[1]See Furse, op. cit.

[2]Some school districts indicate important exceptions. Plan-
ning missions are underdevelopment in Niskayuna, New York, Garden
City, New York, Dallas Texas, among others.

lack of skilled planning personnel available to the local districts.[1]

Nevertheless Hill suggests that

> A logical approach to long-range educational planning is
> to consider planning as a basic responsibility of the
> local school community. If such planning is initiated at
> the local level, it must rise above local provincial interests
> and be coordinated with overall community, area, state, and
> national needs.[2]

McClure, on the other hand, has distinguished between the appropriate

planning functions of the local district, the regional agency (if

one exists), and the state education agency and finds these functions

central to the local school district: definition of goals, adjust-

ments to the conditions for social interaction of members in the

organization, performance of members of the organization, capacity

of the school system to use improved technology, and improvement of

the social context of the school's system.[3]

Planning within each of these units is important, but the

relations between the units is equally important. Effective, com-

prehensive, long-range educational planning requires effective

---

[1]The University of Alabama, under a grant from ESEA Title V,
is developing a graduate program and training local educational
agency planners.

[2]John C. Hill, "Long-Range Educational Planning," _Comparative
Education_, XXXIV (May 1968) 270.

[3]McLure, _op. cit._, p. 129

communication and interaction among the horizontal and vertical

units of the total system. Equally important to such educational

planning is appropriate communication with the political and social

forces <u>outside</u> the field of education or the institution of the

schools.

The traditions of public planning and corporate planning have

emerged from separate roots and primarily with separate purposes.

Public planning has been concerned generally with larger geographic

areas and greater segments of the population than corporate planning

which has been product oriented, concerned with profit, and with

forming the corporation to meet its stated goals. If anything,

corporate planning appears to have been somewhat more simplified than

public planning because the corporate goal structure seems less

complex. These distinctions, however, seem to be lessening as the

corporation continues to become more diversified and complex.

Branch has summarized the corporate planning responsibility

as follows:

> In its planning, corporate management is concerned with the
> business activity as a whole. This includes a number of
> diverse elements interrelated within the organization in a
> complex pattern: people, money, materials, machines and
> equipment, objectives, policies, procedures, information,
> knowledge, morale, and many others. A second set of vital
> interrelationships with the socio-economic, governmental,
> and physical environment external to the corporate
> organization itself is also involved. These two sets of

interactions are interdependent, of course, and their
differentiation is useful mainly for analytical purposes;
an input at any one point will influence various aspects
of the enterprise, some directly and immediately, others
by a series of repercussive effects. Clearly, an awareness
of as many important considerations as possible and their
relative significance to the business is necessary for its
most successful direction. Certain elements are normally
more critical and indicative of the company's state of
being and direction of development, but any consideration
can become a preeminent concern. Planning starts, therefore,
with the <u>representation</u> of the business organism in being.
This representation is extrapolated or projected into various
future stages in accordance with trends and objectives. It
reflects significant events and decisions as they occur.[1]

This apparent close relationship between public planning

and corporate planning would seem to indicate that relationships

and linkages would be fairly easy to identify and develop. In

point of fact, this has not been the case. This condition arises

for a number of reasons: (1) most of a corporation's planning is

considered proprietary and specific information on products or

processes becomes carefully guarded by the corporation which

produces it. (2) a long history of social and political antagonism

towards public planning has created an inertia vitiating against

the establishment of these efforts within the public sector.

(3) the necessity for government control--and planning has been a

necessary of these control mechanisms--has antagonized various

aspects of the corporate and industrial world. (4) the effects of

---

[1]Melville C. Branch, <u>Planning: Aspects and Applications</u>
(New York: John Wiley, 1966), p. 253

long-range planning have not always been established as worth the

effort involved. (5) the purposes and philosophies underlying the

long-range planning effort have frequently been different both for

various kinds of industry and various governmental purposes.

(6) the role of government is frequently considered to be one of

information collector rather than decision maker and/or regulator.

(7) the influence of federal funding on the direction of various

industrial development--especially through military and space

research--has had a direct effect on lessening the distance between

public and corporate planning. (8) the exchange of expert knowledge

and developments between industry and government including the

increasing frequency for personnel to move among government, industry,

and education, has tended to help develop a common ground for

planning activity.[1]

<div align="center">

The Structure of the Long-Range

Educational Planning Unit

</div>

This planning unit should be established and dedicated to

the task of comprehensive, long-range planning; therefore, the dis-

cussion which follows will not necessarily indicate the type of unit

---

[1] See Factors Affecting Research and Exploratory Development
(Cambridge: A.D. Little, April 1965) and Dean Morse and Aaron W.
Warner, eds., Technological Innovation and Society (New York:
Columbia University Press, 1966).

which might be established for other kinds of planning, such as
economic analysis, curriculum, or business management. Furse finds
that in the state educational agency this long-range, comprehensive
planning unit becomes a _technical planning arm_ for the state plan-
ning mechanism and provides _leadership_ and _planning assistance
services_ to other educational agencies.[1] Culbertson in a similar
vein lists six functions which will be performed by an effective
state educational planning agency:

> 1. Determining through analysis and assessment those
>   educational objectives for a state which should
>   receive highest priority for given time periods;
>
> 2. Developing multi-year master plans....
>
> 3. Creating various program alternatives designed to
>   achieve high priority objectives, performing cost-
>   benefit analyses of these alternatives, and translating
>   the results into specific proposals;
>
> 4. Assessing state programs of financial support in order
>   to determine their adequacy for ensuring investments
>   deeded to achieve educational goals and when necessary
>   developing legislative proposals to correct inadequacies;
>
> 5. Examining school district, intermediate,and state
>   department structures in order to determine their
>   adequacy in relation to achieving established educational
>   objectives;
>
> 6. Serving as an interpreter of quantitative data on educa-
>   tion and of important state and national studies which
>   bear upon and have implications for educational
>   planning.[2]

[1] Furse, _op, cit._, p. 24.

[2] Culbertson, _op, cit_, p. 280.

Brooks indicates that the "function of a planning unit is to coordinate the activities of planners in such a way as to provide for effectiveness and efficiency in arriving at solution information relative to the following problems:

1. To define and to delimit the nature of the problem to be investigated.

2. To secure and maintain cooperation of appropriate groups, organizations, and agencies in the planning process.

3. To coordinate the activities of the individuals engaged in a planning process.

4. To keep the planning process moving.

5. To maintain documentation of activities, supervise or produce the final report relative to the given problem, including the recommendations for action, and delineate specific recommendations for evaluating the procedures to be followed.

6. To coordinate the evaluation procedures to be followed in determining effectiveness of implemented courses of acting.[1]

While the following list is not considered exhaustive, the Institute For State Education Agency Planners at Mankato suggests the following outcomes should guide the establishment of the planning unit:

1. A management information system

2. A state plan for vocational education

---

[1]Brooks, op. cit., pp. 16-17

)

3. A state plan for special education

4. A plan for agency "self-renewal"

5. A PPBS plan

6. A plan for adopting a packaging concept for the allocation of federal and state funds

7. Strategies to meet special problems or for implementing programs

8. Establishment of priorities for agency

9. Establishment of priorities for allocation of resources [1]

When the planning mission was established in the New York

State Education Department, the challenge for the Department

planners was stated in terms of the following considerations:

(1) how to strengthen the capacity of the entire education system

for change; (2) how to stimulate local education systems to become

much more responsive to local needs; (3) how to help the state educa-

tion department provide increased leadership and supp . + for change

in education; (4) how to help local, federal, and state authorities

coordinate their efforts more effectively in the accomplishment of

clearly defined overall goals; and (5) how to help educational

---

[1]Institute for State Education Agency Planners, A Guide
to Planning Programs (Mankato. Minnesota: Mankato State College,
Planning Guide Series, Guide #1, June 1969), p. 45.

agencies at all levels increase the impact of their efforts so that
there is a growing sense that intentions and plans can indeed
be translated into tangible, measurable results.

This writer has suggested the following functions for an
educational planning agency: (1) the development of long-range
comprehensive plans; (2) the development of plans for one, five,
ten, and twenty years; (3) the development of models for planning
(including the explication of alternative futures and trade-offs
based on them); (4) the development of innovation and implementation
models, especially for broad-based changes required by new and
comprehensive planning; (5) undertaking a training function in the
need for and the techniques of comprehensive, long-range planning
(both within the SEA and other units concerned with planning--the
legislative branch as well as local school districts); (6) the
determination of the effects of extra-educational developments on
the nature of the education system; (7) the establishment of _planning_
information system (based on the information requirments for achieving
the above tasks); (8) the determination of appropriate responsibilities
and organizational relationships with an evaluation mission, the
control function, and the research "universe" affecting educa-
tional development; (9) coordination and interrelation of "area"
plans, i.e., financial projections, construction schedules,

curriculum models, etc.; (10) consulting and advisory role to the
departments of the state educational agency and to local and
intermediate school districts (and other agencies concerned with
long-range comprehensive educational planning).

This list summarizes the functions described by the brief
literature on educational planning. Note that most comprehensive,
long-range educational planning has developed in the state educa-
tional agency or within a planning branch of the governor's office.
This does not vitiate the responsibility of a local educational
agency (or of appropriate regional agencies) for similarly develop-
ing comprehensive planning. It simply indicates that at present
funds and personnel have gravitated to the state educational agencies.
While a large city school system would find its resources permitted
the development of a separate planning mission, the average school
district would probably not be able to support such a function,
even while acknowledging its value.

A comprehensive planning office should procure broad spectrum
"generalists" for the senior positions, and this orientation towards
planning is more significant than the mixing and matching of
particular skills. In fact, personnel training in the various
planning skill areas are in extremely short supply and the director
of planning missions should anticipate the need for extensive

training of the basic staff. Since skills are in short demand, the
planning office may serve as a clearinghouse for extra-agency
contracted planning. The assigning of planning tasks to research
organizations, educational industries, or capable university struc-
tures recommends itself not only as a means for obviating the person-
nel shortages but also as a means for insuring broad expertise and
communication outside the agency. The planning office, however,
bears the responsibility of insuring the suitability of these
contracts by generating the planning needs. The office must also be
responsible for the comprehensiveness of the planning effort, for
the usability of the product, and for reporting procedures free
from bias. Within this framework, the assigning of planning missions
outside the agency can provide a more liberal and more broadly gauged
view than would be possible within the agency as the result of even
normal organizational constraints. At the same time, however, it
must be stressed that "planning itself should not be contracted out.
Planning cannot be done to or for an organization; it can only be
done by the organization itself."[1]

---

[1] Ackoff, op. cit., p. 132.

149

Organizational Relationships and

Establishment Problems

Based on this investigator's experience assisting the
establishment of a planning office within the U.S. Office of Educa-
tion and through a review of the literature, the following consider-
ations in the establishment of a planning function were considered
to deserve attention:

Develop an autonomous mission clearly separate from the
decision making process. - This paper finds a clear distinction
between the planning process and the control process, and it should
be maintained in the establishment of a planning office. Failure
to do so may prevent the development of adequate long-range view-
points and the ability to evolve alternatives to present management
procedures.

Protect the planning office from inappropriate activity
such as report preparation, "crash assignments," and short-range
or narrow gauged studies and position papers. - A planning unit,
once established, can be easily victimized by a large organization,
especially one operating on a minimum of resources. The director
of planning and his staff become useful targets for "crash" projects.
To obviate this problem an understanding of the planning mission
must be developed on the part of all executives.

Promote and establish appropriate inter- and intra- agency
feedback mechanisms. - The best communication channels are probably
the informal ones of interest and expertise. The planning director
and his staff should make every effort to become familiar with these
informal processes within the relating to the organization. Staff
linkages from the planning organization to extra-organizational
programs should be encouraged. This means that planners will be
members of task forces,. staff committees, and other informal and
task-oriented groups in the organization.

Encourage and support by leadership of the planning staff
maximum inter-staff communication, collaboration, and interaction. -
This requirement suggests that a primary mission of the planning
staff should be the organizational development and human-relations
training function. An analysis of staff functions and development
should be an on-going process in the planning office, and this
function should be related to the larger organization. Again, the
largest number of people who can reasonably be involved in the
policy design process should be encouraged by the planning office.
Procedures for these considerations should be developed early.

Disseminate information to the agency, the departments of the
organization, and outside the organization. - Comprehensive, long-
range educational planning activities are sometimes not only viewed

as esoteric but as limited to a small number of "in-members." This

concern can be obviated by regular briefings both to the chief

executive and his staff and to all members of the agency. Bulletins

and other information on the activities and achievements of the

planning office should be issued regularly. In addition, the

planners represent a strong resource for speaking to local associa-

tions and others concerned with planning and should be utilized for

these purposes.

The Comprehensive Educational Planner's
Characteristics and Qualifications

The characteristics and qualifications of the comprehensive

educational planner will form a basis for defining the qualifications

of the education-industry planning consultant. The literature does

not offer great support for the ideas presented in this section,

perhaps because the role of comprehensive, long-range educational

planner has only recently been defined. The following section,

therefore, is, in part, conjecture based on the opinions of selected

writers and the writer's experience. In discussing the "ideal systems

engineer," Hall specified four primary personal characteristics for

this individual:

> First comes the faculty of judgement, of sound appraisal with
> complete objectivity. Second, creativity is so vital a part
> of the systems engineering process that a vigorous imagination

is essential. Third, a systems engineer must have facility in
human relations, not just the neutral ability to "get along"
with people, but the positive attributes of leadership, tact,
diplomacy and helpful concern so essential in effective team-
work. Fourth, since his conclusions are valueless until
convincingly transmitted to others, and since he must act as
a broker of information, the systems engineer must have a gift
for expression--oral, written, and sometimes graphic.[1]

If the comprehensive, long-range planr is seen as a change

agent, it would be advisable for the individual to possess this

range of knowledge described by Bennis:

1. Conceptual, diagnostic knowledge cutting across the
   entire sector of the behavioral sciences

2. Theories and methods of organizational change

3. Knowledge of sources of help, and

4. Orientation to the ethical and evaluation functions
   of the change agent's role.

In a similar vein Jung, writing about the trainer change agent

role, indicates that this person should possess three kinds of skills:

problem-solving skills, interpersonal skills of relating, and inner-

personal learning skill.[2] Furse has cat loged a number of technologies

and specialities which the comprehensive planner should possess

within three categories:

---

[1]Hall, op. cit., p. 87.

[2]Charles C. Jung, "The Trainer Change-Agent Role Within A
School System" Change in School Systems, op. cit., pp. 100-101.

Group I .   Training related to organizational/procedural
             mechanisms

Group II .   General comprehensive planning technology

Group III.   Technologies "keyed" to steps of a problem-
             solving model.

Furse's analysis represents the most comprehensive statement of

skills, including such techniques as operations analysis, manage-

ment development, contingency planning, brain storming, and

simulation. This list does not suggest that one individual should

possess those skills; rather that they should be made available

to the planning effort.[1]

A clear concept of the comprehensive, long-range planner

has been provided by Dr. Merlin Duncan, former director of the

Mankato Institute for State Agency Planners and now director of the

Institute for Local Agency Planners at the University of Alabama.

In response to the question, "What should a comprehensive, long-

range educational planner look like?" Duncan suggested the following

abilities and traits of character:

1. This person should have the ability to fantasize. He
    must be able to dream about the future and to conceptualize
    new worlds.

2. The person must have the ability to use his ability to
    fantasize, (he is not simply a dreamer; he is a
    creater of new realities from dreams).

Lyle O. Wright, Developing Comprehensive Planning Capability
in State Education Agencies, Bernarr S. Furse, ed., (Salt Lake City,
Utah: Utah State Board of Education, 1969), p.26.

