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ABSTRACT

          This review of the literature on in-service teacher
education focuses on two points: 1) the teacher as an individual in
the process of change and 2) the variables necessary to promote
change. The introduction presents the purpose and types of in-service
programs as well as current practices and assumptions surrounding the
programs. Some of the variables discussed are evaluation of student
achievement and teacher improvement; the design and format of the
programs; teacher attitudes, beliefs, and involvements; selection of
schools. The review stresses that variables related to altering
in-service teacher education programs are the same or similar to
those of any other social organization engaging in change. Therefore,
the change process is discussed, identifying factors such as
communication, resistance to change, environmental factors, change
agents, inhibitors, and facilitators. The last section deals with the
question of evaluation and presents personal reflections on
in-service teacher education. References and bibliography are
included. (BRB)

FINAL REPORT
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VARIABLES AFFECTING CHANGE
IN
INSERVICE TEACHER EDUCATION

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Preface:

The problem of lag in the introduction of research findings at the operational level is not unique to education. However, most researchers would agree that the lag in education is greater than in other enterprises.

Those responsible for directing educational resources, as they relate to inservice education, are interested in data which will enable them to make more adequate decisions in the allocation of resources. Thus, the question: "What variables appear important in changing traditional inservice training procedures?" The focus of the question is on two critical elements. One is the human equation involving teachers already in service. The second element relates to variables affecting change in inservice training procedures which implies changes in the behavior of teachers and ultimately the complex teaching-learning equation.

The report which follows is an attempt to identify variables affecting change in inservice teacher education. The report does not provide answers or proposals. The effort is essentially a review of literature published during the last twenty years. Fugitive documents and unpublished reports and papers were also reviewed. The report focuses on "what is" as well as those elements of historical nature which contribute to the establishment of a "critical distance" so necessary in planning for change.

The data collection process, concerning variables affecting change in inservice teacher education, utilized numerous sources in conducting a search of the literature. Among the sources utilized were:

1. DATRIX (Direct Access to Reference Information)

2. SRIS (School Research Information Service)

3. DDC (Defense Documentation Center)

4. ERIC (Including RIE, Research in Education and CIJE, Current Index to Journals in Education)

5. ERIC (Computer Search, North Carolina Science and Technology Research Center)

6. Standard Reference Documents such as:

   (a) The Education Index

   (b) Research Studies in Education (Phi Delta Kappa)

   (c) The Review of Educational Research

      (d)   Encyclopedia of Educational Research

      (e)   International Encyclopedia of the Social Sciences

      (f)   Education Documents Index, Vol. I and II

7.   Bibliographies of published works on change and
inservice education

8.   Personal correspondence

The general procedure utilized in the selection of material for the review of literature pertaining to variables affecting change in inservice teacher education included the following phases:

1.   Organization

2.   Data Collection

3.   Analysis

4.   Synthesis and delimitation

5.   Organization and preparation of the report

Numerous individuals were involved during the several phases. Among those making significant contributions were Wil J. Smith and Frederick Zeller of the Division of Social and Economic Development of West Virginia University. The general structure of the literature search and several areas of the search were contributed by Smith and Zeller. In addition, they contributed significantly to the reference sources located in the appendix of the report.

The reference staff of the West Virginia University Libraries provided constant assistance. Among those making significant contributions were: Clifford C. Hamrick, Barbara J. Mertins, Florence A. Taylor and Jennie L. Cushard. Mr. Robert L. Murphy, specialist in document searches and engineering librarian aided the project by organizing requests and obtaining required computer searches.

The report is organized in several main sections including a general review of the topic, a state of the art report, reports of selected research, selected variables, the change process with sub topics identifying critical factors such as resistance to change, change theory, the communication process, time, learning, environment, maintenance of change, the question of facilitators and inhibitors and change agents.

The final section addresses the question of evaluation, considered by many to be one of the most critical variables affecting change in inservice teacher education.

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The report has been limited in scope by design and contract. To aid those who desire more information in greater breadth and depth, a selected reference section has been included.

Hopefully the report will provide a basis for the identification of those variables which will aid efforts of inservice teacher education to be more efficient and economical.

Variables Affecting Change
in
Inservice Teacher Education

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I. Introduction:

Inservice education programs of the mid-nineteenth
century provided the beginnings of the preservice programs
of today. The goals, missions and objectives of the early
years of teacher education were far different than those
of today. A review of the history of teacher education
provides a perspective of a movement from the basic educa-
tion of teachers with little formal education, to the
highly complex system of today staffed largely by college
graduates.

The interrelationship between education and social
change is striking and places inservice educational pro-
grams in perspective. When a society is in a stage of
rapid and constant change, education is conceived as a
factor of change and challenge. And the critical variable
in the change process is the teacher. If educational pro-
grams are to be changed, then the personnel of the system
must be changed. If education is to serve the constantly
changing social milieu, we must realize the problem is
social and psychological in nature and of significant con-
sequences.

Unfortunately, as John Goodlad reminds us, education
is probably the only large-scale enterprise that does not
provide for the systematic updating of the skills and
abilities of its employees. Teachers are generally on
their own in updating their skills with little in their
preservice background to prepare them for continual learn-
ing and growth.

When inservice programs are offered they are generally
designed by administrators. Interpretation of the research
findings by O'Hanlon and others suggests that teachers find
most programs inadequate for their needs.

Preservice education, regardless of quality or length,
no longer suffices in view of the radical changes which have
been and will probably continue to intervene.

Not only do teachers find inservice programs inadequate
but research seems to verify this conclusion. Typical of
the reports was one by Kennedy (p. 84) which states: "The
obvious conclusion emanating from this research effort

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was that the effectiveness of inservice instructional
programs could not be verified on the basis of criterion
bariable analysis." Thus the study reported "no signif-
icant difference." The question surfaces again: "What
variables affect change in inservice teacher education?"
(See also Miles, p. 169)

Most of the literature on inservice teacher education
does not deal with variables in a research mode. In fact,
as noted in the NEA Research Division's report on inservice
teacher education, prior to 1953 most of the literature
was largely opinion and recommendation. (p. 3)

One can conclude that there has been little substantive
research on inservice teacher education. There is a vast
literature on "how to do it" but little research and evalu-
ation to note whether "it did do it."

The emphasis in inservice teacher education and
education in general has been on "doing something" with
faith something "good" would accrue. The determination
of those variables which make a difference is an extremely
difficult task. Yet, as Rubin (p. 3) reminds us, "Educa-
tors in the last analysis must be responsible for their
own strengths and weaknesses."

One conclusion reached in the review of literature
concerning inservice teacher education and change is that
the variables involved concern the behavior of individuals
in a social-psychological environment. A second conclusion
reached concerns the change process. The variables related
to altering traditional inservice teacher education programs
are the same or similar to those of any other social organi-
zation that engages in change. Therefore, the body of
literature to which many leading educational change agents
refer are those studies in strategies of change and the
change process itself. It is in this body of literature,
including case studies of bureaucratic structures by
Elting Morison, Barnett, Bennis, Chin, Geis and others,
that the significant criterion variables will be located.
A major portion of the report which follows concerns
literature devoted to the change process.

Buskin, in his review of inservice training, states
that if measurable change in both teacher and student is
desired far more must be known about such training. The
literature review and analysis focuses on this goal.

Purpose of Inservice Training:

It seems necessary to provide a review of the purpose
or purposes of inservice teacher training or education as
a base to determine which variables relating to change are
valid.

There are two interesting observations about the
purpose of inservice training. Asher (p. 1-2) notes that
"historically inservice education was invented to correct
serious deficiencies in pre-service education." As pre-
service training developed into professional college prep-
aration, the concept of inservice education shifted to
the function of training and retraining the teacher as
a means of remaining current with the most recent innova-
tions in education, science and technology. The second
observation, in addition to the change in emphasis in
inservice programs, is that there is a great diversity
of purpose in programs today. This diversity increases
the matrix of potential variables affecting change unless
there are certain constants which can be identified not
only in offerings but in the change process itself. The
present search provides information indicating the possi-
bility there are constants and certain selected principles
related to change.

The purpose of inservice varies according to answers
to questions such as: Which teachers are to be trained?;
What is to be taught?; Is the training for specialized
units?; Is it for retraining?; Is it additional training?;
or Is it for upgrading and preparation for another position?
(UNESCO p. 27-28)

There are many different levels of professionals
within the educational organization today including para-
professional, associate teacher, staff teacher, senior
teacher and master teacher. Each individual at each level
has different needs. Thus, the purpose varies from indi-
vidual to individual, from level to level and from school
to school. (Stillwell, p. 44)

The prime purpose of inservice training according
to several studies, (UNESCO; Kielty; and Westby-Gibson),
is to change educational practice but most importantly
to upgrade and improve classroom instruction.

Kielty identifies a series of specific purposes or
outcomes of inservice training for those involved in adult
education such as: the development of a greater depth of
understanding of the basic principles that underlie good
classroom instruction and performance, increased awareness
of specific skills which might enhance the teaching tech-
niques utilized for the teaching of specific content and
a broader understanding of the characteristics, general
background and way of life of the students that the teacher
will be teaching. No mention is made of the criteria for
measuring the attainment of these or the preceding goals.