3. The planner must be aggressive in his intellectual
    relationships. He must be an active thinker, capable
    of trusting his abilities and broad in his intellectual
    activities.

4. The planner must have an adequate evaluation of his own
    ability to produce. He must be aware of his strengths
    and limitations, but he must see his production of plans
    as viable mechanisms for change and growth.

5. The planner must be politically oriented and understand
    social systems and subsystems which he hopes to plan for.

6. The planner must recognize the distinction between
    external and internal planning. In other words, he must
    be able to establish the parimeters of his planning
    mission and the limits of his organization.

7. The planner must have the ability to understand his role
    as a planner in an organization and not to overstretch
    the boundaries of his planning role so as to confuse
    this role with the decision-making authority which must
    rely on his influence.

8. The comrehensive, long-range educational planner must
    be a generalist, comfortable in moving among many
    fields of knowledge and organizations.

9. This planner must have the ability to look at himself
    and his organization in a realistic way.

10. The planner must be super conscious of his personal
    relationships within his own organization and the
    linkages from his organization to others.

11. He must understand that his plan is based on the informal
    organization before it can then be translated to the
    formal organization.

12. The planner should be knowledjeable in finance and the
    interrelations between the budget and the program.

13. The planner requires a knowledge of history and the
    ability to see his organization in terms of his milieu.

14. The planner's approach to planning must account for his philosophies and that of the decision-maker's in the organization. There must be a consonance between plans and basic philosophies within this society and those held by the planner.

15. The planner must be acutely aware of the needs and personalities of his colleagues, his superiors, and others to be affected by a plan. From this awareness, he can create plans in which everyone wins.[1]

The comprehensive, long-range educational planner appears effectively defined as a generalist, an individual who can operate comfortably at the philosophical level, while maintaining an action orientation, and who has derived his training and experience from a number of disciplines. The development of such individuals within the field of education has been difficult. Indeed, Branch states that "no educational program exists at the present time that emphasizes comprehensive planning as a field of study. The first and only effort in this direction was the program of Education and Research in Planning at the University of Chicago."[2] He points out, however, that education in functional planning is usually a part of the parent field of study. Curle traces various programs related to the development of educational planners and finds these relevent:

---

[1] Recorded during a conversation between Merlin G. Duncan and the author, February 25, 1970.

[2] Branch, op. cit., p. 274.

preparation for economic planning, technical preparation in both

educational and human resource development planning, university

programs in comparative education and allied subjects, and some

university programs in subjects outside the field of education.[1]

The design of programs for comprehensive long-range educational

planners has been undertaken at Mankato and at the University of

Alabama. Mankato brings together people from state educational

agencies for programs of training and problem solving. It is

designed to assist experienced professionals in the rapid development

of skills in this field. The program at the University of Alabama

resembles a graduate degree program, and results in the award of

the Ph.D. At Alabama the prospective local educational agency

planners receive training in five basic training areas: physical

environment planning, area analysis, government administration,

regional economics, and educational planning (including human resources,

cost planning, quality educational planning, and planning educational

objectives).[2]

---

[1]Adam Curle, Problems of Professional Identity: An Examination
of Training for Human Resource Development and Educational Planning,
Occasional Paper #6, (New York: Education and World Affairs,
July 1968), pp 33-42.

[2]Paul Orr, "Local Program Planners: Their Preparation and
Function," paper for the Institute for State Educational Planners,
Mankato State College, Mankato, Minnesota, October 17-25, 1968.

Although industry does not provide any substantive programs

for training educational planners, such organizations as the American

Management Association are beginning to develop short-term programs

for training administrators in educational planning skills. While

there is a general exchange of personnel from industry to educational

executive positions, and presumably this results in the transfer of

some planning skills, the field of comprehensive planning has not

yet been effectively enough developed so that a common program exists.

Industry does, however, provide systems analysts, computer technology

resources, systems engineers, marketing and financial specialists,

and other management specialists for the planning process. These

are important contributions, but, like the school system, industry

is searching for comprehensive, long-range educational planners.

IMPLICATIONS FROM THIS ANALYSIS OF PLANNING

This brief analysis of the long-range comprehensive educational

planning process provides a framework for developing the expertise of

the education-industry planning consultant. As will be indicated,

the consultant role generates directly from the need for assistance

in these kinds of planning activities. Interactions with education

and industry will evolve through the processes discussed in this

chapter. The implications from this analysis can be organized in relation to two major ideas:

The Focus of Planning

Hoos, in her analysis of the California systems studies, concludes that system design engineering will require great modification and refinement before it becomes useful for public problem-solving.[1] This statement, in part, summarizes the "state-of-the-art" in planning. So far, planning has concentrated on components and subsystems, rather than on the exceedingly difficult task of conceptualizing the total system. Effective, comprehensive, long-range planning must begin with an operational view of society, followed by a definition of education, and then followed by an understanding of the institutional setting in which education functions. Educational planning must come to grips with an uncertain future. Howsam feels that the "major pitfall facing the present (or any) generation of planners is its built-in tendency to view the future in frames of reference suited to an already outmoded present and past." He finds the following 'planning pitfalls' which must be avoided:

---

[1] Ida R. Hoos, "A Critique on the Application of Systems Analysis to Social Problem," (Berkeley: University of California Space Sciences Laboratory, Social Sciences Project. Mimeographed, May, 1967) p. 14.

1. Planning for a world that no longer exists

2. Assuming that a problem is the same as one encountered in the past, but merely bigger

3. The solution to a problem merely requires a larger "dose" of remedies previously utilized

4. Excessive reliance on a single approach to the solution of a problem

5. Letting others determine what changes should be made in education

6. Failure to recognize to take into account, changes taking place in the role of education [1]

Planning Needs at the Present Time

The greatest need for planning at this time appears to be the development of improved theory. Planning must be conceptualized as a comprehensive, long-range process in such a manner that linkages between education and other areas of society can be developed. The material in this chapter has suggested one qualitative methodology for arriving at such a theory, The problems of evolving such a theory remain exceedingly complex. Most planning efforts, especially in the field of education, have sought to proceed and to develop

---

[1]Robert B. Howsman,"Problems, Procedures and Priorities in Designing Education for the Future," Cooperative Planning for Education in 1980, Edgar J. Morphet, ed., (Denver: Designing Education for the Future: An Eight State Project, January 1968) pp. 83-93.

quantitative and objective paradigms either based on extant philoso-

phies or totally ignoring the necessity for philosophical clarifica-

tion. Schlesinger expresses this difficulty:

> Analysis cannot bridge the gap between irreconcilable
> objectives. At its best, analysis can shed some light
> on the costs of accepting one objectives at the expense
> of others. But there is a danger that analysis may help
> to disguise fundamental choice problems as efficiency
> problems. Analytical techniques have been most successful
> in obtaining efficient operation through the compromising
> of several objectives. But some objectives are not sus-
> ceptible to compromise, and such objectives could easily be
> ignored in the simply-minded quest for efficient solutions.[1]

Lest it be assumed that these problems are simply ones of

omission, the perspective offered by Weinberg seems worthwhile:

> The technologist is always appalled by the difficulties
> faced by the social engineer: To an engineer even a small
> social change by inducing individuals to behave differently
> is always harder even when the change is rather neutral or
> beneficial...By contrast technological engineering is
> simple; the rocket, the reactor, and the desalination plants
> are expensive to develop, to be sure, but their feasibility
> is relatively easy to assess, and their success relatively
> easy to achieve once one understands the scientific princi-
> ples that underly them.[2]

Weinberg's solution to this complexity is the concept of the

"technological fix" applied to social problems. This kind of fix

"accepts man's intrinsic shortcomings and circumvents them or capi-

talizes on them for socially useful purposes. The fix is therefore

---

[1]Alvin M. Weinberg, "Can Technology Replace Social Engineering?"
Atomic Scientists, December 1966, p. 44.

[2]ibid.

161

eminently practical and in the short-term relatively effective."
The difficulty with the technological fix, however, is precisely
that it offers a technological rationalization for the cut-and-fit
methodology or "add-on" processes of educational planning and change
which seem to continue ineffective. If the problems of education
are to be ameliorated over the long haul, it will be necessary that
comprehensive, long-range planning missions be developed.

CHAPTER IV

THE EDUCATION INDUSTRY PLANNING CONSULTANT

INTRODUCTION

Chapters II and III attempted to show that problems among
industrial and educational organizations result from a lack of
commonality in conceptualizing and applying long-range, comprehen-
sive planning. There is a growing recognition, however, that
elements of education and industry will require more effective means
of interaction than previously, if broad-based technological educa-
tional systems are to be effectively designed. Industry, as it
makes a direct thrust on the curriculum and instructional areas on
education, must interact effectively with school designers and admin-
istrators, who, in turn, must be aware of the limits imposed by
the structure of the schools. One possible way of achieving effect-
ive linkages among education and industry is provided by the
education-industry planning consultant. This chapter will attempt
to define this role and its potential for contributing to the solution
of these planning problems.

162

169

SOURCES OF THE ROLE

The study of technological innovations in education, and other broad-scale educational change, makes clear that "total system planning" has seldom been considered. This condition became exceedingly evident to this investigator as a result of participating in an earlier study.[1] There appeared to be a need for an independent consultant who could facilitate the problems in communication arising from the basic difference in the organization of education and that of industry. As Simon suggests:

> Organizations are formed with the intention and design of accomplishing goals; and the people who work in organizations believe, at least part of the time, that they are striving toward the same goals. We must not lose sight of the fact that however organizations may depart from the traditional description,...nevertheless, most behavior in organizations is intended rational behavior.[2]

One potential solution for insuring the effective planning of industry and education is the development of a <u>common ground</u>

----

[1]W.P. Kent, W.A. Le Baron, and R.M. Peterson. <u>Feasibility of Using an Experimental Laboratory for Identifying Classroom Multi-Media Problems and Requirements</u> (Falls Church, Virginia· System Development Corp., Final Report, U.S. Office of Education Contract: OEC 1-7-071143-4491, June 1968).

[2]Herbert A. Simon. <u>Research Frontiers in Politics and Government</u> (Washington, D.C.,: 1955), p. 30, quoted by Chris Argyris, "The Individual and the Organization: Some Problems of Mutual Adjustment," <u>Administrative Science Quarterly,</u> II (June 1957) 7.

which will facilitate the free exchange of id as and techniques
between the partners for educational change. Industries which are
concerned with the design and production of parts, components, or
systems of education would communicate through the vehicle of this
common ground with the operators of the public school systems.

A consultant of this nature represents only one alternative
to the problems of education-industry relationships. He represents
a third party who may perform important functions in the planning
and development process. This background provoked the development
of the consultant role.

Education-Industry Use of Consultants

Various prototypes of the consultant role have assisted the
development of the education-industry planning consultant. Industry
has had a long tradition of using outside consultants. The public
schools, however, appear to have limited their use of consultants
in the areas of curriculum and instruction, but there seems to be an
increasing acceptance for their·services. Certain kinds of industrial
consultants have found wide acceptance among school people.
Especially popular have been those persons who after a product was
sold have taught teachers how to use the product, but this type of
consulting relates to the sales process. The planning consultant
represents a new role which draws on these earlier activities.

Consultants may be grouped into several major categories which suggest their knowledge and purpose. These following groups established for the purpose of this investigation, are not mutually exclusive; rather, they indicate how and why education and industry have used consultants although under different conditions:[1]

Outside Experts. - Outside experts are used to fill gaps in the organization's knowledge base. They either represent a limited or highly specialized resource, or their skills are required less than full time by the organization. Among outside experts frequently used by education include systems analysts, computer programmers, specialists in educational finance and cost accounting, lawyers, psychiatrists, and design specialists. These skills are not only in short demand, but these specialists are usually unwilling to be employed full time by a school district or to settle in locations away from central cities.

Management Consultants. - This term defines a general category which includes a consultant in any area relating to the development or improvement of the management processes and functions. He may apply a special expertise or he may be a generalist concerned with analyzing problems. The primary use of management consultants

---

[1]This description was developed in conversation with John Harris, Senior Social Scientist, System Development Corporation and Joe Bangiolo, Senior Systems Analyst, System Development Corporation.

)

rests on the "outside observer" (or third person) relationship with the organization. Sometimes, the organization employs persons possessing the skills of the management consultant, but the consultant can remain detached from the immediate operation. Management consultants frequently assist in the development of improved management and operation, but they do not usually relate directly to the design or implementation of new curriculum processes.

Change Agents. - A new form of management consultant, the change agent, is concerned with organizational development and relies heavily on behavioral sciences, human relations, and intergroup communications skills. These consultants are concerned with changing organizational purposes, structures, and means of communications to meet new requirements for effectiveness and efficiency arising from forces outside (as well as inside) the organization. While the management consultant concerns himself with the improvement of some function within the organization, the change agent seeks to improve the organization's overall design. He is concerned with the structure of the organization which will best promote appropriate behavior in people. Over the past 20 years the application of the change agent approach to industrial problems has been fairly well accepted. Their use in school districts is finding increasingly popularity, although the nature and development of the role remains

well accepted. Their use in school districts is finding increasing
popularity, although the nature and development of the role remains
somewhat controversial.[1]

Legitimizers. - The legitimizer, because of his personal
position, knowledge, reputation, or "connections," can provide
necessary political support for the establishment of new ideas or
processes. This support is frequently required when funds must be
sought from foundations or government agencies for either the develop-
ment of a new product or installation in the public schools.
Legitimizers are used to review projects, to assist with their
design, and to provide the necessary "superstructure" relationships
with the social, professional, and economic power structures. Many
legitimizers do not perform a consultant function: They serve only
through an interest in a project and lend the prestige of their
position to it. Other legitimizers find that the time commitment
which they must make to a project and their desire to adequately
review and critique it prior to lending their support require that
they function in a consultant capacity.

---

[1]Edgar H. Schein, and Warren G. Bennis. Personal and Organ-
izational Change Through Group Methods: The Laboratory Approach
(New York: John Wiley, 1966).

Outside Evaluators. - Outside evaluators may include the
auditing and operational aspects of the organization, as
represented by the CPA. Evaluators use information developed by
the operation as a basis for judgement following the operation.
Some formats are predesigned to meet legal and fiscal regulations,
but program evaluation is sometimes based on the personal skills
and insights of the outside evaluation consultant. If a program
of evaluation has been effectively designed at the outset, the work
of the outside evaluator functions in support of the internal eval-
uation efforts by adding a third person review and by relating
specific programs to others resembling it. If these conditions
accrue, the use of an outside evaluator can be significant.

Another form of consultant use was mentioned by a respondent
to the education-industry planning consultant model developed in
this chapter. He suggested that consultants frequently serve to
provide a temporary arm of a staff function within the institution.
This situation occurs because the staff has more work to do than it
can handle. Consequently, consultants form a "work pool," a
sophisticated management "Kelley Girl Service." It is important
to emphasize that in one sense these individuals are not functioning
in the consultant role because they are functioning in the same
manner as regular employees.

Weber and Blumberg, in their study, "Educational and Industrial Consultants: A Comparison," derive the following differences between the anticipations of educators and industrial people for the use of consultants:

1. Those who employed educational consultants put greater emphasis on academic credentials (expecting consultants to have a doctorate) than did those who employed industrial consultants (expecting the consultant to have only a bachelor's degree).

2. Those who employed educational consultants put greater emphasis on age (expecting a consultant to be avout 50) than those who employed industrial consultant (expecting a consultant to be about 35).

3. Those who employed educational consultants put greater emphasis on experience in educational fields (expecting the consultant to have at least 20 years experience) than did those who employed industrial consultants (expecting the consultant to have at least 5 years experience in industry).

4. Those who employed educational consultants expected the consultants to consult on long-term basis in which they would help the organization to deal with problem areas; whereas those who employed industrial consultants expected a consultant to come   solve a problem, and get out.

5. Those who employed educational consultants expected to pay consultants less ($75-$100 per day) than did those who employed industrial consultants ($100-$200 per day) (present rates for educational consultants would be $100-$300 per day and for industrial $150-$450 per day).[1]

---

[1]Wilford A. Weber and Arthur Blumberg, "Educational and Industrial Consultants: A Comparison," unpublished manuscript (Philadelphia: Temple University, 1966), as reported in a letter from Weber to the writer.

Studies of this type are extremely scarce, but it is help-
ful for developing a consultant role acceptable to both the industry
and the education group. Indeed it is this aspect of the consultant
model which will be hardest to design and yet most critical for
successful implementation.

Development of The Role Model

Since the literature in the field provides very little help,
developing a role model for the education-industry planning consultant
becomes the primary task. The role stems basically from these
considerations:

1. The education industry planning consultant represents
    a common ground between industry and education; there-
    fore, he must be able to communicate effectively with
    both education and industry.

2. This consultant functions to apply the techniques of
    education planning as derived from the broad literature
    explored in Chapter III to major problems affecting
    curriculum and instruction.

3. The individual who performs this consultant role will
    probably be a generalist whose primary skills rests in
    the areas of problem analysis, design, systems analysis
    and human relations.

4. The nature of the consultant's activities will require
    his placement outside the formal structure of the
    operating school district and outside the product oriented
    (product design and producing sections).

71

Based on the problem universe outlined in Chapter II and the
planning methodologies derived in Chapter III, the role model was
designed in terms of the following categories:

1. The consultant's role and functions

2. Educational qualification and experience

3. Organizational and contractural relationship

4. Inhibitors to effective consultant relationships

This investigator, through his work on the study referenced
by note 1, participated in a series of discussions which led to his
developing the idea for the education-industry planning consultant.
Over a period of time these ideas evolved into their present
organization. The design of a model seems reasonable, because
the related fields of industry-education relationships and educa-
tional planning appear to lack adequate theoretical understandings.
A first need is the development of a strong basis for prediction
and of models for such action. This condition recommends the use
of techniques which encourage the design and testing of models.

<u>A NOTE ON METHODOLOGY</u>

Techniques for the design and testing of unsure futures have
been reported by Olaf Helmer in <u>Social Technology</u>.[1] His approach

_____

[1] Olaf Helmer, <u>Social Technology</u> (New York: Basic Books, 1966).

called the "Delphi Technique," functions to apply some control to
the use of expert opinion and case study forms of social research,
so as to make possible the development of useful predictions on
subjective questions. The technique is applicable to questions
of prediction about future events or methods of meeting future needs
(as the education-industry planning consultant is predicted to meet
certain needs in a developing relationship).

Helmer reports various applications of the technique on an
experimental basis, and others have found it useful for predicting
future trends. For the purpose of this study, the following
conditions concerning application of the technique are applicable:

1. Helmer's research indicates that a carefully selected
   panel of 15-20 experts will achieve as effective a
   consensus as a larger group. (Consensus means agree-
   ment and movement towards the mean).

2. The method, however, requires that the experts report
   and consider individually. They may receive feedback
   from other respondents, but they do not debate or
   discuss the material.

3. The use of a predesigned model--as in the case of the
   prospectus for the education-industry consultant role--
   may be employed to save time and to codify earlier
   work before submitting it to a jury of experts. In
   this event, "it is of the utmost importance to assure
   each respondent of the desirability of any modifications
   of the model that he regards as imperative, lest the
   entire effort be devoted to 'the wrong problem.'"[1]

---

[1] Ibid., p. 15.

The methodology can be summarized as follows:

> The Delphi Technique eliminates the need for committee
> activity altogether, thus further reducing the influence
> of certain phychological factors, such as specious per-
> suasion, the unwillingness to abandon publicly expressed
> opinions, and the bandwagon-effect of majority opinion.
> This technique replaces direct debate by a carefully designed
> program of sequential individual interrogations interspersed
> with information and opinion feedback derived by computer
> consensus from the earlier parts of the program.... An
> inquiry into the reasons and subsequent feedback of the reasons
> adduced by others may serve to stimulate the experts into
> taking into due account considerations they may through
> inadvertence have neglected, and to give due weight to factors
> they were inclined to dismiss as unimportant on first thought.[1]

Specific Steps in This Study

The procedures used in this study follow, in general, the out-

line of the Delphi methodology developed by Helmer. Since the study

deals with a broadly conceived model, convergence towards the mean

will not be considered as the major finding; rather, a consensus,

predicting, by general agreement (or disagreement) with the model's

value, a viable alternative for dealing with specified problems,

is sought. Respondents are presented with the model of the educa-

tion-industry planning consultant in a fixed interview situation.

During the interview, various aspects of the model are emphasized

(e.g., the model specifies a generalist; there may be special

problems in establishing him). For the most part, however, the

---

[1]Olaf Helmer and Nicholas Rescher, "On the Epistemology of the
Inexact Sciences," _Management Science_, 6 (1959) 48.

respondent reads the prospectus and reacts to those aspects he

finds significant.

The respondents are requested to provide two kinds of

feedback:

1. Any comments on the model--directly to the investigator
   or later in the form of margin notes, cassette record-
   ings, or otherwise--which will indicate agreement,
   disagreement, modification, or needed change in any
   aspect of the model's design, subjective values, or
   purposes.

2. A short letter to the investigator indicating a general
   position on the model.

In this respect the feedback implicit in the Delphi technique

can be achieved. Each respondent reacts during the interview,

but he also has time for reflection and later comments. The results

of these interviews and the comments submitted by the respondents

will be reported in summary form as they relate to each aspect

of the model. Major modifications and changes in the model will

be included in the summary and recommendations. The letters

received from the respondents will be attached as an appendix.

Selection of the Respondents

The criteria for the selection of respondents included a

concern that they represent a broad geographic area including

Washington, D.C., the eastern coast, and the midwest of the United

States. Of the 15 respondents, four were unknown to the investigator

prior to the study, and he had met three others only on one occasion.
Except for a brief resume presented at the interview, these indi-
viduals were unaware of the author's experience or concern for this
field.

Selection of the experts must be such as to insure a broad
perspective on the problem and a broad spectrum of experience and
viewpoints. Generally, the experts should not be interlocked with
each other prior to the probe; that is, the use of predeveloped
consensus should be avoided. In the case of the present study,
the following criteria were used to select the members of the
panel:

a. Each has had experience in both education and industry.

b. Each has had experience as a consultant.

c. Each is a "generalist" within his range of interests and
    can be identified with positions and activities which
    indicate this orientation.

d. Each presently holds a position of authority and
    prestige within his organization which permits a broad
    range of exposure and opinion.

e. Each stands to gain something if the consultant role
    can be effectively (operationally) defined: that is,
    each recognizes the importance of improving methodology
    and finding new ways to challenge the area of problems.

f. Each respondent is familiar with, and to a great extent,
    contributes to, the emerging technological processes
    forcing change and development within the public schools.

g. Each respondent, while a generalist personally, can make
a unique (or special) contribution because of a profile
different from the other members of the panel.

All potential respondents were contacted by telephone and

were informed of the methodological approach being employed and its

presumed reasonableness. They were also asked to be available for

at least a one hour personal interview with the investigator. Each

respondent was also offered the opportunity to respond in a manner

comfortable to his style; by marginal notes, by dictating in a

cassette, or through extended discussions with the author. Without

exception, individuals asked to function as respondents expressed

great willingness to do so. In one instance, a potential respondent

from industry discovered that his schedule would not permit extensive

confrontation, although he agreed to m et with the investigator

briefly and to submit comments later at his convenience. This

interest seems to verify the strong feelings both in education

and industry that a more adequate means of communication among the

forces affecting educational change be devised, and it may have

indicated some predisposition to find the consultant role an effective

way of developing this area.

Only one respondent chose to comment without first reading

the role perspectus, apparently feeling that familiarity with the

investigator's preliminary efforts were unnecessary. Some of this

respondent's comments were valuable, but their basis as a reality

screen for the purpose intended is, or course, limited. Most

respondents spent longer time and greater energy analyzing the

preliminary model and suggesting modifications than had been expected.

One interview lasted over five hours and did not result in a com-

plete reading of the document. This readiness to respond emphasizes

the awareness among the respondents improvements in these areas.

The following persons served as respondents:

Dr. Frank Anderson, Director, Education Projects
Encyclopedia Britannica Educational Corporation
425 North Michigan Avenue, Chicgao, Illinois 60611
(Former Administrative Assistant to the Superintendent
of Public Instruction, Colorado; Director, Colorado
Small Schools Project)

Dr. Franklin Barry, Director, Research and Development Center
American Management Association, Hamilton, New York
(Formerly, Superintendent, Syracuse, New York, Public Schools)

Dr. Roger Barton, Associate Supertindent for Planning and
Research, Dallas,Texas, Independent School District
(Former Assistant Superintendent for Planning, Texas State
Education Department; Assistant Superintendent, Curriculum,
Corpus Christi; Director, Southwest Regional Educational
Laboratory)

Perry Crawford, Senior Systems Planner, Advanced Systems
Design Laboratory, IBM, Yorktown Heights, New York (Former
president, present member, Croton-on-Hudson School Board;
Director, Regional Education Center, Westchester County)

William Dudenhausen, Executive Vice-President, Laidlaw
Brothers, Publishers, River Forest Illinois 60305 (Former
teacher and principal, educational salesman and consultant)

Dr. Merlin Duncan, Professor, University of Alabama,
Director, LEA Planners Project (Former Vice-President
Mankato State College and Director, Institute for State
Agency Planners, Mankato)

James A. Fellows, Associate Executive Secretary,
National Association of Educational Broadcasters
1346 Connecticut Avenue, Washington, D.C. 20036
(Manager for planning, staffing, etc., of the Samoan Project)

Miss Julia Hamblet, Special Assistant to the Commissioner
of Education, Assistant Director, Right to Read Program,
U.S. Office of Education, Washington, D.C., (Formerly,
Director, Women's Marine Corps and Director of Training for
the Corps)

Dr. Jack Kleinmann, Director of Planning, National
Education Association, 1206 Sixteenth Street N.W.
Washington, D.C. 20036, (Former Director of Special Projects,
Assistant Director of Research, NEA)

Dr. Robert La Penna, Assistant Superintendent, Washington, D.C.,
Public Schools (Formerly, Pennsylvania School Administrator;
Chairman, Citizens Committee Task Force on the Passow
Report, Washington, D.C.).

Bertram Mogan, Director of Planning, U.S. Office of
Education, Washington,D.C. (Former Assistant for Planning,
Department of Defense)

Joseph H. Oakey, Director for Research and Planning
Niskayuna Public Schools, Schenectady, New York 13212
(Consultant for Planning, American Management Association,
Planning Consultant for the State of Colorado; Formerly
Engineer and Industry Manager)

Dr. Harry Phillips, Director, Division of State Agency
Cooperation, U.S. Office of Education, Washington, D.C. 20202

Dr. Mark Scurrah, Assistant Director, Center for Planning
and Innovation, New York State Education Department, Albany,
New York (Professor of Educational Philosophy, Ithica College)

Dr. Wendell Shackelford, President, Guidance Associates
(a Subsidiary of Harcourt, Brace) 22 Washington Avenue,
Pleasantville, New York (Formerly, teacher; formerly
director, Systems and Technology Division,Harcourt-Brace)

Dr. Wilford Weber, Assistant Professor, Syracuse University
Director, Center for Research on Teaching, Syracuse
University (Consultant to Teachers Corps, various school
districts)

DESCRIPTION OF THE MODEL AND REPORTS

OF THE ORIGINAL TESTING

The prospectus for the education-industry planning consultant

functioned to brief respondents on the substance of Chapters II and

III; and it contained the nucleus for defining the role. Each

respondent commented on the prospectus and offered general remarks

concerning characteristics, problems, or conceptual needs. This

feedback can be effectively reported by presenting the original

statement, including additional rational and justification, and then

indicating the significant aspects of the discussions concerning

that point.

Definition of a Consultant

In order to clarify the difference between a consultant and

other organizational relationships, a definition was posited as a

general framework for analyzing the special role of the education-

industry consultant and his function. The consultant was defined as:

186

A consultant is any non-permanent employee of an organization
hired to fulfill certain kinds of predefined tasks requiring
special expertise or role relationships which cannot effect-
ively be provided by a regular (including temporary employee
functioning as regular) member of the organization.

The intent of this definition was to focus on the non-permanent

nature of the relationship and its dependence on either special

expertise or role relationships. The definition was criticized by

five respondents, although one found it excellent. First, a con-

sultant is generally not hired to perform a specific predefined task;

an important aspect of his relationship is to help the organization

define that task. He clearly must approach any problem as defined

by the organization only as a basis for initiating the relationship,

and he must retain the freedom to redefine the problem and the tasks

related to it. These comments suggested adding the words: "or

redefine certain ill-defined tasks." Second, an organization will

choose to bring on a consultant based on the services required from

him. This meant to the five respondents that the ability of the

consultant to redefine the task (or to conceptualize the problem)

required initial definition prior to accepting the task. Unless

the consultant has the freedom to redefine his function, he will

be limited to the client's statement of the problem which may be

a detriment to his effective operation. Third, the consultant was

seen by one respondent as a kind of resource rather than as an

employee. The objection here is that the consultant functions in

a manner unlike that of an employee because his aims and goals are

different from those of the organization. Fourth, it was suggested

that the organization, when it approaches a consultant, recognizes

a need which it is unable to adequately describe, and for which it

is unable to name appropriate tasks to resolve. With these modifica-

tions--especially the necessity for the consultant to contribute

to the definition of the problem--this statement emerged as adequate

for the purpose of this paper.

Definition of The Education

Industry Planning Consultant

The education-industry planning consultant was defined as

follows:

> The education-industry planning consultant helps organizations
> establish and maintain effective working relationships among
> the partners in the educational development process through
> the application of comprehensive, long-range planning
> processes and the performance of facilitation, linkage, and
> brokerage roles.
>
> The consultant sees his major obligation as to the problem
> and to the improvement of education. His interest is vested
> neither in the perpetuation of the school system nor in the
> advancement of a given set of products. His pay-off is an
> effective working relationship between the participants.

182

The major problem with this definition was caused by the use
of the term, "comprehensive, long-range planning processes." How
long is long-range planning? This became a significant question at
various points during discussions with the respondents. The emphasis
here was on a role which would use planning techniques as a basic
methodology. Long-range planning, therefore, may encompass a brief
time period or a very long one, depending upon the requirements of
the planning mission. One respondent from industry commented,
however, that industry is not really interested in effective working
relationships unless effective means fairly quick and truly dramatic
sales." He pointed out that there are exceptions; for example,
Project PLAN has effectively organized the resources of industry,
education,and research organizations for the development of a
computer-based instructional management system. No profit from
Project PLAN is expected prior to 1972, permitting a development
period of approximately five years.

The working relationship among the education-industry partners
should include both educational research and development as an
appropriate continuum. The consultant then might join a project at
the research stage but would stay until such time as it had been
effectively implemented. The role should be a continuing one, and
the consultant's usefulness increases as he develops new linkages
and understanding with the various partners in the planning process.

190

For one respondent, the emphasis on the consultant role should be on this function as the neutral party in the educational development process.

The education-industry planning consultant is not so interested in his tools and techniques as he is in the problems he is asked to deal with. He selects and applies various aspects of the long-range planning process as they assist the development of communication. The consultant must be flexible not only in terms of techniques but also in terms of his ability to relate to the various partners of the education-industry relationship, who would perceive him differently because of their background and interests.