Identified in several references is the statement
that the intent of inservice education is to change

instructional practices or conditions by changing people.
(Harris) Other proponents and researchers state that "the
need for inservice teacher training is brought about when
changes introduced in curriculum and instruction are so far-
reaching that teachers cannot cope with them without
retraining." (Wallen, p. 45)

The majority of the writers state or imply that profes-
sional growth activities are most effective when they include
well conceived purposes as well as carefully planned procedures
and evaluative techniques. The question raised in a number
of reports investigating inservice teacher education concerned
the question: "Who determines the purpose?" Apparently this
is a critical variable. It will be discussed later in the
report.

In addition to the general statement of purpose noted
above, a number of specific purposes for inservice education
have been identified. (N.E.A. Research Division, p. 4-5)

1. The new teacher.

2. The teacher undertaking a new type or level of work.

3. Refresher courses for teachers returning to the
   classroom after an absence of some years.

4. Promotion of continuous improvement of teaching
   and teachers.

5. Provide a means for teachers to keep up with the
   advances in the theory and practice of teaching.

6. Provide a means of upgrading teachers in selected
   subject matter and content.

7. Provide a means to attain basic curricular changes,
   approaches to instruction and the total learning
   conditions of the school.

8. As a means of coordinating the total educational
   effort by staff, administration and the community.

Other purposes may include improvement of specific compe-
tencies, increasing knowledge in new or emerging areas of
science, technology, social sciences and the theory of instruc-
tion, reducing new knowledge and theory to practice, converting
professionals trained and experienced in other areas or fields,
upgrading the skills and techniques of those who have regressed
in their area of teaching, upgrading the competencies of teachers
who have been inadequately prepared and providing training in
the utilization of paraprofessionals and others. (Katz, p. 883)

Selected Perceptions:

How one views the purposes of inservice education deter-
mines the criterion variable for evaluation and assessment
and also determines evaluation techniques. Amidon (p. 257)
conceives of inservice training as a problem-solving process
which explores new ways of teaching, new materials that can
be used, new content that can be covered, and new ways of
helping the teacher control his own behavior for professional
purposes.

Amidon believes that inservice programs should be con-
tinuous and not a single shot taken at the beginning of the
year. This implies continuous assessment and evaluation and
the identification of new or alternative variables. The time
frame is different and the goals are different.

The concept of inservice education as a process for change,
specifically planned change, is stated by Harris (p. 15-16)
as a generalization for analysis of inservice programs. Harris
also structures his inquiry on the basis that inservice educa-
tion takes place in an organizational context. Organizational
changes, Harris notes, take place through personnel development.

The question of who is responsible for personnel develop-
ment is a key issue in the literature of inservice education.
The literature supports the conclusion that there is a rather
direct relationship between the type of inservice program
provided and the success of the program. The significant
variable is apparently teacher involvement.

Types of Inservice Programs:

One writer in discussing inservice programs stated they
are carried on in multitudinous ways. It could also be said
that inservice programs range from buzz sessions to team teach-
ing. The literature seems to support the probability that
there are as many approaches to inservice teacher education
as there are individuals involved in preparing and offering
inservice work.

With few exceptions, the validity of type and procedure
has not been researched. The concern for and research related
to types of inservice programs seems to be on a continuum
ranging from administrator-NEA sponsored programs with little
or no evaluation or assessment through teacher designed pro-
grams, college or university programs to national curricular
projects and specially designed programs attempting to identify
critical elements in the change process.

Many programs are developed around themes such as
"individualizing instruction", "improving the mental health
of the classroom" or "teaching for creativity." (Amidon,
p. 256)

Ordinarily the literature supports the contention of Bhaerman (p. 2) that most inservice programs are not based on a total educational philosophy. In fact, the question of "what to teach" and "why" is largely absent from discussions of inservice educational programs. Most programs originate from the administrative suite and are concerned with the operational mode of the educational enterprise. The philosophy generally advanced is that it is the individual teacher's responsibility to maintain professional level competency and to adapt to new innovations.

Most reports on inservice programs cite the negative response of teachers. Several reasons are given for this action, which are fairly typical of the literature and identify several possible variables.

1. Inappropriate activities--selected without regard for purposes to be achieved.

2. Inappropriate purposes--a failure to relate inservice programs to the genuine needs of staff participants.

3. Lack of skills among program planners and directors who design and conduct instructional improvement efforts.

Typical of the type of inservice activities planned by a central source and dependent on the initiative of the teacher in attaining an improvement in instruction are:

1. One-week orientation periods prior to the opening of school.

2. Summer workshops.

3. Building a professional library.

4. Regularly scheduled faculty meetings.

5. Teacher committees on curriculum development.

6. Community surveys.

7. Faculty committees studying school problems.

8. Teachers visiting classes of other teachers.

9. Special induction programs for new teachers.

10. Small study groups working on curriculum.
    (NEA RES. DIV. pp 12-13)

The NEA provides, from other studies, a comprehensive list of activities typical of areas considered to be related to inservice. Included are: extension courses, summer school, correspondence courses, institutes, conferences, workshops, staff meetings, committee work, professional reading, individual conferences, visits and demonstrations, field trips, travel, camping, work experience, teacher exchange, research, professional writing, professional association work, cultural experiences and community organization work. (p. 7)

The National Schools Project (Williams, p. 41) utilized teachers in the planning and encouraged them to generate and field test their own innovative ideas in carrying out the project model. Thus we discover that the type of inservice program offered will depend to a large extent on where it originates. This becomes a critical variable in changing traditional inservice teacher education. If one views inservice education only by type and attempts to identify critical change variables within types it is doubtful if the proper questions will be identified. Amidon (p. 256) suggests that there are two important questions that can be asked of any inservice training program, regardless of its origins, emphasis or point of view.

1. Will teachers be acting differently as teachers in the classroom as a direct result of the inservice training?

2. If there are changes in the behavior of the teacher has the quality of instruction really improved or is it just different?

In the identification of variables affecting change in inservice teacher education, questions such as these probe the essential elements. For instance, the educational establishment has for years operated Friday evening and Saturday morning courses for full-time teachers who commute from their home area to a college or university some distance away. Examination of this type of inservice credit and degree oriented inservice program on the basis of the above questions provides insight as to why consideration of planned programs with built in evaluation is crucial if change is desired.

Current Practice--Assumptions:

The variables in the inservice equation can be grouped into a number of broad categories including human factors, change, learning and the social environment. How each of these areas interrelate and which variables are most critical in changing traditional inservice programs will depend upon one's assumptions about each and assumptions about the total matrix. The design of the inservice program and the utilization of resources is altered if it is concluded that the

first two years of a teacher's experience are the most crucial.
Rubin (p. 4) believes this to be so based upon his research.
He believes that it is during this period that attitudes and
beliefs are shaped and the basic characteristics of the teach-
ing style established. This same research provided evidence
suggesting:

> ....that teachers cannot learn to teach until
> they begin to work with children who are learning;
> it is in these first interactions that a funda-
> mental sense of purpose and method is born.

Although the content of most inservice programs is deter-
mined by administrators, Edmonds (p. 35) believes the teacher
is the source of content. Edmonds would support Rubin's
conclusions and place emphasis on developing programs which
provide the means for an individual to grow and develop
insight so he can identify progressively his competency
needs. Edmonds then assumes that this is best accomplished
after teachers enter service and can come only with educa-
tion.

Present practice stresses that in a professional life
intelligent training assumes intellectual training. There
seems to be support for the position that "a program which
seeks to develop a particular teaching skill ought, at the
same time, to incorporate the related theoretical ideas."
(Rubin, p. 11)

In addition to integrating theory and practice other
variables concern the integration of three components of the
teaching-learning equation, namely, knowledge of subject,
knowledge of teaching method, and knowledge of child. The
research seems to provide evidence that inservice training
programs should not be attempted unless they are well planned,
comprehensive and integrated programs with specific identifi-
able objectives.

Also, it is possible to relate other assumptions which
alter the problem of identifying variables. Flanders included
several assumptions in his project which provide a base for
designing inservice programs. Flanders assumed:

1. Only a teacher can change his own behavior.

2. Changes can occur in teaching method.

3. No one pattern of teaching can be adopted
   universally by all teachers.

4. The most effective environment for change
   allows for freedom of people to express their
   feelings and ideas, encourages self direction
   and is free of coercion.

One basic assumption stressed by numerous researchers in the field of change and inservice teacher education is that the processes of inservice education are fundamental to producing change in education. In addition, Edmonds (p. 17) and others believe that the significant element is "personal growth" on the part of those involved in the educational enterprise. Almost all who make this assumption also assume that inservice teacher education is a teaching-learning process and would support Bradford's conclusion, based on present research and experience with processes of learning and changing:

1. That the teaching-learning process is a human transaction involving the teacher, learner and learning group in a set of dynamic relationships. Teaching is a human relational problem....The relationships among learners and between teacher and learners have a great deal to do with the ultimate learning.

2. That the target of education is change and growth in the individual and his behavior; and thus in his worlds. This is a deeper and broader goal than cognitive learning only.

Why inservice programs do not change and why they do not provide change can be understood when one reviews some of the assumptions people hold about change. Lavisky reviewed these and found:

1. ....people contend that a good product or a good idea will succeed on its own merits.....that if a research report shows a better way of reaching an educational objective, that teachers will automatically tread the new path. Experience shows otherwise.

2. ....people believe change is linear in nature, that is, that it proceeds in stages from research to development to tryout, to adoption, to utilization. Change is not linear.

3. ....the belief that when someone is successful in getting an educational innovation adopted the job is complete--that no further action is required.