Relation To Other Consulting Roles

The education-industry planning consultant shares the chara-teristics of the consultant roles described earlier:

The Outside Expert: Since the skills for long-range com-prehensive planning especially in the field of education, are in short supply, the consultant can function as an outside expert who might be employed either by a school system or industry. Caution should be exercised to insure that his use an an expert is consistent with his function as the provider of a "common ground" between the organizations of education and industry. He might, however, effectively pursue this major task by contributing the special

184

expertise of planning within a management structure which perceives

planning as the method for improving organizational relationships.

A Management Consultant: Since the consultant works at and

with the highest levels of management, and since he must have access

to information about all aspects of the organization's purposes,

operations, and structures, the education-industry planning consul-

tant functions in ways similar to the management consultant. He

is not, however, concerned primarily with the improvement of a

single management function or with providing special insight on

management on operational problems.

The Change Agent: All planning implies change; consequently,

a planning consultant must be sensitive to his critical role as a

change agent. For these purposes the educational-industry planning

consultant will rely heavily on the field of organizational develop-

ment. He will frequently find himself performing communications,

group development, and organizational analysis tasks resembling those

of the change agent. In this particular instance, the consultant is

concerned with the interrelationship among organizations as well as

within a single structure. His function will, as a result, require

additional sensitivities.

The Legitimizer: The education-industry planning consultant

will be required to exercise great caution in using the techniques

of the legitimizer. Indeed, the primary difficulty with the estab-

lishment of the role may well be the feeling that the planning

consultant is simply functioning as an aid to the industrial

organization's sales motive. To counteract this concern, the

education-industry planning consultant must assure that he operates

primarily through the use of his special expertise, to develop

(in conjunction with the organization) planning models and programs

to assist management in the planning process. Indeed, the role of the

legitimizer seems inappropriate for the education-industry planning

consultant.

The Outside Evaluator: The consultant, as part of effective

planning, might preplan the evaluation effort in conjunction with

members of the organization. He might participate in the judgement

process to suggest changes in plans based on feedback from operation.

Two responders suggest that the relationship between the outside

evaluator and the consultant required modification, they were con-

cerned about the consultant's ability to exercise insights from

"outside" the project's scope since the value of the outside

evaluator is found through a vision unclouded by day-to-day operations.

He provides insight based on other experiences outside the value

structure of the operating organization.

The Need for The Consultant

The need for the education-industry planning consultant arises
from changes in the nature of industry-education relationships as
traced in Chapter I and from the new requirements imposed by
technological developments and systematic and logical planning.
Farris suggests four reasons to use a consultant:

1. Facts for decision making may not be available locally.

2. Facts may be available, but interpretive experience
   is lacking.

3. Experience from other places can be used locally.

4. Agreement cannot be reached on an effective alternati·e.[1]

One respondent pointed out an important advantage of the education-
industry planning consultant. He has a broad number of contacts and
expertise which results from his involvement with many different
assignments, and his mobility provides for a higher quality planning
service than might be available through local management. This
special expertise would be the primary motivation for a board of
education or industrial management team to seek outside assistance.
One respondent expressed concern that looking for outside assistance
not be interpreted as a vote of mistrust in the present administration.
This seems unlikely if management exercises reasonable propriety.

---

[1]Norman C. Harris, "On Being a Consultant," _Junior College
Journal_, 37 (April 1967) 9-13.

Special roles performed by the education-industry planning
consultant would include those of broker and linker. The consultant
could effectively contact, organize, and relate a number of pro-
duction organizations and educational organizations around a single
problem area. The problem might be evolved by a school system,
a consortium of school districts, or a major industry which was
desirious of becoming involved in more realistic educational planning.
In performing the brokerage and linkage functions, the consultant
might play a kind of "clearing house" activity, but the information
basic to this activity would be collected by other agencies. The
Educational Products Information Exchange (EPIE) provides a proto-
type of this clearing house agency function. The education-industry
planning consultant would rely heavily on these services, because
he would not have the time or the organization necessary to develop
these support functions. (A complete consulting service organization
however, would include both).

As an outside consultant, loyality to the problem can override
concern for maintenance of either the profit (or other industrial)
or the institution (or other educational organization) aim. This
particular point was emphasized by one respondent, because his
experience has indicated clearly that a concern for product or for
school system--frequently concern for self-could "get in the way"

of effectively discussing problems. As he indicated, most

educators or industrialists are perfectly willing to discuss any

problem except their own, but an outside consultant could talk about

the problem without being emotionally involved in it. In this respect,

he brings out not only third person rationale, but basic detachment

to the discussion.

The education-industry planning consultant role has been

generated by an analysis of present omissions and needs in the area

of these relationships. Many forms of expertise are available to

both educational organizations and to industries concerned with

servicing the educational organization, but information on these

agencies is not always available. In another respect, the regional

and the local response would vary according to the qualities of the

regular staff and their perceptions of problems in this area. One

respondent cautioned that the primary difficulty with establishing

the education-industry planning consultant would be that local

agencies most needing help would be those least able to recognize

their need for assistance. This concern led to generating the con-

tact and role establishment processes to be discussed later in this

paper.

<div align="center">Functions of the Consultant</div>

The primary motivation for the education-industry planning

consultant was the perceived need for services related to the

planning for components and systems of educational technology.
This overriding principal underlay the development of a system of
functions for the consultant.

The Role. - The role must be defined broadly enough so that
the consultant can function as a generalist while specializing in
the area of planning. A simple listing of functions may not adequately
describe the consultant's activities. For this reason, two different
approaches were undertaken. First, a list of functions which the
consultant either performs, or assists the organization to perform,
was developed to describe the parameters of the role. The following
functions were included:

1. The consultant provides a neutral context for problem
    analysis.

2. The consultant developes bridges for communications.

3. He supports discussions by making critical processes
    entries.

4. He assesses the impact of the decision processes used
    by the organizations.

5. He helps all parties recognize and deal with constraints.

6. He initiates discussions of mutual obligations and
    expectations in order to arrive at a smooth working
    relationship.

7. He helps discover appropriate resources and services
    and links these to the client agencies.

8. He helps develop feedback and evaluation procedures

9. He suggests necessary considerations oustide of the immediate decision area and predicts potential trouble spots.

10. He recommends alternative ways for viewing the situation restating the problem, or redefining the problem universe.

An eleventh function originally included in this list was stated as follows: "The consultant related industrial and military training developments to the general education market." This function was felt by all except two respondents to be outside of the role of the consultant. Two respondents indicated that this function would require a different kind of consultant because of the infor- mation required by the task, although the activity might be listed as a secondary or associated function. One respondent, in attempting to conceptualize the consultant's role, suggested that he functions to determine points of common agreement among parties and estab- lishes these as points of entry. He also functions to establish long-range points of conflict and helps develop current programs that will either eliminate or ameliorate the differences as the partnership begins to approach them. To another respondent, the consultant's most important function is "to ask the right question in the right way." The ability to perform this function sets in motion a process which forces people to think about the decision they must make. This respondent felt that a consultant would have

to do all of the things included in the basic analysis of functions.

He was joined by five other respondents who questioned, in one form

or another, how it would be possible for any consultant to perform

all these functions; this concern led to generating a second list

of functions which indicates the kinds of activities a consultant

may find himself involved in:

1. The education-planning consultant analyzes management
    problems related to decisions about technological imple--
    mentations and to the continuing operation of the new
    system.

2. He provides outside expert analysis of plans developed
    by school districts, industries, or other planning
    mechanisms.

3. The consultant reviews and evaluates research proposals,
    evaluation contracts, and other grant procedures employed
    by school systems and industries.

4. He designs solutions to delineated educational problems.

5. The consultant determines the reasonableness of con-
    clusions in terms of good working relationships and
    viable programs.

6. The consultant advises educational industries on their
    planning and development to meet the school market.

7. He reports on the success and problems of industry-
    education planning activities.

All respondents emphasized the importance of industry-

education planning activities and the consultant's role in reporting

successes and problems relating to effective planning and product

development. Great concern was expressed about statement number 6

and use of the expression "to meet the school market." It was

felt unamiously, by the respondents that the consultant would advis

the educational-industry on planning and development, but the direc

relation of the consultant to any aspect of the marketing process

was found objectionable by all the respondents except one. A

distinction should be clearly made between the consulting activity

prior to product development and marketing and those activities

which accompany sales. Both of these activities are reasonable,

and each is important to the success of a venture. The consultant,

as envisioned by the prospectus, would confront great role confusio:

if he functioned close to the market processes.

Another aspect of this marketing problem might be mentioned

One industrial respondent urged strongly that "there is no school

market." Each school district procures for itself the instructiona:

products which it requires. This may include text books, mediated

devices, or any form of instructional equipment. In this respect

a textbook publisher is not in direct competition with the manu-

facturer of auto-instructional devices, because both would be parts

of an effective instructional program. This concern prompted

another respondent to wonder about products industry ought to

produce, not simply for sale (i.e., to meet known needs) but to

meet needs based on judgement criteria other than marketing. In

other words, is the market responsive only to the felt needs of
educators or is deliberate planning being undertaken to assure
products which fit a changing and developing system? This area
appears an important crux in the effective establishment of the
education-industry planning consultant.

Secondary Functions. - For the consultant role to be effect-
ive by providing clients with a broad-based menu of services related
to planning, certain related activities must be provided for.
These secondary functions appear to fall within the parameters of
the education-industry planning consultant role, but they should not
be construed as central to the definition of the role. This con-
sideration is important, for these secondary functions, in and of
themsleves, could become full time activities for other consultants.
The education-industry planning consultant would undertake these
activities only as they related to the primary functions. Included
in this group are the following:

1. The consultant maintains information files and liaison
   with state and federal government agencies.

2. The consultant is familiar with requirements for
   proposal preparation and with appropriate government
   funding sources.

3. The consultant maintains a reference and resource
   file on training and education programs in the broad
   area of planning.

*. The consultant can perform a general program review within a local school district.

5. The consultant may advise on the establishment of planning missions for education and the operation of selected training activities required to help establish these missions.

6. The consultant may design a staff development program within the area of planning, organizational development, and communication skills.

The list originally included the following secondary functions: "the consultant may advise on the potential implications of proposed ventures." This concern was removed because of its relation to marketing as discussed earlier. As a result of his experience, the consultant may become aware of important new areas for development. He may discuss this information with clients or otherwise, but he will not act as an advisor on the establishment of ventures. Another secondary function, mentioned by one respondent, requires the consultant to work in the area of mental health. This respondent felt that frequently good staffs are so confused and upset by new planning concepts that someone has to challenge them to recognize their abilities for planning.

The areas of proposal preparation and governmental liaison were seen as extremely important by several respondents. One respondent indicated that a vast number of school districts and many industries simply do not know how to communicate with the

federal government for funding. Another respondent felt that these

areas would take on greater importance with less sophisticated

clients, and the education-industry planning consultant, unless

careful, would see his time consumed by this requirement. Since

becoming and staying informed on the intricacies of proposal pre-

paration and government contracting requires considerable effort,

the consultant would either require assistance in this area or .

would effect a liaison with firms which specialize in writing

proposals and procuring federal funding. Related to this was the

suggestion that the education-industry planning consultant might

want to provide an information service to clients on a more or less

regular basis. The idea of a newsletter or a similar vehicle

suggested itself as a means of staying in touch with clients and

prospective clients. This suggestion broadens the nature of the

consultant's organizational arrangement and indicates the need for

special services.

Limitations on the functions. - Since the education-industry

planning consultant emphasizes long-range, comprehensive planning,

various activities which the consultant may be asked to perform

could be detrimental to the successful implementation of his

role. The role emphasizes developing effective interaction

among elements of education and industry. These interactions will

196

be inhibited if the consultant is seen as co-opted by either the

industry or the school district for its own purpose. For this

reason limits on the role must be established. The following

functions appear inappropriate for the consultant:

1. The approval of individual plans, products, educational
    packages, or other educational products which do not
    result from a planning process involving the consultant.
    (i.e., product endorsement).

2. Advice and procedures for implementing a prepackaged
    learning on hardware system (or solution derived from
    another siutation), especially when no alternatives
    have been designed. (i.e., product marketing).

3. Any planning mission (or contract) which fails to
    apply a comprehensive, long-range planning orientation
    to the design of solutions.

4. An attempt to use planning as a justification for
    inadequate programs (based on insufficient resource
    allocations, or other reasons).

Reactions of the respondents to these role limitations was

enthusiastic. The functions of product endorcement and product

market were clearly seen as outside the consultant's functions.

One respondent suggested, that the education-industry planning

consultant might find himself being asked to develop a long-range

plan for a specific product or technological system believed useful

for education. The consultant might then undertake a planning

process which would determine the relationship between the product

and the school and point out changes which might be required in
both. This kind of product planning appears feasible within the
limitations placed by the role, but it would certainly not be a
primary function. The difficulty with undertaking activities in
this area becomes one of insuring that the consultant is not
contaminated by these activities. The success of the consultant
role will depend on the individual performing the role so that
potential clients are convinced that the consultant is neither wedded
to a single technology nor co-opted by the school district. To
assure that this condition does not develop, the consultant must
exercise careful judgement in selecting problems to which he will
relate and functions which he will undertake in relation to those
problems.

THE CONSULTANT'S QUALIFICATIONS:

EDUCATION AND EXPERIENCE

The qualifications for the educator-industry planning
consultant, both his educational background and experiences in other
areas should be directly related to the requirements of the role
and its functions. This concern suggests that the consultant will
require considerable experience in both the areas of industry and

education, especially a background in management and planning. In

order to explicate these qualifications in general terms, five

statements were presented to the respondents, as follows:

1. The consultant understands the traditions and the
    broad spectrum of the schools and is basically an
    educator.

    Twelve respondents felt strongly that the consultant
    should be basically an educator, because, as one
    indicated, "the whole damn wood-work is full of
    medicine men." Two respondents suggested that the
    consultant should not be basically an educator, but
    an individual who was able to relate to educators.
    This implied that teachers, school administrators, or
    other school district occupations were not a necessary
    form of experience. One respondent was concerned that
    without a background of educational experience, the
    consultant would find it difficult to achieve credibility
    in the educational sphere. This issue, of course,
    would be resolved only when the role is tested and
    the background of individuals is evaluated. The
    Weber and Blumberg study indicates that educators
    place a great emphasis on the credentials of prospective
    employees. For this reason it may be necessary that
    the consultant have had some educational experience.

2. The consultant can communicate with industries and is
    familiar with the new terminologies being developed.

3. The consultant possess insight about the communications
    process, behavioral sciences, human relations, and his
    role in effective interactions.

    One respondent modified this statement to suggest that
    the consultant not only posses insight, but also
    capability in these areas. It was his concern that
    while many persons possess insight, only a few, through
    special development and training are able to function
    capably. One respondent felt that this was the most
    important area of qualification for the consultant and

that his ability to function as an effective human
relations agent would determine his success.   This
concern provoked another respondent to emphasize the
necessity for knowledge of social science concepts in
approaching the problems of the consultant.   These ideas
were summarized by another respondent who felt that the
consultant should be familiar with the techniques of
planning and should be able to apply them to problems of
education in terms of the capability of the staff with
which he is asked to work.

4.   The consultant is familiar with the techniques of educa-
     tional planning and the problems of translating
     industrial experience to education.

     This statement caused difficulty for two respondents.
     One felt it carried the implications that "somehow it
     had all been done before," and the major issue was
     simply spreading effective practices.   Another respondent
     noted that the phrase assumed a positive value in the
     direction of this translation which he felt might be
     subject to question.   This respondent inquired also
     about other areas of experience which might be applied
     to education, among them, new learning from health
     sciences, agriculture practices, etc.   This comment again
     raises the problem of defining a sufficiently broad
     scope for the consultant without unwittingly dissipating
     his energies through failure to suggest effective
     limitations.