Lavisky (p. 5) advises observers of the inservice training scene to "look into the classrooms and you will find teachers who, only a year or so ago, were singing the praises of T-Groups, Human Relations Sessions, and so forth, but now they have reverted to their old behaviors."

The idea that traditional inservice programs can be changed by "doing something different" is challenged by Amidon's

assumptions. (p. 260) In fact, the task becomes highly com-
plex and requires a high level of intellectual effort. Amidon
believes the following assumptions are largely ignored in
current inservice training activities.

1. ....ideas about teaching and learning must be
    organized into concepts which have meaning in
    terms of overt behavior. Ideas about teaching
    which cannot be related to overt actions are
    less likely to maintain a consistent meaning
    when the talking stops and the teaching starts.

2. ....concepts about teaching and learning become
    useful to the extent that they can be applied
    personally. Concepts about teaching must
    ultimately be coordinated with one's own be-
    havior. Concepts about pupil behavior must
    ultimately be applied to one's own class.
    Concepts about how to use instructional materials
    must ultimately be explored in one's own class-
    room.

3. ....insight into principles of effective teaching
    comes about through personal inquiry. Teaching
    must be seen as a series of acts which occur with
    the passage of time. Instantaneous decisions
    must be made which have immediate consequences.
    Teachers can learn to recognize decision points,
    to become aware of more alternatives, to predict
    consequences accurately a higher proportion of
    the time, and to develop plans for controlling
    their own authority.

Change:

Change and innovation are terms used interchangeably in
educational literature pertaining to inservice education.
Innovation is a more inclusive term, for it is possible to
have change without innovation but not innovation without
change. The question raised in the present literature review
would seem to put more emphasis on innovation. However, in
keeping with the use of the terms in the literature both terms
will be used depending on their use in the literature cited.

The question of the present literature search is to
identify those variables which affect change or innovation
in inservice teacher education, both positively and negatively.
As Geis (p. 3) notes, the record is bleak. In his review of
the literature on educational innovation he developed some
generalizations which provide insight as to where to look
for the critical variables.

....The history of educational innovation, as we
read it was dismal. It was marked by disappointment,
disillusionment and despair, both on the part of the
innovators and those for whom the innovations were
intended. Repeatedly, under quite different conditions,
innovations were introduced only to fail a short time
later.

Geis' second generalization provides a perspective which
points the direction toward areas of potentially critical
variables. Geis notes that his team came away from their
"study of innovation with the distinct impression that the
school was, at best, an unhappy recipient of innovations,
at worst, a highly conservative bureaucracy resistant to change
and 'intensely' passive."

The interesting observation by Geis, however, is that the
process "was, for the most part, a linear system; changes
began in Schools of Education, in curriculum development proj-
ects or in special demonstration programs and flowed to the
school." Studies of change, innovation and invention have,
however, stated emphatically that change and innovation do
not occur in a linear mode. The problem seems to be that
educators think and plan in linear modes. When the programs
failed to produce change most program planners shifted to
another plan without determining why change did not take place.
Bennis (p. 42) states that a deficiency in existing theories
of social change is that they tend to be weak in describing
and explaining the variables of the situation which are subject
to manipulation. Several researchers have attempted to identify
variables and elements subject to change. Westby-Gibson (p. 3)
in discussing the subject reminds us that schools are formal
organizations and can be changed in two ways: by changing their
structures and by changing their personnel. Edmonds (p. 12)
believes the elements of the school program which can be
changed are: (1) the purposes of the school; (2) the physical
environment; (3) the quality and quantity of instructional
materials; (4) the content of the curriculum; (5) the organiza-
tional framework of the school; and (6) the performance and
behavior of the professional staff. Edmonds continues his
discussion by reminding us that the critical variable is the
individual. He notes:

> Educational change is fundamentally dependent upon
> change in people's attitudes, understanding, skills
> and behavior. The changes which occur in terms of
> buildings, instructional materials, school organiza-
> tion, curriculum content, operational processes and
> school purposes are in reality but manifestations
> of change in the persons responsible for those
> elements of programming. (p. 16)

II. State of the Art:

During the last decade or so much effort has been
extended to determine the best procedures for inservice
teacher education. This research effort has been supported
almost totally by the United States Office of Education.

This effort by the U.S.O.E. has made a major contribu-
tion toward answering questions about inservice teacher
education. The summaries which follow are samples of
the research effort and provide some measure of the state
of the art. In general, the comments and statements
have been reported in several research studies.

Most research studies on inservice teacher education
conclude that when changes occur they are the result of
a continuing program of training. Amidon (p. 261) dis-
covered that "opportunities for applying new insights
immediately in the classroom and for obtaining feedback
about one's behavior were found to be helpful." The appli-
cation phase of most studies seemed to incur the most
difficulty. Mackie and Christiansen found that the research
to application process never has been properly developed
for the psychology of learning for instance. They believe
the reasons are traceable in large part to the research
philosophies of experimental psychologists as well as
the fact that potential users have been reluctant to make
the effort necessary to realize the benefits of the research
findings.

Among the many efforts directed toward the concern
of inservice teacher education, none is probably more
directly related to the present search than the study
done by Rubin. His project attempted to find relation-
ships among some of the more important variables which
might affect teacher growth. Rubin's findings corroborate
with Amidon's, particularly with reference to the time
variable. It was found that although "teachers are more
effective when they have alternative strategies with
which to teach a given lesson, each of these strategies
must be acquired systematically and each must be perfected
through cumulative practice." (Rubin, p. 13)

Williams designed an inservice program to sensitize
teachers to new materials, knowledge and strategies for
use in the classroom to systematically plan and develop
creative thinking. The project involved an attempt to
apply research findings by adapting them to regular class-
room practices. The evidence presented found the teachers
did benefit from the training.

Change of teacher attitudes and behavior was also
reported by Butts in his work with science teachers. As

was noted previously behavior and attitude are closely cor-
related. Interestingly Buttas reported that previous teaching
experience and school location appeared to be unrelated to
attitude change.

On the other side of the ledger, the CERLI program on
training those who function as trainers in continuing education
reported that the hypothesis that the training program effected
behavioral changes enabling the participants to effectively
function as Specialists in Continuing Education could neither
be categorically accepted or rejected.

Perloff's study of the NDEA Summer Institute Program sup-
ports the previous reported research in relation to the time
variable. She reports "that it is is probably unrealistic,
and perhaps even unfair, to expect programs of the length,
scope, and nature of summer institutes to make sweeping, radical
and immediate changes in the participants' knowledge, attitudes,
and teaching practices." Other research reports the necessity
of involving the entire school when teaching practices are
altered. Perloff identifies several additional variables in
her recommendations derived from the study and, according to,
her, applicable to all educational development programs. In
summary they are:

    1.   Training programs must always be sensitive to the
        interests and needs of the participants. It was
        noted that data from Project I enabled the researchers
        to state unequivocally that the educational objec-
        tives and interests of teachers were at variance
        with those of faculty members and directors of the
        institutes.

Perloff believes this underscores a critical variable
affecting change in inservice teacher education programs,
namely, the importance of including participants in all pro-
gram planning and development stages.

    2.   Training programs should be relevant to a major
        and significant part of what the participants
        themselves teach. It was concluded that topics
        which were esoteric, highly specialized or too
        remote from the usual school curriculum were a
        waste of time, effort and money.

    3.   The training should be practical in orientation.
        By this the researchers meant that it is important
        to develop a variety of materials which can be
        readily used by the participants in teaching,
        during training or when they return to their
        classrooms.

This finding supports the application to practice variable identified also by Amidon among others.

Research has also been done with reference to variables related to school size and inservice teacher education. Apparently larger schools do a more adequate job of inservice teacher education than do small schools. The most inadequate inservice programs occur in small secondary schools.

Good inservice teacher education programs on a continuing basis outside of on-going research studies and curriculum projects are the exception. Flanders (p. 137) notes that:

....In rare instances, which are magnificent exceptions, the improvement of instruction becomes an integral part of the teacher's professional world, a regularly scheduled activity with support and resources provided by the administration.

Flanders concluded after several years of working on a project designed to help teachers change their behavior "that educators have not really come to grips with the problem of helping teachers change their methods of instruction." Some of the variables with which designers of inservice programs must be concerned were identified during the course of Flanders' research. He found that learning new ideas about teaching evokes emotional reactions and shifts in attitudes. A program which recognizes this factor, plans for it and permits changes within the program to accomodate these elements will be more likely to produce desired changes in teacher behavior.

Consistency of method between the inservice program and the teacher's classroom must be maintained. Flanders states that "Investigating how teachers can create more independence in their own classrooms under a relatively rigid pattern of inservice instructor dominance creates an inconsistency which will interfere with learning."

A number of researchers stressed the need for inservice programs to provide a balance between theory and practice and the verification of theory in practice. Rubin and Flanders both support this principle. Flanders believes inservice training programs can provide conceptual and procedural tools necessary for teachers to experiment with their own teaching methods while Rubin believes that teaching competence involves, among other things, knowledge of the ideas which are to be taught. The intellectual element is apparently a primary factor in successfully applying new teaching practices and theory.

If programs of inservice teacher education are to be successful in improving teacher competency, Rubin (p. 5)

found that in addition to the knowledge of the ideas which are to be taught, that the teacher must attain a mastery of teaching tactics which are most successful together with a valid system of beliefs about what the child is like and what he can do.

Other research provides evidence that wholistic, school based, total staff involvement type inservice programs are most effective. Several studies, including Rubin's, found that teachers make excellent trainers of teachers.

Flanagan's review of the Euclid English Demonstration Project reports with respect to inservice programs that:

1. The real work must be done within the departments. Outside experts are only temporary.

2. Ultimately the individual teacher must commit himself.

3. There must be a supportive environment within the department for individuals initiating change.

4. Leadership is necessary, particularly in the improvement of the curricula.

5. Support by the administration is essential.

One variable noted throughout the literature on inservice teacher education, particularly in those programs where evaluation was a strong component, was the finding that the more precisely a training objective was stated, the greater the probability the program would succeed.

In general, it can be concluded that most inservice education is at best loosely structured, without specific goals and operated on experience rather than research. Evaluation and assessment play minor roles in the typical inservice offering. The individual differences which educators discuss so frequently are ordinarily ignored in the design of inservice programs.

The present review of the literature provided no reference of any depth concerning personnel serving as trainers. One report noted that university personnel were poorly prepared to serve as trainers while administrators and supervisors seldom had the time necessary to devote to training. (Buskin, p. 23)

The great divergence of needs among teachers, schools and communities is a growing realization among educators planning inservice programs. Several attempts to meet the great variety of teaching conditions is under investigation in several pilot programs. The ad hoc contractual system for Teachers in the Technologies is an example. (Cohn)

III. Selected Approaches--Organization:

Research and program reports describing results of in-
service teacher education programs make two points clear and
in so doing identify two interrelated variables, namely,
philosophy of education and organizational structure. These
are in addition to variables discussed previously including
factors such as: continuity of programs over time, resources
allocated to the effort, teacher participation in program
planning operation and evaluation and the specification of
inservice objectives in measurable terms directed toward the
improvement of instruction.

One conclusion can be stated with considerable finality
If it is desired to change traditional inservice teacher
education programs, then the organization structures must
be altered to promote the proposed changes. Introducing
new programs into old organizational structures interjects
the element of failure from the beginning.

It is also obvious from the research, program reports
and other references concerning change that change can be
planned or unplanned. Some organizations are structured
for planned change; others are structured to maintain the
organization and its programs.

Directly related to organizational structure and change
is the element of program and educational philosophy. These
elements determine the types of programs offered, who plans
the programs, the role of teachers, administrators and others
in the planning and operation of an inservice program and,
among other things, the purposes and goals of inservice
programs. Focus on the issue is provided by Geis. (p. 7)

It would seem that a system which is said to be
devoted to developing in children problem-solving
behaviors, creativity, and imagination should
itself exhibit these activities. It should be
a place in which exploration is a way of life,
a place in which change is recognized as charac-
teristic of life itself. From an instructional
point of view, then, the educational institution
should be the site of innovation.

Current literature in the area of cybernetics and systems
provides some insight into organizations. Thomas in his dis-
cussion of decision making and organizations reminds us that
school systems, as well as all organizational systems, are so

structured that any change in the performance of one part
of the system will have some effect on the performance of
other parts of the system. He notes that "just as human
beings develop ways of receiving the world that help them
to cope with the situations in which they find themselves,
so do organizations learn to look at their world in ways that
help them better to understand the forces that are constrain-
ing them." Thomas also states:

> Certain characteristics of organizational behavior
> seem to impede the learning of new ways of looking
> at the relevant aspects of the organizational environ-
> ment.

How are inservice programs organized and what affect
does organizational structure have upon program, goals, and
the improvement of instruction? Asher (p. 13) classified
inservice programs into three categories in his review. They
were: (1) the centralized approach, (2) the decentralized
approach and (3) the centrally coordinated approach. There
are many variations, of course, to these gross categories.

The research on inservice teacher education supports
Asher's conclusion that in "the centralized approach the
central office dominates the inservice activities and gives
little attention to the psychology of change, thereby ignoring
a body of research which suggests that individuals are more
likely to change when they work on problems significant to
them and when they share in the problem solving decision."
(Asher, p. 13)

The evidence is on the decentralized approach if concern
is with change of the instructional program through inservice
education. When the decentralized approach was used, Asher
reports that changes as the result of inservice programs
included: new guides and courses in subject areas; improved
services to students; better student achievement; revised re-
porting systems; improved practices in teaching, grouping
and long-range planning. Also noted were improvements in
professional attitudes, better understanding of children, more
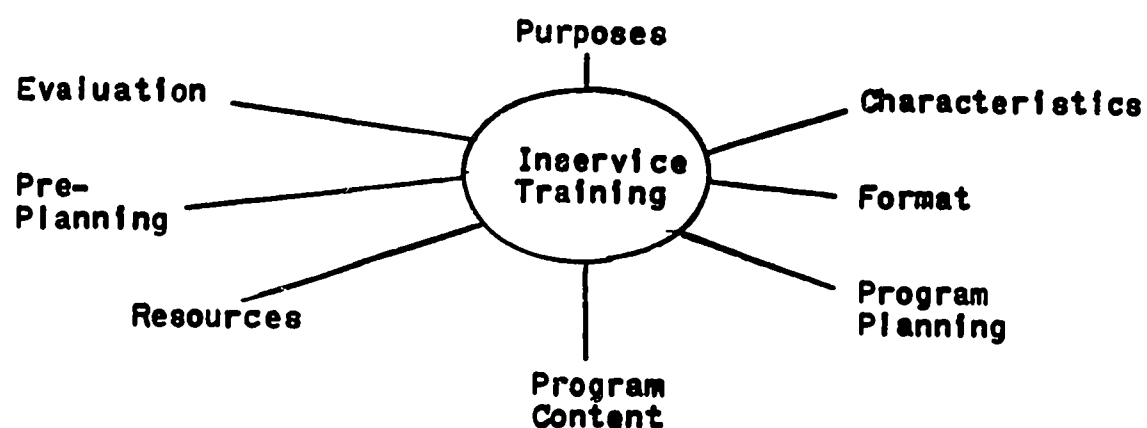exchange of ideas between teachers and a closer cooperation
of faculties.

The decentralized approach is not without direction and
Kielty reminds us that it is essential to have an organiza-
tion which not only accomodates the human factors in planning
and operating the inservice program but accomodates the many
details which are purely mechanical, but carry important
implications for the success of the inservice program.

What is needed is a concern for the whole as well as the
parts. The following diagrams provide an overview of some of

the structural relationships which have been identified in the area of inservice education. The focus is on organization and the conclusion by Westby-Gibson that schools, as formal organizations, can be changed in two ways: by changing their structures and by changing their personnel.
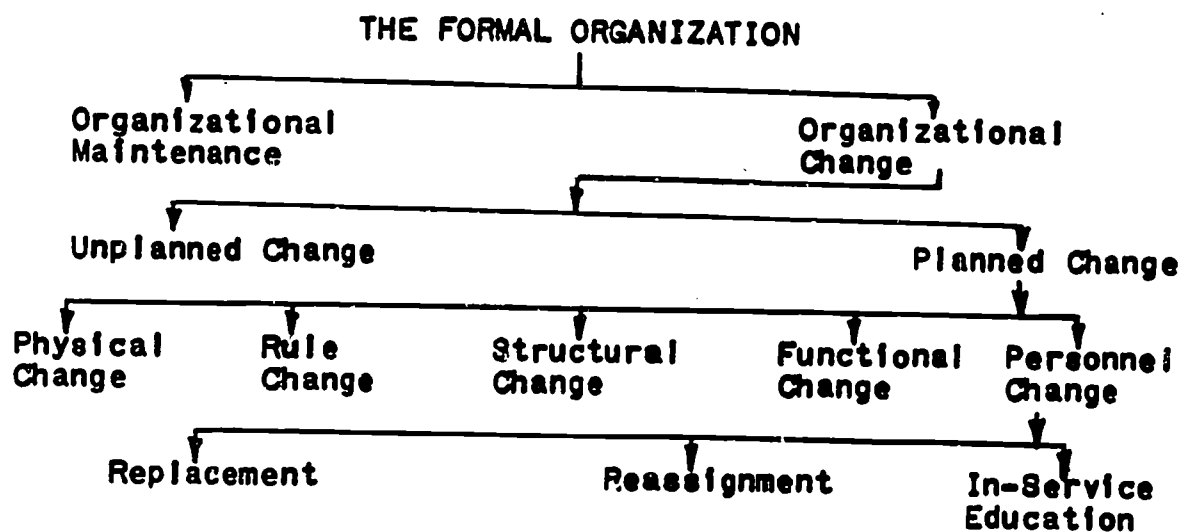
Figure I   Kielty

Purposes

Evaluation   Characteristics

Inservice
Training

Pre-
Planning   Format

Resources   Program
                          Planning

Program
Content

Figure II   Bessent, p. 16

THE ORGANIZATIONAL CONTEXT FOR IN-SERVICE

THE FORMAL ORGANIZATION

Organizational   Organizational
Maintenance   Change

Unplanned Change   Planned Change

Physical   Rule   Structural   Functional   Personnel
Change   Change   Change   Change   Change

Replacement   Reassignment   In-Service
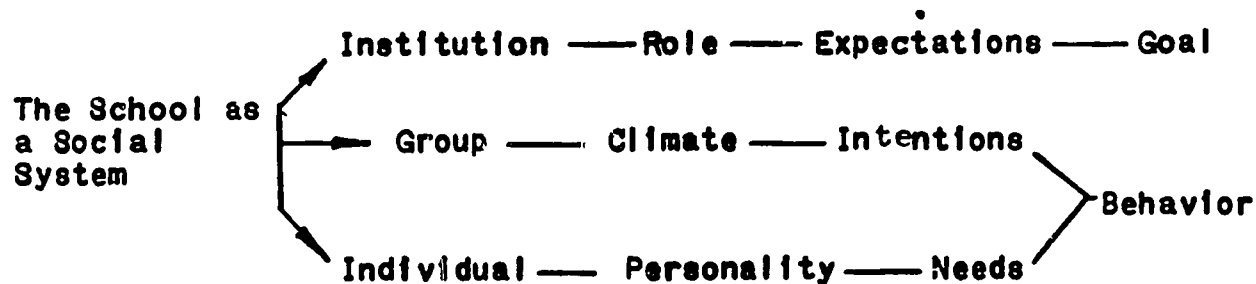   Education

Schools as formal organizations can be changed in two
ways: by changing their structures and by changing their
personnel. Jacob W. Getzels and Herbert A. Thelen (1960)
proposed a framework for the study of the school as a social
system that appears relevant here and is illustrated by the
following diagram.