5.   The consultant is sensitive to the management constraints
     and requirements of the school system and of the educa-
     tional production industries.

     While many respondents emphasized the importance of this
     statement, one suggested that a consultant should be
     sensitive, but not too sensitive, to constraints and
     requirements.   The value of the role is the consultant's
     ability to see clearly that limitations on operating
     systems can be modified through effective planning.
     These general requirements appeared satisfactory to the
     respondents.   No major statement was added, and none of
     these statements was violently objected to.

Education. - A program of education for the consultant would

reflect a broad pattern of general and special studies. As was

indicated in Chapter 3, only two programs now exist for the education

of planners. Based on these programs, and other background in

Chapters II and III, the following areas of education are considered

important:

1. General education; including philosophy, humanities,
    and science.

2. Management and organization studies (behavioral siiences).

3. Special long-range comprehensive planning techniques.

4. Human relations, intergroup communications, and
    organizational development skills.

5. System analysis, operations research, or other specific
    planning processes.

6. Curriculum planning models, educational media planning
    and educational research and design.

7. Information processing systems, evaluation and analysis
    design.

8. Economics and political sciences with an emphasis on
    governmental planning for education (and institutional
    interrelationships).

9. Writing and other communications skills.

The intent of this "menu" of educational needs is to provide

a broad, general education consistent with the concept of the

education-industry planning consultant as a generalist. One

respondent felt the list should be placed in rank order. He placed

area number 4 in first position and considered numbers 3 and 7 as second in importance. The respondent felt that the program of education for the consultant might first develop a person able to communicate and then one highly skilled in planning techniques. Another respondent did not see an understanding of industry evolving through this list of educational needs. He urged that the consultant must understand the psychology of profit-motivated people rather than just all the problems of education. Two respondents hoped that a next step would be the development of a training program for the consultant, one suggesting that the program be developed in detail through the last two years of undergraduate work and the first two years of graduate study. Another respondent, however, emphasized strongly that _formal_ education was not enough. The education-industry planning consultant would require a particular set of _competencies_, regardless of how these might be learned. This respondent (from a university) was urging that experiences outside of the formal curriculum were an important part of the education required by the consultant.

Experience. - The education-industry planning consultant should be familiar with the differences in the functions of educational organizational and industrial ones. To achieve this, he should have gained experience through the following kinds of activities:

208

1. Teaching (public schools and/or other).

2. Other assignments within the public school organization.

3. Research and planning experiences, within a school district, another educational agency, or industry.

4. General planning activities for a variety of organizations.

5. Industrial or organizational experiences related to production.

6. Management experience, preferable in both industrial and educational organizations.

7. Specialized use of knowledge in major disciplines.

8. Consulting experiences with schools, educational organizations, and industry.

Again, one respondent felt the list should be organized according to priorities. He suggested that numbers 5 and 6 were most important, in that order. Another respondent felt that the list required greater development in the area of industrial experience, finding that it presently leans towards educational activities. A third respondent felt that despite any experience that a person might have, his primary usefulness as a consultant would be his ability to discuss a subject well with people who required information and feedback on their planning. In this respect "a track record" in the consulting business would be the most effective experience for the educational-industry planning consultant, and for this respondent any other experiences were considerably less important.

In summary, the education-industry planning consultant would require broad education and experience. Clearly, this education and experience cannot be measured simply through items listed on a resume. The effective value of the experience, coupled with the interpretations derived from it, will determine the effectiveness of the preparation for these consulting activities.

ORGANIZATIONAL AND CONTRACTURAL RELATIONSHIPS

The consultant maintains an integrity of function distinct from the production/market process and from the formal school organization. For this reason, he should be placed outside of the structure of industry and education, perhaps functioning as an independent consultant or employed by a consulting firm. Respondents suggested that the consultant might be employed by a foundation, a college or university, or perhaps a regional educational laboratory. These organizations, however, appear co-opted to certain educational orientations and seem less desirable locations for the consultant than an independent agency. This area will require further analysis.

The original prospectus presented a diagram which tried to show role and contract relationships between the consultant and industry and/or education clients. The diagram failed to communicate

FIGURE 9

THE CONSULTANT COMMON GROUND
BETWEEN EDUCATION AND INDUSTRY

THE
EDUCATION
INDUSTRY
PLANNING
CONSULTANT

INDUSTRY

EDUCATION
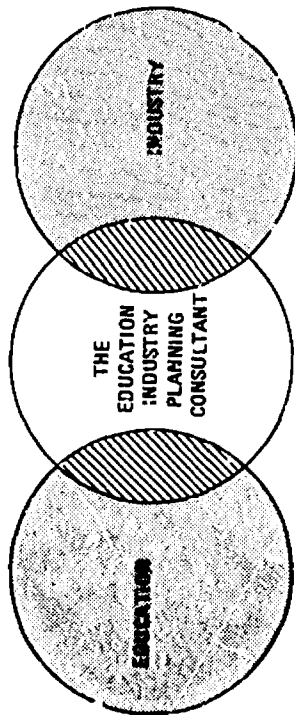
its intent for the respondents. It has therefore been eliminated

from this report and replaced by Figure 9, suggested by one

respondent: the overlap of each circle of the school and industries

circle with the consultant role states that his function derives

from each of these areas and, in turn, relates closely to the

activities of both areas. The space distinct from either organization

indicates that the consultant derives his special uniqueness from

additional sources. Note that the school and industry are integrated

only through the consultant role; their circles are neither contiguous

nor overlapping. This basic diagram expresses the intention of the

education-industry planning consultant relationship. It is a bridge

between two institutions based on the application of special expertise.

Potential Clients

The education-industry consultant might be engaged by the

following potential clients:

1. Industries involved in developing and marketing products
   relating to instruction and administration of the
   schools.

2. Legal school districts acting as program operators,
   planners, or in any way responsible for curriculum
   and instruction (but fiscally independent or free to
   enter into a contract).

3. Other school organizations concerned with curriculum and
   instruction (including private and parochial schools).

206

4. Corporations operating as the primary agent for the
   planning, development, implementation, and operation
   of components or systems which affect the curriculum
   and instruction of the public (or other) schools.

5. Government agencies (federal, state, local and regional)
   concerned with long-range, comprehensive educational
   planning.

One respondent was disturbed by the reference to marketing

products in statement number 1 and another urged that the consultant

not be interpreted as looking for business or new markets. It

seems advisable to rephrase this comment as follows: industries

involved in developing and planning educational products related to

instruction and administration of the schools. This restatement

appears to keep the flavor of industry's potential involvement with

the consultant, but avoids the marketing aspect. Insuring that these

relationships are maintained at that level will, or course, depend

on the integrity of the consultant. Another respondent suggested

that the education-industry planning consultant might be most

effectively used by consortia of school districts who were initiating

joint planning procedures for the implementation of broad-based

educational technologies. Indeed, the consultant could function

most effectively with such a group whether it was organized

independently or operating under the aegis of a regional laboratory.

Another respondent was concerned that perhaps the description

provided so far   was simply that of an educator who becomes a

consultant, and who then, because of special compentancies, makes

himself available to industry. This argument contains some validity,

but the present educator would only rarely have received the

broad-based training and experience in planning which would prepare

him for this role.

The method of engaging the consultant would vary according

to the purpose and the organization undertaking the engagement.

Kintzer and Chase suggest five steps in the process: These are as

follows:

1. The client would identify three or four consulting
    firms which might be useful in dealing with his
    problem.

2. The client would set forth in writing what he wants.
    (this statement may not permit adequate room for the
    problem analysis and identification function required
    of the planning consultant).

3. The firms representatives would be invited for a
    proposal discussion.

4. Each consultant or consulting firm would prepare a formal
    proposal including the following information: A statement
    of specific work, personnel qualification and staff,
    fees (fixed or maximum), estimated completion time
    (and presumably target dates for important events during
    the contract), billing information, expenses, number and
    type of reports and specific references from former
    employers.

5. The client would appoint a regular liason to work with the consultant during his tenure.[1]

These five steps adequately define the basic process for involving the consultant. The industry-education planning consultant may, through his own efforts, initiate consulting activities with various organizations. These activities would arise from mutual recognition and discussion of needed services and might be based on the following motivations:

Sensing a communication problem

Facing conflict within its own interdisciplinary team.

Needing feedback prior to public exposure.

Building entry and interaction models for working with the schools.

Presenting information to educational decision makers.

Te-ting its own assumptions about educators and their schools.

All respondents reacted negatively to three proposed sources of involvement between industry and consultant. These were: "finding its sales approach ineffective; developing the dimensions of a new education package; and looking for the handle on a new

_____

[1]Frederick C. Kintzer and Stanley M. Chase, "Consultants as Change Agents," Junior College Journal, 39 (April, 1969) p. 54.

)

. Finding their interactions non-productive.

Sharing dissatisfaction with a planning arrangement.

Sensing a lack of mutual understanding and trust.

Facing criticism from an uninformed third force.

Requiring mutual guidance on appropriate feedback and evaluation procedures acceptable to both parties.

Recognizing an educational situation to which both can contribute but needing a model.

Developing planning procedures and ground rules prior to contractural arrangements.

One respondent suggested that a community involvement, perhaps by a Chamber of Commerce committee, might find an outside resource such as the consultant useful as they determined whether or not to support school policies. Employment by such a group appears perfectly within the dimensions of the consulting role. Another respondent emphasized that the point of entry should be carefully investigated because it may be crucial for success whether the consultant was initially sponsored by industry or education.

Another question concerned the method by which the consultant might make it known that his services were available. Essentially, how would the consultant get across the idea that he could be useful to the partners in an educational planning process? This respondent felt sure that his school district, mutually planning with a major

industry, had effected a strong relationship, but their planning
would have been greatly facilitated by the use of a "non-sensitive
consultant."

The question of advertising the consultant to potential
clients was not considered in the initial prosepctus for the role,
but it deserves careful attention. Major educational consultants
advertise in educational and technology trade journals. The con-
sultant, through his activities with educational organizations
(writings, speaking, and consulting) becomes known to the educational
leadership. The consultant must assure that his publicity does not
indicate that he is particularly desirious of serving one element
of the joint planning process.

Contract Relationships

Critical to the success of the education-industry planning
consultant's role will be the nature of the contract relationship
developed between him and the client. Since the role envisions an
integrating function, some contract relationships may be developed
(and then funded) by the partners to a planning mission. This type
of contract would be ideal, but it suggests great difficulties for
the partners to the relationship.

The AASA Commission on Administrative Technology expressed
this concern about the use of consultants:

> Caution should be exercised in the selection of a
> consultant firm; this firm should have a real under-
> standing of the educational enterprise and be sensitive
> to the unique problems of the school system. The
> strategy may begin with the feasibility study. Here
> consulting help from a university (and few do this)
> or from private consulting agencies (only a few have
> staff competent to work in educational organizations)
> would be most usable...the feasibility study could
> reveal: (1) the nature of planning necessary (2) com-
> ponents of the organizations in which certain operational
> techniques could most readily be applied. (3) the
> extent of readiness and capability to the staff and the
> organization to implement the approach. (4) the
> inservice training necessary for existing staff.
> (5) the kind of additional staff needed. (6) the kind
> of results in terms of efficiency if a system were
> implemented (7) the cost to the school district.[1]

While these cautions seem reasonable, they appear to fix

emphasis on the negative aspects of the consulting relationship.

Generally a consultant (including and especially the education-

industry planning consultant) would investigate the desirability of

establishing a relationship. This initial contact would probably be

at no cost to the organization. It might be followed by a one or two

day visit to the organization on a _per diem_ and expenses basis. This

would provide the consultant and the organization a chance to meet

---

[1]AASA Commission on Administrative Technology. _Administrative
Technology and the School Executive_, Stephen J. Knezevich, ed.,
(Washington, D.C.: American Association of School Administrators,
1969) pp 112-113.

each other and to share perceptions of the problems and the potential

from the consultant relationship. Only then would the consultant

decide to undertake a long-range relationship with an organization.

(He might also decide through the process that he could not effectively

serve this organization). From the organization's point of view,

this method would provide an effective look at the consultant prior

to a long-range obligation and would prevent a large expenditure

before adequate working relationships had been established.

Within this framework, the consultant might function under the fol-

lowing types of contract relationships:

General Retainer. - By an industry or a school district

(or other) for purposes of consulting on questions of long-range,

comprehensive planning. Under such a retainer the consultant would:

Help evolve long-range plans and alternative statements
of problems.

Indications and strategies related to the selection
of various alternatives.

Would not market a single product or set of products.

Study the past uses of technologies to discover more
effective means of planning future uses.

Develop planning attitudes and skills (through inservice
training, etc.) within the client's organization.

Perform organizational development (and related activities)
within the structure of planning and implementing new
educational programs.

Specific Retainer. - For any of the above activities or in
relation to a particular situation. Such retainers should:

Involve the consultant at the outset.

Provide for a continuing relationship through planning,
implementation, and operation.

Relate the consultant as a resource, not as a com-
pensation for inadequate management.

Review and analysis contract would be limited to the critique
of efforts in the area of planning or implementation. This activity
would not involve a long-range relationship with the organization,
although it might provide an effective opportunity for the consultant
and the organization to confront each other. Assuming an effective
review, the organization and consultant might want to explore a
continuing relationship.

Site visit, review and evaluation contracts for a limited
duration and for a specific end product would be appropriate as they
relate to the development of the planning processes. The education-
industry planning consultant would avoid too great an involvement
in these activities. They are valuable for exposing the consultant
to new situations and operations, but they can detract from long-
range intensive involvements.

Training activities would include formal workshop and staff
development programs which the consultant might either design or
operate. Since his expertise is limited to the operation and estab-

lishment of planning processes in relation to program change, his
contributions in these areas should be similarly limited.

METHODS AND OPERATIONS

This section provides a brief introduction to the function
of the education-industry planning consultant as he undertakes the
task of establishing himself with an organization. As one respondent
pointed out, the focus is on getting the consultant into the organi-
zation and keeping him there on a productive basis. Every consultant
contact is different, and the effective consultant will vary his
approach according to the needs of the situation. The consultant
will choose among the following activities in developing and
continuing his relationship with an organization:

1. The education-industry planning consultant will establish
    an initial contact with an organization and undertake
    preliminary activities to:

    Establish existance of a problem.

    Suggest suitability of his services.

    Determine initial procedures for dealing with the
    situation.

    Set limits on his role as a consultant.

    Terminate with a request for his involvement in an
    extensive problem analysis and action model.

2. Following this initial contact the planning consultant and the organization may determine that the problem analysis and a proposal for services are in order. This would be determined as a result of the consultant's need to:

    Survey the situation.

    Contact all relevant individuals.

    Suggest models of present procedures.

    Isolate present blockage points and indicate probable reasons.

    Pin-point information needs.

    Analyze decision-making processes and recommend alternations or changes.

    Determine alternative problem statements.

    Relate the problem area to the total management (or decision) system.

    Provide a nucleus for negative feedback and frustration.

    Decide the suitability of continuing the relationship.

    Indicate the parameters of the problem, potential methods of solution, and necessary services.

    Recommend sources of additional expertise.

    Report, in appropriate format, on the findings and conclusions, suggests implications, and makes recommendations.

    Terminate with a model for action.

3. The planning consultant would confront the problem and develop a process of interaction with the organization through the development of the following activities:

Develop a project proposal for resolution of the
problem.

Aid in the implementation of the solution.

Insure continuing follow-up services.

One respondent questioned as follows, "does the consultant
suggest contracts in terms of goals, objectives, or does this
work itself out?" Actually the goals should be established mutually
with the organization, and this establishment should include various
checkpoints during the procedure. As yet the concept of performance
contracting has not been widely applied to the work of a consultant,
but it seems clear that in the near future, performance contracting
for planning consultants will become fairly routine. The organi-
zation will establish checkpoints and criterion for measuring the
consultant's performance and determine the desirability for continuing
a relationship. Since long-range planning suggests a continuing
relationship, both the consultant and the client should feel some
satisfaction with the undertaking, or they should be free to
reconsider the relationship at any time.

<u>Inhibitors to Effective Consultant Relationships</u>

Since this paper has taken a somewhat ideal approach to the
implementation of the education-industry planning consultant, it
seemed advisable to indicate some potential inhibitors of the effective

establishment of such a role. The consultant would require aware-

ness of these blocks, and the client would presumably want to

examine his responsibility for assuring the effectiveness of the

consultant's use. The following inhibitors appear worthy of the

consultant's and the organization's attention:

1. The consultant is perceived as a threat (either by
    the management or the group) who will assist unwanted
    change.

2. The consultant is perceived as a "salesman."

3. Management does not see the need or the relevance for
    comprehensive, long-range planning.

4. The group is "closed" to an outsider:

    By its nature (sociology).

    By role definition (acculturation).

    Through prior experience.

5. The consultant is perceived as "in the pay of" one
    party to a joint planning venture.

6. The consultant himself:

    By his attitude or lack of perception.

    By his selection of entry strategies.

    By personal traits unacceptable to the target group.

7. A member of the organization who thinks he can do the
    job as well (but who does not perceive the special
    role relationship).

8. Management fails to establish any entry mechanism or
    to continue support.

9. The consultant's pay rates seem excessive (probably
    because of unfamiliarity with this type of service).

10. The result (pay-off or end-product) of the consultant's
    role is not understood.

11. His temporary relationships is perceived as "irresponsible"
    to the on-going results of his efforts.

12. He is undermined by factionalism resulting from organi-
    zational struggles, or he sides with a fraction rather
    than concentrating on the planning process and building
    support for it.

13. The consultant finds that the organization's staff cannot
    support the changes implied by his efforts through
    lack of skill, training, or ability.

14. The consultant finds that the organization cannot
    make available necessary information (or won't divulge
    information).

15. The consultant selects assignments:

    Outside or beyond his expertise.

    Contradictory to his role and damaging to his
     eputation.

    Without knowing the situation or predicting the
    problems which may arise.

    Without adequate "charter."

    Too comprehensive for the time or cost structure.

All respondents expressed pleasure with the contents of

this list. They particularly chose to emphasize the actual or

presumed conflict of interest or the feeling that the consultant

would be contaminated by his relationship to a product or a single

organization. Some question was raised about the consultant's

concern that an organization could not support change through its

lack of skill, training, or ability. Some of the respondents felt

that while this may in fact be true, the consultant would be only

indirectly concerned with this condition. The consultant would

suggest forward-looking programs which management could establish

within the organization. One other concern was expressed by a

respondent in these terms: "the consultant may be asked to help

people who are completely inept!" In this case, the consultant

will find his relationship totally ineffectual. This respondent,

having operated in situations of this nature, cautioned that the

best role for the consultant is to leave the consulting relationship

when this condition becomes evident.

This review of the major elements of the consultant role as

presented in the prospectus and as criticized by the respondents

provides a basis from which some conclusions concerning the viability

of the role may be drawn. In general, there was acceptance for the

role as it was presented, although the respondent felt free to

criticize individual wordings, statements of functions or role,

or sections of the text. Several substitute changes were suggested;

most notably, it was felt necessary to insure that the consultant's

relationship with industry is distinct from the marketing process.

221

Each respondent evidenced a general concern for the development
of a common ground. Curiously, educators felt that industry would
be less interested in the common ground, and industry representatives
thought that educators would find it less effective. The group
of respondents did not add major new categories to those mentioned
in the prospectus.

Concerns Arising from the Inquiry

Some general concerns were expressed by the respondents
which relate to the definition and establishment of the education-
industry planning role. A major observation may be pertinent before
this discussion. Representatives of education tended to view
industry more positively than representatives of industry; similarly,
representatives of industry tended to view education more positively
than the educators. There were exceptions, but rather than emphasize
a definition of their own positions, the respondents attempted to
conjecture about the attitudes of the opposite group. The reaction
appeared one clear indication of the need for the industry-education
planning consultant, but it was not general enough to establish
a distinct pattern it did not appear to detract from each spokes-
man's ability to represent himself and his group.

The problem provided a question, "are educators so concerned
with the education-industry relationship as industry?" The question
was asked by an educator who assumed that industry has a greater

stake in these problems than did education. This remark was
prompted in part by the present use of consultants in industry.
Most producers of educational materials and systems hire consultants
who after the sale of such materials instruct teachers and other
users in the operation. The respondent thought industry would
utilize the consultants faster than the schools because of their
need for communicating effectively with the schools.

Several constraints with the development of role require
acknowledgement, but they are not well understood by education and
industry. As one respondent indicated, "teacher training is as
far as five to ten years behind the methodology available from
industry," and this affects the ability of industry to assist
the development of new educational methodologies. Again, financial
constraints are faced by both industry and education. Industries are
becoming more knowledgeable about the political processes because
they require the support of development activities in the field of
education. This increasing sophistication on the part of the educa-
tion industry has developed because this group of industries must
compete with others for federal funds.

One respondent pointed out the difficulty in industrial
relationships in this manner: "The representatives of industry
respond to what they see as educational problems, but they have
not yet identified the real problems." He suggested strongly that

223

industry has not yet learned how to spell _curriculum_. The industry

assumes that it is educators responsibility to use whatever is

produced effectively. These reactions of the respondents appear

to reflect the classic view of education-industry relations, in

which education plans its needs and industry fulfills them by

providing component parts for the system. Educators maintain a some-

what defensive reaction towards the role of industry, but they accept

full responsibility for implementing educational programs. A

related observation is that of an industry representative who

cautions against the belief of educators that industry does not make

curriculum decisions. Such a feeling is completely absurd!

Industry must meet mass markets, and, to do so, it must tailor its

products to the great majority.

Two respondents wondered how these needs were being met

without the education-industry planning consultant, but the literature

does not indicate that this function is presently well recognized.

Various independent projects indicate that effective education-

industry relationships exists, but theory underlying the develop-

ment of these relationships has not been explicated.

Three respondents questioned the possibility of education

and industry developing a common ground. As one respondent

230

224

speculated, "what will allow the marriage which will not end in

divorce?" Will industry be interested in this role other than as

a sales facilitator? One respondent attempted to explicate the

important differences in education and industry by suggesting that

industry is a much more "lawful" enterprise than education. Industry

is entirely devoted to the profit motive; it is unwilling to delay

the profit or to expend energies which cannot be directly related

to profits. Education, on the other hand, is somewhat more indepen-

dent in its ability to develop alternative solutions to peristent

problems. Another respondent suggested in a similar vain that

education, having evolved through its past experiences with industry

a feeling of distrust, would be equally opposed to a common ground

particularly if the consultant could be interpreted as co-opted by

a specific product. The discussion suggests that the consultant

will need to be a strong willed, independent person capable of

judging the dangers inherent in any potential consultant situation.

Another respondent indicated that the common ground might

be difficult to develop because the sociology and acculturation

of industrial roles varies considerable from that of educational

roles. He suggested such matters as dress and grooming might

be different enough to inhibit the free communication of the

consultant with educators and industry representatives. Pecularities

of language and vocabulary in each area may offer stumbling

blocks. Can an individual effectively cross the acculturation

boundaries of education and industry and be accepted by both groups?

It seems from the enthusiasm generated by the education-industry

planning consultant that developing such an individual should be

possible.

Personal Qualifications

The personal qualifications of the education-industry

planning consultant were of special concern to the respondents.

Respondents were concerned that the consultant be an _ethical human_

being. Establishing a common ground seemed to require a strong

person. For instance, one respondent questioned "how do you keep a

consultant from being a tool for industry when the consultant is

personally sold on a product?" If the consultant genuinely believes

in a particular position to the exclusion of other positions prior

to entering a planned relationship, he cannot act freely in that

relationship. Associated with this concern was the fear of

"contamination by associating," even when the consultant was not so

"sold" on a product. This problem resolved itself through emphasizing

the personal integrity of the consultant. If he felt he could not

operate freely within a situation, he would have to refuse to

participate. The individual consultant who is willing to carefully

pick and choose his problems, according to his freedom to act in
the situation, will soon gain a personal and professional reputation
for avoiding these pitfalls.

One respondent cautioned that the consultant should not be
interpreted as merely "selling a bag of planning tricks." The
consultant operates within definite fixed limitations, based on
his experience, his knowledge, and the dictates of the role. His
personal magnetism may permit him to get business, but skill will
carry him through these efforts. It does remain a critical question
as phrased by one respondent, "when does a politician become a states-
man?" For this respondent the consultant appeared to be an educator
of great stature. Because this respondent feels that the schools of
education do not necessarily produce - in fact, to him they prevent
the production of great educators, this respondent was concerned
that the background for this kind of consultant could not be dis-
covered. The consultant, as he practices his trade and establishes
himself, is best described as a fairly normal, probably rather
intellectual, human being who performs one set of fairly straight
forward functions in nevertheless difficult situations. It would
appear that his area of operation would require statesmanship and
that many individuals, regardless of specific background or education
will be able to perform these functions.

Two respondents were concerned with a program of account-
ability for the consultant, and they wondered how this might be done.
One respondent is presently using a planning consultant and has
developed a performance contract which stipulates certain end
products at certain times during the course of the project. If the
consultant does not perform adequately, he will not be rehired for
the second phase of the project. Since the initial phase is only
six weeks, there was no thought of termination prior to the end,
although performance is evaluated at approximately 10 day intervals.
The performance of the education-industry planning consultant can be
tested in two ways: (1) better planning resulting from the con-
sultants efforts as measured by the responses by educational and
industrial partners to the situation; (2) better education resulting
from the efforts of the planning situation, especially as measured
by the learning attitudes, and responses of the youngsters. The
questions of establishing accountability will vary according to
the length and involvement of the consultant. Long-range contracts
should clearly specify fixed end-products. This will be useful
for both the consultant and the manager. Frequent interactions
between the consultant and client will help maintain a common
understanding of activities. In the event that a consultant

develops a reputation for operating otherwise, he will find

clients "hard to come by" and perhaps be excluded from the field.

CONCLUSION

The enthusiasm with which all persons asked to respond

greeted this activity deserves reiteration. Educators and

industrial representatives alike have expressed interest and

encouragement in the project and a concern that the area be developed.

The education-industry planning consultant's acceptance by industry

and education will be based in part on the quality of the individual

performing the role. The nature of braod-based technological

implementations for education appears to require this kind of

assistance, and education and industry alike are becoming increas-

ingly aware of this need.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

This investigation developed an education-industry planning consultant role to function as a common ground between the education and industry partners in the educational planning and development process. The consultant will use the techniques of long-range, comprehensive planning as adapted to the special needs of planning for curriculum and instruction. Based on the study and the reactions of the respondent, the following major conclusions may be stated:

1. Fourteen of the sixteen respondents endorsed the general concept of the education-industry planning consultant as one potential method for ameliorating the difficult problems confronting the joint planning of education and industry. One felt that the role would be extremely useful if the assumptions underlying its development were correct, but he questioned some of these assumptions. One respondent did not feel that a consultant role could offer any new value in this area.

2. Both educators and industrial representatives said they would employ the consultant for some or all of the functions described by the prospectus, but both groups favored the independence of the consultant from both the production-oriented industries and the schools.

3. Great care will be required to establish the credibility of the education-industry planning consultant and to insure his dedication to the problems of educational

229

planning, especially since a wide-spread tradition of mutual distrust appears to have developed from the recent history of education-industry interaction.

4. The education-industry consultant will perform a "generalist" function; i.e., he is not a specialist in any specific planning technique (or engaged for that reason). His expertise includes problem analysis and conceptualization, interaction analysis and human relations, and the design and development of planning missions. These skills require a broad background of education and experience, reflecting an understanding of both educational and industrial practices.

The major problem with the establishment of the role will be the education-industry planning consultant's need to effectively "bridge" the different acculturation and socialization patterns of educators and industrialists. Indeed, these differences--in dress, mannerisms, and values--appear to be strong inhibitors to the success of the role. This area, while critical, did not appear to vitiate against the role. The consultant will require careful adjustment of his personal and professional actions if he is to succeed in relating to both groups.

Guidelines for the Application of the Findings

As a result of this investigation, some general characteristics and limitations for an education-industry planning consultant have been suggested. In its present theoretical form, the role has appeared worthwhile to a number of respondents. These findings, therefore, may be useful as guidelines for engaging the consultant

to assist the planning and development of curriculum and instructional
programs and components. Individuals performing the role, or some
of the functions assigned to the role, may provide additional
operational evidence concerning its usefulness and/or necessary
changes.

One respondent has suggested that the role as presently con-
ceived be tested through a U.S. Office of Education planning (or
research) grant. He envisions a school district, or consortium of
districts, developing active linkages with a number of educational
industries for joint planning. The education-industry planning con-
sultant would function as the common ground among these organizations.
He would also be responsible for the development of the major aspects
of the comprehensive long-range planning. This type of trial
siutation seems appropriate at this time. The theoretical development
of the role model and its reality- testing has presumably contributed
to the need for theory in this area and should provide a strong
basis from which to design operational testing.

An important next step might be the development of education
and training programs for educational planners specifically prepared
to function in this role. These programs could be designed by
universities, by industries, or through the cooperation of many

232

groups. Since there is a critical need for planning skills, the
design of degree-granting programs might be supplemented by work-
shops, seminars, and other formats. Again, these developments
might be supported by federal or foundation planning grants, but
industry might fund the planning of these kinds of programs an
effective way to initiate new forms of interactions among
universities, school districts, and procedures.

The education-industry planning consultant emerges as one
effective approach for improving the processes of comprehensive,
long-range educational planning. As technological processes become
more wide-spread in education, both as a result of increasing use
and through broadening of the planning base, more effective means
of interaction and development will be required. The effective
use of consultants appears an important aspect of this developing
situation.

APPENDIX

This appendix contains letters received from the respondents. All respondents were requested to write a short reaction to the concept of the education-industry planning consultant. Eleven such responses were received and are enclosed herein.

NISKAYUNA PUBLIC SCHOOLS

OFFICE of RESEARCH and DEVELOPMENT
STORY AVENUE
NISKAYUNA, NEW YORK 12309

JOSEPH H. OAKEY
Director

Telephone
(518) 393-6651

May 4, 1970

Mr. Walter LeBaron
413 Seventh Street S. E.
Washington, D. C. 20003

Dear Mr. LeBaron:

I would like to follow up on my telephone conversation
with you regarding your study of the education industry planning con-
sultant.

My position here at the Niskayuna Schools gets me in-
volved in many relationships with the various industrial corporations
and very often I feel at a great loss for the appropriate relationship
which could be much more productive than it had been on many occa-
sions.

For this reason I think that your study would be a
most valuable one and I would certainly hope that the result of it is
some sort of a test relationship to see if such a role could be pro-
ductive.

I endorse your investigation most sincerely and would
indicate that I am holding myself available for any further assistance
I can give you in the course of your study.

Sincerely yours,

Joseph H. Oakey

JHO/gm

SYRACUSE UNIVERSITY

SCHOOL OF EDUCATION | CENTER FOR THE STUDY OF TEACHING

410 HUNTINGTON HALL | SYRACUSE. NEW YORK 13210

April 28, 1970

Mr. Walter A. LeBaron
413 Seventh Street, S.E.
Washington, D.C.   20003

Dear Mr. LeBaron:

Let me first of all say how pleased I was by our recent discussion concerning the aspects of your dissertation in which you are describing an environment for the effective education-industry planning consultant. I believe this to be an important area of study which has been largely ignored.