<u>Figure III</u>   Westby-Gibson, p. 3

A MODEL FOR CHANGE

Institution ——Role —— Expectations —— Goal

The School as
a Social   —— Group ——— Climate —— Intentions
System   Behavior

Individual —— Personality —— Needs

IV. Selected Variables:

Inservice programs can focus on any single part of
the educational enterprise or they can involve entire
cities, counties or regions such as is exemplified by
the Title I Project in Louisville, Kentucky. The wholistic
approach, utilizes outside forces (federal money, consult-
ants and other elements external to the on-going system),
together with attempts to evaluate and structure the in-
service program on the basis of performance objectives.

Ninety percent of all teaching personnel will
demonstrate increased sensitivity to the nuances
of teacher-pupil interaction as measured by the
gains on pre-to-post test scores on the Pupil
Perception of Class Period instrument.

This procedure interjects numerous new variables
which will directly affect in some way the question of:
"How do we change traditional inservice teacher educa-
tion programs?" There are, of course, other variables,
already cited, which must be part of the program if it
is to succeed. To date the evidence is not in.

Not all schools can approach the question of in-
service teacher education as has Louisville and other
large educational units. Small schools do not have the
resources in personnel required to operate, without out-
side help, successful inservice programs. O'Hanlon (p. 10)
suggests that one way of expanding the small schools'
resources is through a number of small schools banding
together for inservice functions. As Morrison reminds
us, the necessity for an "outside force" as a catalyst
for change is vital. In the case of small schools the
variable may be legislation, federal programs, state
programs or the development of training centers which
focus on small school inservice teacher education.

Almost all research reports stress the function
of evaluation in promoting planned change. This is
probably one of the key variables and has been incor-
porated into all of California's Title I Programs.
Each program must have a means to evaluate:

1. specific achievement goals for students and

2. measurement of the improvement of teacher
   skills.

Although evaluation is an important tool in the
change process, it is seldom utilized except in a

superficial fashion. Reports in the literature state that
the issue is many times one of personnel. The expertise is
lacking. Related to this factor is the failure to build
evaluation into the project or program as an integral phase
of the total operation. In several reports it was noted
that evaluation was omitted because of cost factors and time.
The emphasis changed from one of research and evaluation to
one of doing and action.

The design and format of inservice programs affects
the change process. White (p. 13) notes it is possible to
design an inservice program which will answer the need of
classroom teachers to become acquainted with programs (new
curricula) and their philosophies. The implication is that
one or the other will not bring about change.

Another variable pertains to the question of whether
teachers will gain as much from an inservice program in a
local setting as from a similar one on a college campus.

Curriculum projects have been utilized to alter class-
room practices and as a format for inservice education programs.
White cites the fact that curricula have been developed in the
mathematics and sciences by cooperating groups of academicians,
psychologists and teachers. The question raised is:

....Since these curricula have been developed for
one primary reason--change in classroom practice--
it is of interest to ask to what extent are these
programs capable of initiating change?

White concludes that an ineffective teacher will not
suddenly become effective with the adoption of new curric-
ulum materials. Curriculum may be considered, then, to be
an input to inservice teacher education programs but not a
variable which alone would function to change traditional
inservice teacher education programs as is evidenced by the
adoption record of new curricular programs.

Westby-Gibson (p. 76) confirms this point of view and
states that in their inservice programs they will continue
to use the curriculum as a basis.

The question of attitude is constant throughout the
inservice literature and relates to several areas of the
inservice equation including the philosophy of teaching.
Apparently, if inservice programs are to be changed to en-
hance their impact, the questions of attitudes, beliefs,
philosophy and other similar questions must be entertained.
A number of researchers and inservice educators have con-
cluded that teachers with negative attitudes and resentment

toward inservice education should not be forced to partici-
pate. Westby-Gibson states that the negative attitudes were
damaging to others who were eager to learn and participate.
As a result, they have not conducted a program, since dis-
covery of this element, which includes teachers who are required
to take the program. Throughout the literature on inservice
education and change the involvement of the individual, together
with freedom of choice, seems to be a significant variable.

Correlated with the volunteer or freedom of choice element
are criteria utilized by researchers and inservice workers in
the selection of schools. With both factors, freedom of choice
and school selection, the concern is with variables which are
known to increase the possibility of success. The basic prin-
ciple of operation is to start the inservice or change program
when and where the attitude toward change is positive. Shanlon
reports that in the selection of schools for the IPI program
(Individually Prescribed Instruction) they insisted on the
following criteria:

1. Administrative commitment

2. Teacher commitment

3. Participation in the research

4. Retraining of administrators and teachers

5. Uniqueness of the situation

Other factors external to inservice teacher education
programs which alter or affect the internal components and
thus the possibility of changing the traditional inservice
program have been reported by Wallen. (p. 75) They are:

1. The nature of the community in which a school
   is located and the pressures and values within
   the community as well as its resources,

2. the policies of the school district,

3. the nature of a particular school, its goals,
   resources and administrative arrangements,

4. the personal style and characteristics of the
   teachers involved and

5. the nature of the student population.

It is obvious from the literature that the question of
changing traditional inservice teacher education programs is

interrelated with many subtle and difficult to comprehend
variables involving people and organizations. For instance,
Wallen (p. 48) lists the following questions as being
critical in the selection of schools and teachers for
the expenditure of inservice funds and resources. Each
category and each question identifies a variable to be
considered in attaining change in inservice education.

1. Climate and support from the administration.

    •Can and will the district provide <u>released
    time</u> for the teachers if it is required as
    a part of the pattern?

    •To what extent does the principal commit
    his time to attend the in-service sessions?

    •What effort, within limitations of his
    financial resources, will the principal
    make to secure needed materials?

    •To what extent will teachers be permitted
    to assume new roles as disseminators when
    this means absence from the classroom?

    •What avenues of communication will the
    principal set up for providing information
    for other teachers in the school who are
    interested in the project?

    •Will the teacher from a given school be the
    only one from his building, or will there
    be a cluster of teachers?

    •To what extent is the district committed
    to other innovations that may require funds
    and the time of both teachers and district
    office personnel?

    •Did the school meet the program's need for
    balance in the socio-economic level of the
    pupils?

2. The teacher's attitude, continuity of service and
    rapport with fellow teachers.

    •To what extent is the teacher challenged by
    new ideas? (Teachers who were committed to
    their present method of teaching or teachers
    who consistently rejected new ideas were
    not considered for the inservice program.)

•To what extent may we expect continuity of
service from the teacher?

•What is the teacher's rapport with her
fellow teachers?

The question of teacher preparation is evidently a
factor related to change. Williams (p. 42) found it was
difficult to get all teachers to change strategies of teach-
ing and be willing and flexible to innovate. He found that
most teachers were well informed about stereotyped methods,
scope and sequence, and subject matter content, but that
few were adequately prepared in the more scholarly approaches
of productive and divergent thinking, the involved concepts
regarding a child's various intellectual abilities, and
current research on conceptual levels of thinking among
young children. Each of these elements identifies a barrier
to changing the traditional inservice teacher education
program.

V. The Change Process--Background:

One fundamental conclusion reached during the review of literature relating to variables affecting change in inservice teacher education was that education profession, as a whole, has very little insight into the process of change. Furthermore, the most significant word in the equation is _change_. Therefore, the remaining portion of the literature review will be concerned with the change process as a means of establishing the more significant variables concerning the question of changing traditional inservice teacher education programs.

All experiences alter, in some way, the behavior of individuals. However, most researchers would support Geis in his contention that the goal is not just any change but systematic, progressive, cumulative change which results in progress in attaining better and better systems of instruction. (p. 9) The term discussed earlier, namely, innovation, best fits this definition. Innovation refers to deliberate or specific change and involves an individual, group, institution of culture functionally incorporating a concept, attitude or tool that had not been incorporated before. (Bhola, p. 8)

Many disciplines are concerned with change and the change process. However, it is generally agreed that an inclusive model of the change process or a general theory of change does not exist. Westby-Gibson believes that change in education has been a random process with most of the research directed to the content of change and not the processes of change. (p. 15)

Morison (p. 7) would disagree and states that much of his research and reflection has been spent on four distinct parts of the process:

1. The condition of things at the point of origin of any mechanical change,

2. the character of the primary agents of change,

3. the nature of the resistance to change and

4. the means to facilitate general accomodation to the changes introduced.