Having given our conversation some careful thought, I would like to offer the following summary opinions.
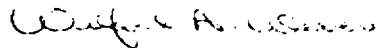
1. I believe that your treatment of the subject to have considered the full range of reality; without a doubt, you have dealt with the ideal situation, but you have also given thought to realistic parameters and potential limitations and hindrances.
2. I feel that your conceptualization in this regard to be quite sound; this is particularly encouraging in light of the paucity of work in this area.
3. I believe that the potential value of the paper is great; as educational planning becomes more complex and more systematic, the role of the consultant will be of increasing importance; there is a clear need for clarity regarding role and environment.
4. I think that the Model you have proposed is solid in all respects; it is built on assumptions which seem logical; while it does remain for the Model to be tested empirically, you have provided a framework in which this can be done meaningfully.
5. I believe that the description has one potential failing; if your work is to be useful to those who would utilize education-industry planning consultant, you will need to flesh out your writing a bit more; this is not to fault your work but only to suggest that the potential "consumer" is not sufficiently sophisticated to understand your work without further clarification; such clarification might be accomplished through the utilization of more examples.

Mr. Walter A. LeBaron
April 28, 1970
Page 2

    As you can see, my general reaction to your work is highly
positive. I am looking forward to reading the final document and
wish you the best in completing this aspect of your work.

                            Sincerely,

                            Wilford A. Weber
                            METEP Project Director

WAW/jg

OFFICE OF THE PRESIDENT

April 27, 1970

Mr. Walt Le Baron
Systems Analyst Senior
Education Systems Department
System Development Corporation
5720 Columbia Pike
Falls Church, Virginia 22041

Dear Walt:

Our discussion in my office on April 6 was a valuable one for me. The often confused relationship between industrial institutions and educational institutions in this country requires that more bright men begin to seek answers to the kinds of questions you asked me. Our conversation has provided me with useful food for thought.

With a growing population and a growing body of infor- mation available for the process of education, our problems are multiplying swiftly. Inevitably, technologies and methods pro- liferate. Just as the tasks and the alternative methods of education are becoming more diverse and complex, we are finding also a greater number of institutions and groups of people involved with the educative process in our society. Intelligence requires that we analyze and harness the interests of students, paren's, teachers and administrators, government agencies, and producers of hardware and software. All of these entities and more are involved as elements in a system, and the individual entities involved often have great difficulty in seeing their own proper and most constructive places within the system. For professional educators, the analytical task is awesome. For publishers, the definitions of responsible activity become harder to discern. For the publisher with a real conscience about the ultimate class- room results of his efforts, the difficulty of planning is partic- ularly acute. The reason is that all of us know that it is possible to sell junk in the field of education today. All too many companies are making money that way.

All of this dictates the genuine immediate need for an analytical specialist, a consultant of the kind you have described in your prospectus. This specialist must be conversant with the people in the several interest groups involved in the enterprise of education. He must help them to understand one another in order

Walt Le Baron   - 2 -   April 27, 1970

to augment consensus about goals. Then, he must be able to
postulate an efficient marshaling of resources in the interest
of attaining those goals. At present, there is entirely too
much tiral and error involved for everyone concerned. The
result, I think, is a definite discount in the effectiveness
of education for the students themselves.

The specialist we are discussing must be interlocutor,
diplomat, systems analyst, administrator, and a perpetual student
of education. Also, he must be gifted with a certain idealism,
for we know that there are great possibilities for fraud in this
kind of consultation. Unfortunately, I know of very few people
today who possess this configuration of personal qualities.
Furthermore, I can't say that I know of any training program that
is about to produce any. For the moment, it is up to men like
you who are willing to bring experience and several disciplines
of study together, to inform your professional lives. I believe
that your skills and personal qualities will give you a running
head start in pioneering this field. Hence, my personal interest
in lending you whatever insights and personal encouragement I
can at this time.

                                Sincerely yours,

                                Wendell Shackelford
                                President

WS/bc

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

April 28, 1970

Mr. Walt LeBaron
413 Seventh Street, S.E.
Washington, D.C.

Dear Mr. LeBaron:

As I indicated in our recent interview, I find your concept of
an education-industry planning consultant both exciting and
filling a real need. There can be little doubt that the rapid
expansion in technology (both educational and other), the de-
velopment of management techniques, the entry of private industry
into the educational field, the whole concept of the systems
approach to problem analysis and the possibility of its appli-
cation in the field of education have added immeasureably to
the task of the professional educator. Inflation coupled with
the tax revolt evidenced by the failure of many school bond
issues points up the increasing and urgent need for the edu-
cational community to become more cost-efficient and cost-
effective. Long-range planning is no longer an educational
luxury; it is rapidly becoming an educational must.

I believe that an education-industry planning consultant as
described in your dissertation would not only be helpful to the
educator in bringing to him the advances (technological and
managerial) that are the outgrowth of this country's industrial
expertise, but would bring to industry a knowledge and understanding
of educational problems and processes. This communion of ideas,
this mutual comprehension of problems, is essential if the children
in our schools are to receive the quality education to which they
are entitled and which our technology and knowledge are capable
of providing. Your education-industry planning consultant, by
bridging the gap between the world of industry and the world of
education, would seem a hopeful step in this direction.

In our rather lengthy interview, I believe we covered all comments
I had to make regarding the contents of your paper. There is one

Page 2 - Mr. Walt LeBaron

hope and one concern, however, which I would like to state
again. I would hope that the educational community would take
the initiative in the utilization of the education-industry
planning consultant, for I fear that if industry takes the
initiative, there is danger that the consultant would, in effect,
become the "captive" of industry--a super-salesman, in fact. My
concern is related to this fear: how do you keep even the edu-
cationally oriented education-industry planning consultant from
becoming "contaminated" by his knowledge of and faith in a
particular solution (hardware and/or software) to a given pro-
blem (e.g. severe reading problems of inner-city children)?

I think your dissertation makes a real contribution to the field
of education, and I would hope that you might show the way by
becoming an education-industry planning consultant.

Best wishes.

Sincerely,

Julia E. Hamblet
Associate Director
National Right to Read Effort

NATIONAL ASSOCIATION OF EDUCATIONAL BROADCASTERS

1346 CONNECTICUT AVENUE · WASHINGTON, D. C. 20036
OFFICE OF RESEARCH AND DEVELOPMENT

April 28, 1970

Mr. Walt LeBaron
Education Planning
413 Seventh St., S.E.
Washington, D.C.

Dear Walt:

I am very impressed and very enthusiastic about your
inquiry into the role of the consultant in effecting
educational change and innovation. Our own work in this
area strongly supports the notion that a third party
role is an essential ingredient, not only in planning
for educational development but in implementing such
plans.

Your delineation of the specific services that can be
seen as appropriate to the educational consultant's
role is very helpful. They represent those areas of
insight and operation which are seldom possible within
the context of a staff capability and can only be expected
through the sustained intervention of the consultant.

It was good to talk these matters over with you and I
look forward to seeing the finished document.

Best regards.

Sincerely,

James A. Fellows
Director

JAF:bb

PUBLIC SCHOOLS OF THE DISTRICT OF COLUMBIA
SUPERINTENDENT OF SCHOOLS
PRESIDENTIAL BUILDING
415 · 12TH STREET, N. W.
WASHINGTON, D. C. 20004

April 20, 1970

Mr. Walter Le Baron
413 Seventh Street, S. E.
Washington, D. C.   20003

Dear Mr. Le Baron:

At the outset I feel compelled to compliment you for generating,
and your doctoral advisors for supporting the development of this
study. In my judgment, the scope and content go far beyond the surface
retoric which has heretofore appeared in the literature.

In addition to those reactions you may have gleaned through our
lengthy interactions, I should like to provide some commentary in linear
form attending to at least four domains.

The first regarding a message which appears to be communicated
through your discussional perspective is an assumption that "industry
is ready" and/or/but "are the schools ready." I recognize that your
dissentation target population is geared primarily, although not
exclusively to those of us in publication. My comments do not direct
themselves directly to the role of the consultant, but I believe are
significant in that they will be directed toward the "willingness of
industry," hence the connection to the role of the consultant.

My experience as a practitioner has been that industry (corporate
conglomorates) have been unwilling to invest in educational program
development which is either long-term in extent, nor requires a
heavy research and development or capital expenditures. My experience
has been that the potential profit margin is insufficient when compared
to the yield contained in product development in the more traditional
consumer product fields. Profit and loss is the "name of the game" in
the corporate world and I believe that responsible conglomorate leaders
tend to look at all of their groups or sub-divisions with the "same set
of eyes."

I do not wish to communicate that this corporate attitude is
necessarily irresponsible, and could in fact be conceived as having
real understanding of the problems. For example, it may recognize that
in product sales, research and development, marketing, etc., - in a
sense "errors" can be passed on to the consumer in increased product
costs; and perhaps industry recognizes that public education does not
have the risk capital sufficient to pay for product development. Industry

may also recognize that they may not have sufficient skills to operate
in the real world of human behavior required in <u>education</u> rather than
training.

This is not to say that industry will not, nor can not make a
significant contribution, perhaps with a re-ordering of our national
priorities and/or a re-definition of profit and loss margins - industry
will become seriously involved.

A second domain is that of <u>accountability</u>. Some of us in education
are committed to becoming responsive and responsibile to our consumers
(learners). In this connection, and assuming that for the present our
risk capital will remain small, we will be demanding of those who work
with us - some form of guaranteed product delivery. Perhaps in your
model you can design-in a system of accountability which would be
viable with any of the consultant prototypes you have developed.

A third dimension for which I have concern is the development of
a mechanism which will allow for the consultant to maintain "creditability."
All of us recognize that we live in a world of massive mistrust, and that
there will be those who will believe that the consultant is either "on the
take" or has "sold out" to the other party. This notwithstanding, there
needs to be some way that the various parties will know that the
consultant is "alive and can contribute" without his being conceived
as a self promoter or in being promoted by someone else.

Fourth, and I am certain you were not trying to appeal to the
educationalist, I am not certain that the consultant needs to have been
"primarily an educator" in the classical sense, i.e. having played the
musical choirs from classroom teacher to football coach to the higher ups.
My bias would be that this person have a more thorough grounding in
philosophy, psychology, technology, systems, etc., which would enable
him to design and plan for the development of an educational system in a
systematic fashion only when the more fundamental questions concerning
societal direction are accounted for. A good system which takes us in the
wrong direction may be far worse than a lack of system which attends to
humanistic and societal concerns.

Finally, when searching for new personnel a reasonable question to
ask of a former employer is whether he would not hire the person in question.
I should like to advise you as Superintendent elect of a major urban school
system, that I am interested in engaging the services of the man you have
described in your model - to start work immediately.

Best wishes, and continued success with the development of the
model.

Sincersly yours,

Robert La Penna
Assistant Superintendent

LAIDLAW BROTHERS

A Division of Doubleday & Company, Inc.

River Forest, Illinois

April 16, 1970

Mr. Walt Le Baron
Education Planning
413 Seventh Street, S.E.
Washington, D.C.   20003

Dear Walt:

I enjoyed having the opportunity to participate in your dissertation work on The Education-Industry Planning Consultant an Emerging Role,

As I indicated in my interview with you, my reaction to your prospectus is excellent. Having seen your work I am doubly convinced that there is a vital need in both education and industry for a planning consultant.

Your description of the role of the consultant and the nature of his function would seem to me to be a valuable guide to educators in general who are having great difficulty in trying to relate scientific and technological changes to their immediate school programs. Many of the big industrial complexes that have tried to become involved in education use a "medicine show" approach to huckstering their product. By the time the average educator is hit with the advertising and promotional bits, he is thoroughly confused as to the relevance of some of this new equipment.

I should think that a planning consultant who could help a school system evaluate, plan and implement additions and improvements to its programs would be worth his weight in gold!

I am afraid I took entirely too much of your time in discussion but as a practicing businessman in an industry closely related to education, I was very impressed with the depth of your prospectus and the more I have thought about it, the more I see that it will meet a very critical need in both education and industry.

Cordially yours,

William R. Dudenhausen
Executive Vice President

WRD;ml

ENCYCLOPÆDIA BRITANNICA
EDUCATIONAL CORPORATION

425 NORTH MICHIGAN AVENUE · CHICAGO, ILLINOIS 60611 · PHONE: (312) 321-8800

April 17, 1970

Mr. Walt Le Baron
Education Planning
413 Seventh Street, SE
Washington, D.C.

Dear Walt:

How nice to have talked with you in Chicago the other day!
I must apologize for taking such a long time to work my
way through the material you asked me to respond to.

Your prospectus is excellent. It is thoughtfully prepared
and is comprehensive. It illustrates considerable insight and
much experience in field consultation and program planning.
I found, as you can see, little to quarrel about.

As education further develops its own particular politics
and as it becomes increasingly "technologized," we'll likely
find more planning strategies accomplished at state and
regional levels, rather than at local building or district
levels. Today's sanction system will become, then, tomorrow's
implementation group. Somehow I get the feeling that the
prospectus doesn't quite deal with sanction versus implemen-
tation and with strategy versus tactical decision making.
But I can't find a convenient tool to suggest be used to
accommodate this notion.

I will follow your dissertation with interest. I'm so pleased
you're doing it. It needs to be done. I hope you'll keep me
advised of progress and, of course, how I can further help
toward insuring its successful conclusion.

Keep in touch.

Sincerely,

Frank

Frank A. Anderson, Director
Program Planning

FAA:gh
Enc.

National Education Association
1201 SIXTEENTH STREET, N.W. ■ WASHINGTON, D.C. 20036 ■ (202) 223-9400

Office of Planning and Organizational Development

April 14, 1970

Mr. Walt Le Baron
Education Planning
413 Seventh St., S. E.
Washington, D. C.

Dear Mr. Le Baron:

As agreed between us, I have carefully studied your prospectus: The Education-Industry Planning Consultant -- An Emerging Role. I have made numerous margin notes on the document dealing specifically with various points as they arise. The purpose of this letter is to furnish an overall reaction to the concept and the way the concept is developed in your paper.

I believe that a study such as yours is badly needed in the field. I could find no factors related to the E-I consultant's role that have been overlooked. The prospectus treats each of these factors in sufficient depth. The completed dissertation should be a major contribution to a rapidly emerging field and should fill a need which will increasingly become apparent in the years immediately to come.

It seems to me that the relationship between the consultant and his employer is of paramount importance. Without particularly careful delineation of this relationship there might arise many questions in the "conflict of interest" arena. I would urge that detailed attention be given to this very important aspect of the general framework that is established. Again, generally speaking, I find the prospectus to be most worthy and stimulating. I look forward to studying the completed dissertation.

Sincerely yours,

Jack H. Kleinmann

JHK:hn

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF EDUCATION
WASHINGTON, D.C. 20202

April 15, 1970

Mr. Walt LeBaron
Education Planning
413 Seventh Street, SE.
Washington, D.C. 20003

Dear Walt:

Thanks very much for the opportunity to review your prospectus.
You certainly have a thorough conceptualization of the role and
function of an education-industry planning consultant. I would
certainly concur that the perceived need for such a consultant
is authentic and valid. The qualifications envisioned for such
a consultant are extremely high and such an individual should
consequently be entirely capable of giving the highest level of
service to both industry and education. Your dissertation, if
developed from this prospectus, should make quite a contribution
to a completely undeveloped domain.

There are a couple of areas in which I have some concern over
the role of the education-industry planning consultant. Your
prospectus addresses this problem in an indirect manner in the
portion devoted to "integrity of function". The remaining
unanswered question is how does the consultant maintain the
necessary objectivity in relation to, and aloofness from, the
industrial sector in order to adequately function in the edu-
cational sector. This problem is somewhat magnified by virtue
of the fact that the consultant allegedly has industrial clients
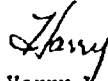as well as educational clients.