In his study Morison narrated the processes involved at each stage clearly and succinctly. Students of educational change can benefit from the analytical historical approach and the case study method. The process of change, as described by Morison in his study of bureaucracies, directs attention to

a possible fallacy in the thinking of educational change
proponents. It is a question of innovation and the accep-
tance of the innovation. These appear to be two distinct
phenomena according to Barnett (p. 292-3) which have
different determinants. Thus the proposal by educators
that teachers become innovators, change agents and receptors
of innovations all at the same time is difficult to accept
on the basis of the evidence presented by Morison and Barnett.
Barnett reminds us that the issue of whether to accept an
innovation or not confronts many more people than does the
question of whether to create or not.

Change as a process takes place within given environ-
ments which have various configurations or social units.
Bhola (p. 8) identifies four configurations each of which
implies variables affecting change.

1. Individual

2. Group

3. Institution

4. Culture.

Of all the researchers concerned with educational change,
Bhola is perhaps the most precise in setting forth the condi-
tions which must exist before it can be stated that an innovation
has been incorporated into an educational system. This incor-
poration Bhola calls diffusion, which together with his analysis
of stages and definitions correlates closely with the concepts
of Morison and Barnett. Diffusion is defined as:

    ....the process involving information consumption,
    social interaction, and behavioral change through
    which an innovation is incorporated into a con-
    figuration, tending toward a socio-psychologically
    stable and integrated relationship with the cognitive-
    affective-motor structure of that configuration. (p. 9)

Bhola states that <u>total diffusion</u> occurs <u>only</u> after the
service and support stage and when the incorporation of the
innovation has become rewarding and a maintenance sub-system
has become a part of the system.

There does appear to be a hierarchy in the change process
which is associated with the degree or level of change required.
Chin suggested in 1964 that there were five levels.

1. substitution

2. alteration

3. perturbations and variations

4. restructuring and

5. value orientation change.

We thus have the suggestion that the change process does
have structure and that rigor can be attained to assess change.
Variables associated with changing traditional inservice teacher
education programs are located at each level of the process.
The question of attaining change which will meet Bhola's test
involves another significant variable which is the process of
communication and interpersonal relations. Bhola reminds us
of a rather simplistic yet profound concept.

In the last analysis, the question always comes down
to the particular relations between two individuals,
the donor or carrier of an idea, for whom it is more
or less habitual, and a potential receiver or adopter,
for whom it is more or less alien. Idea transference
requires some means of <u>communication</u> between a person
who already has the idea in question and another
person who is to be made acquainted with it. (p. 291)

Those concerned with changing traditional inservice teacher
education programs must consider the issue of knowledge level
on the part of teachers and those responsible for the change
process. Throughout history, as Morison's studies remind us,
no man ordinarily could get out very far ahead of the state
of the art or the existing thresholds of existing knowledge.
It would also be necessary, if inservice programs were to
meet Bhola's test of diffusion, to be reminded of Morison's
conclusion that there is not much profit for the state of one
art to attain a considerable advance unless the state of other
related arts supports a general forward movement.

Many inservice teacher education programs operate on the
same myths about change that lay people hold. McClelland
(p. 5) has examined several of these myths and discussed them
in three propositions.

<u>Proposition #1</u>: A good product will succeed on its
own merits or stated differently, "Information is
sufficient for change."

In relation to this proposition McClelland reviewed the
efforts of the Technology Information Program undertaken by
the National Aeronautics and Space Administration. The program
distributed information about innovations and developments
accruing through the space effort with the idea American
business and industry would use them and thereby prove the

concept of "spinoff" from the space effort. The program was well financed and, according to McClelland, elegantly organized. There have been three evaluations of the dissemination and utilization effort. The conclusion reached by all three was, as reported by McClelland, pitiful.

Proposition #2: The introduction of an innovation is a final act, and no further attention is required.

The question of maintenance of change is at issue in this proposition and is related directly to Bhola's concept of diffusion and the creation of a sub-system for the innovation. The maintenance variable is another part of the change process, the importance of which is summarized by McClelland.

Obviously, a plan for maintenance and feedback is essential if the planned change is to persist. Training aids and devices are today gathering dust in storerooms throughout the country. Teachers and managers have reverted to their former practices. (p. 5)

Proposition #3: There is an orderly process from research to development to use. First, the scientist discovers and then verifies a fact or principle about a natural phenomena, perhaps defining the relationship among a set of variables. Then the technologist develops ways to use this information in order to get things done. Finally, the development is put to use.

Studies of the process of change definitely reject the linear model. Innovation and change generally occur in a network fashion with much movement back and forth between research, development and use. Morison's statement about moving too far in front of the state of the art applies here.

Educational change and inservice programs designed to promote change have largely ignored the information already available on change. Inservice programs are still designed which attempt to obtain change and innovation through several limited and doomed to failure practices.

1. Innovations composed of materials produced outside the school and unceremoniously imposed upon it with a minimum amount of preparation, especially of the teachers.

2. Demonstrational Innovations. Expert teachers or advocates of a particular method or technique show teachers, often captive audiences of teachers, how to perform. The method is ready made and imposed upon the system.

3. Innovation by Expertise. Specially trained
people are made available. Audio-visual
experts, curriculum experts and other spec-
ialists are placed next to or occasionally
in the school. (Geis, p. 3-4)

The variable, which at this stage stands out most clearly,
is the lack of knowledge about the change process by educators
together with the lack of properly prepared change agents or
professionals who can function effectively in aiding the educa-
tional enterprise in the improvement of instruction through
the adoption of selected and proven innovations.

Resistance to Change:

It is a rather widely held opinion that teachers, many of
whom are characterized by their submission to authority,
formalism and rigid and stereotyped thinking, are also hostile
to educational change or to everything that seems to them un-
usual. Research into change does not substantiate this point
of view. In fact, Rubin (p. 20-21) believes that we have
greatly overestimated the teacher's psychological resistance
to change. From his research Rubin concludes:

Given a legitimate objective, adequate opportunity
and good reason to achieve it, teachers seem to
respond with unsuspected eagerness.

Some individuals accept change, some reject it. The
question raised by Barnett is: "What attitudinal biases
characterize the acceptor as contrasted with the rejector
when all the other variables of the acceptance situation
are held constant?" (p. 378) The question is why some people
accept change and others reject it. Are attitudes the criti-
cal variable? Do the attitudes of personnel toward inservice
education create a barrier to the success of the program?
Factors such as indifference, negativism, resistance lack
of interest, complacency, or inertia have been singled out
as limiting efforts at growth through inservice techniques.
(N.E.A. Res. Div., p. 11)

Resistance to change may be a myth as Rubin suggests.
It may also be real in the real world of education as Geis
contends. As Geis structures the question of teach resis-
tance to change he sees it as related to the reward structure
of the institution of education.

....Why should she change? Why should she adopt
the innovation? What does it cost her and what
does she gain? To rely upon the natural triumph
of the goodness of the innovation over the teacher's,

the student's, and the school's existing sets of
rewards and punishments is to foredoom effective
innovation. (p. 6)

There is apparently a psychological equilibrium each
individual attempts to maintain unless the benefits of his
present state are less than satisfactory from his frame of
reference. Unless there is dissidence within his environ-
ment, the individual will elect to maintain his present
state. Barnett (p. 378) offers two hypotheses which provide
a base from which to analyze the question of resistance to
change.

1.   ....an individual will not accept a novelty
     unless in his opinion it satisfies a want
     better than some existing means at his dis-
     posal....the thesis is that a novelty has
     less appeal for those who are enjoying the
     benefits of its functional alternative than
     for those who are not.

2.   ....there are biological determinants for
     the lack of satisfaction that is character-
     istic of individuals who are predisposed to
     accept a substitute for some accustomed idea,
     and that these determinants result from the
     interplay and adjustment of an individual's
     conception of himself and the events of his
     life history. ....the essential point is that
     people develop tastes and preferences under
     the influence of particular experiences, and
     these orientations are significant for the
     acceptance or rejection of new ideas. (p. 379)

Barnett provides a framework for determining those
individuals who are more receptive to change. However,
there is the real world of the teacher where insecurity
and resistance to innovation does exist. When the teacher's
world is invaded by outsiders mandating a change from the
old and familiar teaching procedures and content to new pro-
cedures and content, there is considerable insecurity.
Teachers are threatened. However, Geis maintains that the
threat is selective and that there are new roles for the
teacher; new alternatives and rewards which are not part
of every change model.

....To the extent that the teacher is an audio-
visual device she is doomed by the development of
more efficient and more sophisticated hardware.
To the extent that she is a reinforcer dispenser
on a random delivery schedule she is threatened
today not only by theories of instruction and

learning but by new approaches to child develop-
ment and maturation. In an innovative system a
teacher could pursue many other roles; she could
help design, develop, try out and evaluate large
and small scale innovations. She could assume a
more dignified and, I think, more rewarding
position as manager of, and investigator of,
student learning. (Geis, p. 7)

How can the educational establishment encourage innova-
tion in the inservice teacher education programs? What modes
of operation would decrease resistance to change and enhance
innovation? McClelland reports some interesting observations
on research in this area. In a study by Ross it was found
that school teachers acquired most of their ideas outside
their communities. The evidence seems to support the point
of view that dissemination is facilitated when potential
innovators are among those who travel. They are more cosmo-
politan rather than local. The "localite" is more resistant
to change.

It was also found that those individuals who "move freely"
among research, development and use activities were more inno-
vative. These individuals generally belonged to more formal
organizations and had more informal friendship, discussion and
advice networks. (McClelland, p. 11)

Individuals in the latter category apparently have adopted
a positive attitude toward change similar to what Schon calls
the "meta-ethic." Schon describes the meta-ethic as an ethic
for change, for enquiry, for discovery. It is an ethic of
change--a set of principles for change. The meta-ethic is
internalized and in order to be effective has a reality for
those individuals adopting it. (Schon, p. 204)

There are other barriers to change which concern other
factors besides individuals. For instance, Christie isolated
three variables affecting change from data collected from 65
school board members, 16 superintendents, 16 principals and
358 teachers in 16 Southern California School Districts. His
dependent variable was "rate of adoption of educational inno-
vations." Three variables explained 77% of the variations
in the rate of district adoption of innovations. The three
variables were:

1.   ....board conception of community attitude
      toward innovation,

2.   conflict over responsibility for determining
      educational policy, and

3.   expenditure.

Each one of the foregoing has implications for those proposing changes in traditional inservice teacher education programs. Add the data from Christie's study relating to the total educational structure to that of Geis, Rubin, McClelland and others concerning the individual and his environment and the "variable matrix" becomes quite complex. The solution lies apparently in the development of theories of change and the preparation of individuals who can comprehend and operate the change process. Absent from almost all the literature on inservice teacher education are discussions on the need for a centralizing force, a director of the change process. Most change takes place without a plan, without a direction and with many unprepared people at all levels attempting to direct the multiple operations without orchestration.

The Change Process:

There are a number of ways of viewing change. In simple terms change ranges on a continuum from unplanned to planned. The question of variables as they relate to change thus becomes one of identifying the type or nature of change contemplated. If there is a systematic planned program of inservice education with specific goals which is to be incorporated in place of present traditional systems of inservice education the nature of the variables involved can be more accurately identified than if the change is merely a substitution of one inservice program for another.

Change is always occurring. The question is what type and in what direction. Most educators writing about change are concerned with planned change which is one of three broad categories of change, namely, imitation, selective contact change and directed contact change. The latter is defined by McClelland (p. 4) as:

a deliberate and collaborative process involving
an agent of change and a client system.

Planned change of course involves control and intervention. It requires a high level of knowledge about the phenomena that is being controlled and planned. Many individuals are greatly concerned about planned change, change models and change agents. Bhola (p. 5) believes that planned change must be accepted in all sectors of our social and economic life and for the following reason.

....It seeks to maximize the social returns of our systems and does not necessarily damage the individual and his right to self-fulfillment within a better, more productive social system. It very often improves the chances of such fulfillment.

The identification and recognition of planned change
and the client system is a new phenomena for many educators;
a new tool which enables them to more successfully carry out
their mission of improvement of instruction. Planned change
and the study of change processes have made educators aware
of options in programs and actions. As Robert Chin reminds
us in the discussion of his developmental model, actions
become strategic rather than tactical. It is a difference
between appropriate action and reaction. It is a difference
between controlling your environment and being controlled by
the environment, as was early man. Planned change adds to
one's security and changes uncertainty into a risk component
which is predictable.

Chin believes that the developmental model has advantages
for the practitioner because it provides a set of expectations
about the future of the client-system. Chin supports his
developmental model by stating:

> By clarifying his thoughts and refining his obser-
> vations about direction, states in the developmental
> process, forms of progression, and forces causing
> these events to occur over a period of time, the
> practitioner develops a time perspective which goes
> far beyond that of the here-and-now analysis of a
> system-model. (p. 211)

Planned change, change directed toward agreed upon goals
in educational or other systems involves not only the continuum
noted previously but levels in ascending order of difficulty,
the most recognized of which is Robert Chin's hierarchy of
five levels: (1) Substitution, (2) Alteration, (3) Perturba-
tions and Variations, (4) Restructuring and (5) Value
Orientation. Each level would have different variables.
For instance substitution is merely the change of one element
for another such as a new route for a fire drill whereas
value orientation would involve changes associated with non-
graded schools, individually prescribed instruction, year
around school and others.

Those who study change, innovation invention and develop-
ment generally, at some point in their discussions, state as
their goal one of "dealing with all situations in life more
reasonably and more effectively than hitherto." One approach
developed as a model for change and problem solving is described
by Zwicky. (p. 273) It is called the morphological approach
and is designed to "make possible the clear recognition of
those fatal aberrations of the human mind which must be over-
come if we are ever to build a sound world." A morphological
study implies a study of the problem and all its related
parts. It is an attempt to design a procedure which isolates

the essential elements. Zwichy offers the following steps
as an example of the procedure. Note that the first step is
an attempt at precision which has been identified previously
as a variable in the change process.

First Step.   The problem which is to be solved must
               be formulated exactly.

Second Step.   All of the parameters which might enter
               into the solution of the given problem(s)
               must be localized and characterized.

Third Step.   The morphological box or multidimensional
               matrix which contains all of the solutions
               of a given problem is constructed.

Fourth Step.   All of the solutions which are contained
               in the morphological box are closely
               analyzed and evaluated with respect
               to the purposes which are to be achieved.

Fifth Step.   The best solutions are being selected
               and carried out, provided the necessary
               means are available. The study of means
               is approached in the same manner.

In addition to proposed models such as Chin's and Zwichy's,
among others, studies by scholars such as Morison provide
information which is helpful in understanding the change process
and in the identification of variables. Morison has attempted
to identify how change occurs in a bureaucratic system with
established procedures and hierarchies such as governmental
bureaus and agencies. Summarizing his points Morison found:

1. Change occurred in part by chance. However, he
    also discovered that the idea or innovation
    entered an environment that contained all the
    essential elements for change including "a mind
    prepared to recognize the possibility of change."

2. The basic elements of the idea (technical details
    such as overhead projectors, behavioral objec-
    tives, team teaching, etc.) were put into the
    environment by other men, men interested in these
    specific areas for various reasons.

3. The various elements necessary to create the
    change were brought into successful combination
    by minds not interested in the devices, instru-
    ments or techniques themselves, but in what they
    could do with them. These men were interested

in change, overtly and consciously, as a
means of improving the status quo. There-
fore, a variable which enters into the
question of educational change is the need
to recognize that change is not only hier-
archical in terms of type but also in terms
of personnel.

4. Resistance to the Change Process. Those who
oppose change, according to Morison, are
moved by three considerations:

(a) honest disbelief in the dramatic but
substantial claims of the new process,

(b) protection of the existing operational
procedures, devices and instruments
with which they identify themselves,
and

(c) maintenance of the existing society
and social environment with which they
are identified.

5. Outside Assistance. Morison found that in
governmental bureaus and agencies that the
deadlock between those who sought change and
those who sought to retain things as they
were was broken only by an appeal to superior
force removed from and unidentified with the
mores, conventions and devices of the sub-
society.

Other studies, such as those by Rogers, have identified
variables which operate on the rate of diffusion of an idea,
procedure or innovation. It has been found that the innova-
tion itself has an effect on the rate of diffusion. The
greater the difference between the present and proposed the
slower the diffusion. Other variables identified by Rogers
were:

1. Communication--the transfer of ideas from source
to receiver.

2. Social System--the members of the system who,
individually or collectively, make decisions
to accept or reject a given innovation.

3. Time--this variable concerns the time it takes
the "client" or receiver of the innovation to
travel the majestic route from awareness of

the innovation, tb the arousal of interest,
to an evaluation of the idea, through an
actual trial to arrive finally at adoption
or rejection.

The developmental model of Chin aids in understanding
the change process, particularly the concepts of diffusion
and maintenance, both of which occur over time. The realiza-
tion that change and innovation involve people, values,
attitudes, time and the allocation of resources enables
one to answer the question, "Why don't we do it differently?",
much more adequately.

The studies of Mort and Cornell provide information
which indicates it took fifty years for complete diffusion
of innovations such as the kindergarten and more than fif-
teen years elapsed before 3% of the nation's schools adopted
the change. The question is: Why the time lag? What vari-
ables are operating?

Although the change process is not linear, as discussed
before, it is helpful to analyze the process of diffusion,
including adoption, to gain a better understanding of the
stages and concomitant variables involved. Gillie (p. 12),
in his study of the Diffusion of Knowledge, Research Findings
and Innovative Practices in Educational Institutions, out-
lined four basic elements involved in the process of spreading
a new idea from its source to its potential users. They are:

1. the new idea or practice,

2. its communication from the originator to potential
    users of the innovation,

3. spreading it to individuals within a given social
    system, and

4. the diffusion of the idea or practice over a
    period of time.

Gillie states that the ultimate goal of diffusing a new
idea or practice is to have it adopted by its intended con-
sumers. He defines adoption as:

the decision to continue the full use of the
innovation.

The adoption process, when analyzed, apparently contains
five steps.