I would be inclined to advocate an "industrial-consultant"
relationship along the lines of developing performance speci-
fications for major hardware systems which have been developed
from a persistent and compelling need arising in the educational
community. Perhaps another name for this concept is "rigorous
sophisticated performance oriented contracting". In my judgment

248

Page 2 - Mr. Walt LeBaron

such contracting would be a significant breakthrough in both the
industrial and educational domains as they mutually aspire to
greater intersections. I also feel that the consultant could
perform a vital service in facilitating such arrangements without
presenting any potential conflict of interest problems.

I hope these observations may be of some assistance as you proceed
to complete a very creative and challenging dissertorial topic.

                              Sincerely yours,

                              Harry L. Phillips
                              Director, Division of
                              State Agency Cooperation

Enclosure

THE UNIVERSITY OF THE STATE OF NEW YORK
THE STATE EDUCATION DEPARTMENT
ALBANY, NEW YORK 12224

CENTER FOR PLANNING AND INNOVATION IN ELEMENTARY,
SECONDARY AND CONTINUING EDUCATION
NORMAN D. KURLAND, DIRECTOR

518: 474-2380

MARK B. SCURRAH, ASSISTANT DIRECTOR

518: 474-2384

ALAN S. HOFFMAN, ASSISTANT DIRECTOR

518: 474-2386

C. JOSEPH AMYOT   474-2388
GENEVIEVE B. BOSSON   474-2386
FRED Q. BOWMAN   474-2385
WALTER E. SCHOENBORN   474-2386
OSCAR D. SIMMONS   474-2382
BINGHAM L. PARKIN   474-2387

AREA CODE: 518

May 6, 1970

Mr. Walter LeBaron
413 Seventh Street SE
Washington, D. C.   20003

Dear Mr. LeBaron

        This is to officially confirm our telephone conversation and several
direct meetings that we have had on an interview basis concerning your
prospectus for "The Education-Industry Planning Consultant."

        I will be very brief in summarizing the reactions that I had as in-
dicated on the prospectus and as described during our discussions on the
paper. They are as follows:

    1. A definition of terms is important, particularly those that
        are new to the ears of educators. I refer to such terms as
        "broad-based technological implementations," "systems,"
        "training packages," and so forth.

    2. Avoid statements that you cannot substantiate with factual
        evidence. It may not be so that there is "distrust between
        industrial representatives and the school superintendent"
        as you stated on one of the pages in the prospectus.

    3. Look for positive views by the educator in terms of indus-
        try's role.

    4. Is it so that the schools evolve from a poorly defined cor-
        census to be all things to all people? I'm not so sure that
        they serve too many people outside of the four walls.

    5. The education-industry planning consultant is a human being
        of course and cannot necessarily stay within the frame of
        objectivity in terms of his relationships with either indus-
        try or education. There is no assurance that he will be
        detached from bias.

Walter LeBaron   Page 2   May 6, 1970
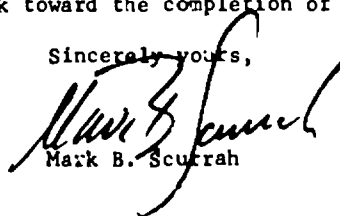
6. Be sure that the role of this consultant emphasizes short-
    range goals as well as the long-range and comprehensive
    planning activities that you indicated.

7. Under your topic of "Limitations on the Education-Industry
    Planning Consultant's Functions" I thought that the four
    starred roles of the consultants considered inappropriate
    were well stated.

8. You raised a question on "Who Involves the Consultants?"
    The point of entry of the consultant will probably deter-
    mine the extent to which he feels a sense of loyalty.
    Obviously, if the school is paying his fees, then he will
    be more inclined to react accordingly without losing his
    continued consultant fees. The same would apply if he
    were hired by industry. Should he be hired part by industry
    and part by school funds when dealing with a single indus-
    try-school situation?

    These are just a few of the major items I mentioned to you and of
course you know about many minor improvements that I felt could be made.

    I really feel that you are on to a very good possibility here. I
feel that this position will be emerging. At least I feel that it cer-
tainly has a place more clearly now than ever before. As you know, our
office has employed numerous persons of this type and we have found
their services to be of great help to us as we at the State level try to
develop goals and programs for the 70's.

    I wish you luck in your work toward the completion of your doctorate.

                              Sincerely yours,

                              Mark B. Scutrah

lmw
Enclosure

BIBLIOGRAPHY

Ackoff, Russell L., A Concept of Corporate Planning.   New York:
   Wiley Interscience, 1970.

Adams, Don, ed., Educational Planning. Syracuse, New York:Center
   for Development Education, Syracuse University Press, 1964.

American Association of School Administrators, Administrative
   Technology. Stephen J. Knezevich, ed., Washington, D.C.:
   National Education Association, 1969.

Anthony, Robert N., Planning and Control Systems: A Framework for
   Analysis. Boston: Graduate School of Business Administration,
   Harvard University, 1965.

Argyris, Chris, "The Individual and the Organization: Some Problems of
   Mutual Adjustment." Administrative Science Quarterly. II
   (June 1957) 7-29.

Banghart, Frank W., Educational Systems Analysis. New York:
   Macmillian, 1969.

Bennis, Warren G., Organization Development: Its Nature, Origins,
   and Prospectus. Reading, Massachusetts: Addison-Wesley, 1969.

Benson, Charles S. and James W. Guthrie, An Essay on Federal
   Incentives and Local and State Educational Initiative. Berkeley,
   California, December 1968.

Bereday, George Z.F., Joseph A. Lauwerys, and Mark Blaug, eds.,
   The World Yearbook of Education, 1967: Educational Planning.
   London: Evans Brothers, 1967.

Boguslaw, Robert, The New Utopians: A Study of Systems Design and
   Social Change. Englewood Cliffs, New Jersey: Prentice-Hall,1965.

Branch, Melville C., Planning: Aspects and Applications. New York:
   Wiley, 1966.

Brooks, Richard D., _Comprehensive Planning in State Educational Agencies_. Madison Wisconsin: Wisconsin Department of Public Instruction, 1968.

Buchmiller, Archie A., _Central Comprehensive Educational Planning: A Role for State Educational Agencies_. Madison, Wisconsin: Wisconsin Department of Public Instruction, 1969.

Bushnell, Don O. and Dwight D. Allen, _The Computer in American Education_. New York: Wiley, 1967.

Chirikos, Thomas N. and A.C.R. Wheeler, "Concepts and Techniques of Educational Planning," _Review of Educational Research_. XXXVIII (June 1968) 264-276.

Commission on Instructional Technology, _To Improve Learning_. Washington, D.C.: The Commission, August 1969.

Coombs, Philip H., _The World Educational Crisis: A Systems Analysis_. New York: Oxford, 1968.

Costa, Arthur L., "Strategies for Developing Autonomous Learners," _Audiovisual Instruction_. 13:8 (October 1968) 832-834.

Curle, Adam, _Problems of Professional Identity: An Examination of Training for Human Resource Development and Educational Planning_. Occasional Paper No. 6, New York: Education and World Affairs, July 1968.

Davis, Russell C., _Planning Human Resource Development: Educational Models and Schemata_. Chicago: Rand McNally, 1966.

Dorfman, Robert, ed., _Measuring Benefits of Government Investments_. Washington, D.C.: Brookings Institution, 1965.

Elam, Stanley and Gordon I. Swanson, eds., _Educational Planning in the United States_. Second Symposium on Educational Requirements for the 1970's, An Interdisciplinary Approach, Phi Delta Kappa, Itasca, Illinois: F.E. Peacock, 1969.

Educational Television: The Next Ten Years. Bulletin 1964, No. 12, Washington, D.C. U.S. Office of Education, 1965.

Furse, Bernarr S. and Lyle O. Wright, eds., Comprehensive Planning in State Education Agencies. Salt Lake City, Utah: Utah State Board of Education, 1968.

Factors Affecting Research and Exploratory Development. Cambridge, Massachusetts: A.D. Little, April 1965.

Gagne, Robert, ed., Psychological Principles in Systems Design. New York: Holt, Rinehart, and Winston, 1965.

Gerard, Ralph W. ed., Computers and Education. New York: McGraw-Hill, 1967.

Hall, Arthur D., A Methodology for Systems Engineering. Princeton, New Jersey: Van Nostrand, 1962.

Harris, Chester W. ed., Encyclopedia of Educational Research. Third Edition, New York: Macmillian, 1960.

Harris, Norman C., "On Being a Consultant," Junior College Journal, XXXVII (April 1967) 9-13.

Hartley, Harry J., Educational Planning-Programming-Budgeting: A Systems Approach. Englewood Cliffs, New Jersey: Prentice-Hall, 1969.

Heddinger, F.M. "Industry's Role in Education Defined," American School Boards Journal, 155 (September 1967) 30-35.

Helmer, Olaf and Nicholas Rescher, "On the Epistemology of the Inexact Sciences," Management Sciences, 6 (1959) 48.

Helmer, Olaf. Social Technology. New York: Basic Books, 1966.

Henrie, Samuel N. Jr., and Higgins D. Bailey, "Planning Carefully or Muddling Through: An Educator's Choice," Journal of Secondary Education, XXXIII (December 1968) 249-352.

Hill, John C., "Long-Range Educational Planning," Comparative Education, XXXIV (May 1968) 268-279.

Holton, Gerald, "The Education Industries: A Discussion," Harvard Education Review, 37 (Winter 1967) 110-142.

Homme, Lloyd, Contingency Management. Albuquerque, New Mexico:
   Westinghouse Research Laboratories, 1967.

Hunt, J. McVicker, "The Psychological Basis for Using Pre-School
   Enrichment as an Antidote for Cultural Deprivation," Pre-School
   Education Today, Fred M. Hechinger, ed., Garden City,New York:
   Doubleday, 1966.

Joyce, Bruce R. "The Development of Teaching Strategies," Audio-
   visual Instruction, 13:8 (October 1968) 820-823.

Kent, W.P., Walt Le Baron, and Robert Peterson, Feasibility of Using
   an Experimental Laboratory for Identifying Multi-Media Problems
   and Requirements. Falls Church, Virginia: System Development
   Cr oration, June 1968.

Kerr, Clark, The Uses of the University. Cambridge, Massachusetts:
   Harvard University Press, 1964.

Kintzer, Frederick C and Stanley M. Chase, "Consultants as Change
   Agents," Junior College Journal, XXXIX (April 1969) 53-55.

Komoski, P. Kenneth, "The Second Industrial-Instructional Revolution,"
   Teachers College Record, 71 (December 1969) 327-338.

Lave, Roy E. Jr. and Donald W. Kyle, "Applications of Systems Analysis
   to Educational Planning," Comparative Education Review, XXII
   (February 1968) 39-56.

Leavitt, William, "RAND: The Air Force's Original Think Tank,"
   Air Force/Space Digest, May 1967, pp. 100-109.

Le Breton, Preston P. and Dale A. Hennig, Planning Theory.
   Englewood Cliffs, New Jersey: Prentice-Hall, 1961.

Locke, Robert W., "Education and Business: How Much of a Partnership?"
   Business Education World, 48 (October 1967) 5-6.

Mockler, Robert J., "Theory and Practice of Planning," Harvard
   Business Review, 48 (March-April 1970) 148-159.

Molnar, Andrew R. and Beverly Sherman, U.S. Office of Education
   Support of Computer Activities. Washington, D.C. U.S. Office
   of Education, 1969.

Morphet, Edgar L. and David L. Jesser, eds., Planning for Effective
    Utilization of Technology in Education. Denver, Colorado:
    Designing Education for the Future, 1968.

Morse, Dean and Aaron W. Warner, eds., Technological Innovation and
    Society. New York: Columbia University Press, 1966.

Novick, David, ed., Program Budgeting....Santa Monica, California:
    RAND, 1965.

Oettinger, Anthony G. with Sema Marks, Run, Computer, Run: The
    Mythology of Educational Innovation. Harvard Studies in Technology
    and Society, Cambridge, Massachuttes: Harvard University Press,
    1969.

O'Toole, John F., Systems Analysis and Decision-Making in Education.
    Santa Monica, California: System Development Corporation, 1965.

Ozbekhan, Hasan, "Towards a General Theory of Planning," Perspectives
    of Planning. Erich Jantsch, ed., Paris: Organization for
    Economic Cooperation and Development, 1969.

Pifer, Alan, "Foundations and the Unity of Charitable Organizations,"
    Annual Report for 1969, The Carnige Corporation, New York:
    The Corporation, 1969.

Proceedings of the Engineering Systems for Education and Training
    Conference, Arlington, Virginia: National Security Industrial
    Association, June 14-15, 1966.

Rivest, Lloyd E., Instrumentation Systems for Group Instruction.
    Schenectady, New York:Ceneral Electric R&D Center, July 1967.

Rossi, Peter H. and Bruce J. Biddle, eds., The New Media and Their
    Impact on Society. Garden City: Doubleday, 1966.

Saettler, Paul, "Instructional Technology: Some Concerns and
    Desiderata," AV Communications Review, 17 (Winter 1969) 357-361.

Sackman, Harold, Computers, Systems Science, and Evolving Society:
    The Challenge of Man-Machine Digital Systems. New York: Wiley, 1967.

Sanders, Donald P. "Toward a Theory of Educational Development,"
    Comparative Education Review, XIII (October 1969) 276-298,

Schein, Edgar H. and Warren G. Bennis, Personal and Organizational Change Through Group Methods: The Laboratory Approach. New York: Wiley, 1966.

Silberman, Charles E., "Technology is Knocking at the Schoolhouse Door," Fortune, August, 1966, pp. 72-75.

Skinner, B.F., The Technology of Teaching. New York: Appleton-Century-Croft, 1968.

Smith, Robert G. Jr., The Design of Instruction Systems. Alexandria, Virginia: HumRRO, George Washington University, 1966.

The State of State Departments of Education. The Fourth Annual Report of the Advisory Council on State Departments of Education, Washington, D.C.: U.S. Office of Education, 1969.

Systems Analysis for Educational Planning. An Annotated Bibliography, Paris: Organization for Economic Cooperation and Development, 1969.

Tucker, A., ed., A Modern Design for Defense Decision: A McNamara-Hitch-Enthoven Antholog . Washington, D.C.: Industrial College of the Armed Forces, 1966.

U.S. Congress, Joing Economic Committee, The Planning-Programming-Budgeting System: Progress and Potentials. Hearings, Washington, D.C.: Committee Print, 1967.

U.S. Congress, House of Representatives, Subcommittee on Education, Committee on Labor and Public Welfare, Notes and Working Papers Concerning the Administration for Programs Authorized Under Title III of Public Law 89-10, The Elementary and Secondary Education Act of 1965 as Amended by Public Law 89-750, Richard I. Miller, Study Director, Washington, D.C.: Committee Print, April 1967.

Watson, Goodwin, ed., Concepts for Social Change. Washington, D.C.: National Training Laboratories-NEA, 1967.

Watson, Goodwin, ed., Change in School Systems. Washington, D.C.: National Traning Laboratories-NEA, 1967.

257

Ways, Max, "The Road to 1977," <u>Fortune</u>, January 1967, pp. 93-106.

Weinberg, Alvin M., "Can Technology Replace Social Engineering?" <u>Atomic Scientists</u>, December 1966, pp. 44-50.

Wright, Lyle O., <u>Developing Comprehensive Planning Capability in State Education Agencies</u>. Salt Lake City, Utah: Utah Board of Education, 1969.

Wurtele, Zavia S., <u>Mathematical Models for Educational Planning</u>. Santa Monica, California; System Development Corporation, 1967.