1. Become aware of the innovation

2. Develop an interest in the possibility of
    utilizing it

3. Evaluate it in terms of its usefulness to him
   and the possibility of using it in his practices

4. Conduct a trial or test of the innovation

5. Incorporate the invention on a permanent basis.

Rogers identified the "nature of an innovation" as an important variable in the diffusion process. Gillie cites the nature of the innovation also as a variable during the adoption process. It is at this stage, according to Gillie, that the receptor considers the relationship of the innovation to his own mode of operation. Among the questions asked are:

1. Is the new idea or practice superior to what it
   is designed to supersede?

2. Is it reasonably consistent with the potential
   adopter's past experiences and existing values?

3. Is it relatively simple to understand and imple-
   ment?

4. Can the results of implementing the innovation
   spread to others with relative ease?

Each of the above questions relates to variables in the question of changing traditional inservice teacher education programs. In addition, we find again the critical role played by individuals within the social matrix. Gillie identifies them as "opinion leaders." They are the persons within the system to whom others turn for advice and information on a frequent basis. Gillie found the influence of "opinion leaders" was most effective in the following situations.

1. At the evaluation stage of the adoption process.

2. Late adopters. Relatively late adopters are more
   influenced by opinion leaders than early adopters.

3. Atmospheres of uncertainty. Opinion leaders yield
   a maximum influence in those situations where there
   is an atmosphere of uncertainty. In these cases
   "the personal touch" may be the deciding factor.

The change theory, identified by Bhola, supports the idea that the significant variables in the change process concern individuals. Bhola calls his theory a configurational theory because the emphasis is on patterns or relationships between innovators or adapters rather than

upon the social units themselves. It is the interaction
which relates individuals to other individuals, groups,
institutions or cultures. It was in these contexts that
opinion leaders play a significant role.

Gillie has identified several variables which relate
to educational institutions and change strategy. Several
of the variables relate to the research of others such as
Rogers.

1. The Innovation. The innovation should be
   modified from its original form so it blends
   in with the cultural values and past experi-
   ences of those persons who are expected to
   make the adoption.

2. Opinion Leaders. The opinion leaders must
   be accurately identified and won over to
   believing that the innovation is important
   to the institution and its members.

3. Users and Adopters. The intended users of
   the innovation must understand clearly the
   nature of the innovation and appreciate the
   need for its incorporation.

Gillie elaborates on point number three and identifies
a hidden variable concerning the maintenance of change. He
notes that the user stage is a very critical time since it
is many times unclear whether the innovation was accepted
by the members because they saw a need for it or because
they felt it would be easier to passively accept it for use
without actually believing in its value.

4. Purpose of Innovation. It must be clear to the
   intended consumers that one of the chief under-
   lying purposes of the innovation is to enhance
   the competence of the institutional members.

5. Social Consequences. The social consequences
   associated with the adoption of the innovation
   should be carefully anticipated. Social conse-
   quences that might be undesirable should be
   prevented or minimized by thoughtful planning.
   (Gillie, p. 14-15)

There are two ways to evaluate the changes produced by
programs based on the suggestions of Gillie, Bhola and others.
They concern rate and direction with the latter being the
more difficult factor with which to deal. Rate is in essence
a measurement of the effectiveness of a given mix of variables

In producing change. The direction of educational change
involves value orientations which in the final analysis may
determine whether there will be change or not. There are,
of course, value questions with respect to rate also but
the level of concern is not as high.

Given the fact that the questions of rate and direction
are not at issue, what other variables affect change? Earlier
it was noted that the characteristics of the innovation itself
affected change. Some of the more basic characteristics of
innovations which affect change are listed from Rogers' work
and include:

1. Comparative Advantage: the degree to which an
   innovation is perceived as better than that
   which is supersedes. Comparative advantage can
   be expressed in such terms as economics, prestige,
   or convenience to client.

2. Compatibility: the degree to which an innovation
   is consistent with the existing values and past
   experiences of the client.

3. Divisibility: the degree to which an innovation
   may be adopted on a limited basis. A divisible
   innovation could be adopted by part of the school
   system, by one or more teachers, for a given
   time period or in some other division. The
   essential point is not to create an all or nothing
   situation.

4. Complexity: the degree of difficulty in compre-
   hension and use of the innovation. If a high
   level of training is required it must be built
   into the developmental model of the change
   process.

Other factors affecting the change process have been
cited by McClelland in his analysis of Niehoff's work (p. 7)
Variables relating to the culture, the receptors and the
change agent are listed.

1. Amount of Behavioral Change Required: Innovations
   chosen for incorporation should be compatible with
   the cultural patterns of the recipient group. This
   means that the amount of new behavior which must
   be accepted, and the amount of old behavior which
   must be given up, will be minimal.

2. Recipient Needs: Innovations should be selected
   which meet existing or felt needs, preferably

those which the recipients have tried to
solve through their own efforts.

3. Reward Structure: Innovations should be
   selected which provide practical benefits
   as perceived by the recipients, usually by
   improving their economic position.

4. Local Cultural Patterns: The strategy of
   introduction will involve adapting to and
   working through the local cultural patterns,
   particularly the patterns of local leader-
   ship.

5. Communication: The change agent or innovator
   must establish an efficient two-way flow of
   information.

6. Involvement: Recipients must be involved in
   the introduction process through full partici-
   pation.

7. Flexible Strategies: The change agent is
   flexible in his strategies altering them to
   meet unforeseen circumstances.

8. Patterns of Maintenance: The change agent
   establishes patterns of maintenance among
   the recipients so the innovations can be
   continued when his influence is withdrawn.

The change process involving new behavior patterns and
new or altered values may be considered as essentially a
re-educative process. Kurt Lewin discusses the change pro-
cesses involved at this level and provides some insights
into the nature of the process thereby identifying variables
requiring attention if change is to be attained.

In his analysis of this process Lewin maintains that
the changing of values is not and cannot be only a rational
process. He cites the fact that lectures and other abstract
methods of transmitting knowledge are of little avail in
changing values, beliefs and behavior.

The change process affects an individual in several
ways: (1) his cognitive structure, including all his facts,
concepts, beliefs and expectations, (2) his values, including
both his attractions and aversions to groups and group stan-
dards, his feelings in regard to status differences, and his
reactions to sources of approval or disapproval and (3) his
motoric action which involves the individual's control over
his physical and social movements.

Lewin stresses that social action is "steered" by an
individual's perceptions which are a function of facts and
values. How a person perceives himself in his perceived
surroundings determines social action according to Lewin.
His premise for inservice education or any change model
would be a function of changing an individual's social
perception. Change would take place to the degree that
social perception was changed.

Lewin's work acknowledges the fact that it is a myth
to believe that individuals will change or adopt new methods
or procedures if they only possess the facts or correct
knowledge. Correct knowledge, according to Lewin, does
not suffice to rectify false perception.

The perceptions of individuals which provide a day-by-
day pattern of living, including incorrect stereotypes, is
the same as attempting to function with incorrect concepts
in the physical or technological world. Changing the im-
proper stereotypes requires, in Lewin's framework, planned
experiences.

The problem of planned change, based on rational pro-
cesses with emphasis on the cognitive elements, has significant
shortcomings if Lewin's analyses are correct. In addition,
his generalization has implications for the question: "Why
wasn't the change permanent?" His generalization states:
"Changes in sentiments do not necessarily follow changes in
cognitive structure."

The question can be raised about the ethical variables
involved in the change process if the time element is examined.
Many programs have attempted change utilizing time periods
too short to accomplish the goal. Lewin places the problem
in perspective in his statement about the acceptance of new
values and group belongingness. As stated previously: "A
change in conduct presupposes that new facts and values have
been perceived." However, this does not guarantee that change
will take place. Lewin maintains that a change in the "culture"
of the individual is required; that the change or re-education
process accomplishes nothing if the "individual becomes a
marginal man between the old and new system of values." Thus,
programs which "only begin" the re-educative or change process
and never complete the task are guilty of leaving individuals
in zones of confusion and with incongruous and inconsistent
patterns of behavior. In fact, Lewin maintains that not only
is nothing worthwhile accomplished but there are other dangers
involved as well for those who do not understand the change
process and do not plan the re-educative process carefully.

For instance, Lewin notes that an individual who is
forcibly moved from his own to another country, with a

different culture, is likely to meet the new set of values
with hostility. He further states that this hostility occurs
when an individual is made a subject of re-education against
his will. The basis of the observation is the comparison of
voluntary and involuntary migration from one culture to another.
The implications for those engaged in the change process are
significant, particularly in identifying and obtaining the
cooperation of "opinion leaders." "Opinion leaders" are
generally socially active within a given culture. Lewin
believes that those individuals who are socially inclined
or less self-centered will offer stronger resistances to
re-education because they are more firmly anchored in the
old system. It is the incongruity between the insistence
on freedom of acceptance of a new idea, value or procedure,
the strength of the belief and value system and the need for
outside assistance in the change process that brings Lewin
to state the dilemma in the form of a question,

> How can free acceptance of a new system of values
> be brought about if the person who is to be educated
> is, in the nature of things, likely to be hostile to
> the new values and loyal to the old?

Based on the foregoing analysis, what variables are
operating that can be identified and accounted for in the
change process? There are several which Lewin believes to
be essential in understanding the process. First, he main-
tains, in the planning of change, methods and procedures
which seek to change a person's values and beliefs item by
item in a logical procedure cannot succeed. He recommends
a "step by step" approach of gradual change from hostility
to friendliness in regard to the new system as a whole,
rather than the conversion of the individual one point at
a time. The first priority in the change process, therefore,
would be changing an individual from hostility, to open-
mindedness, to friendliness of the new "culture" as a whole.

This can best be done in Lewin's framework through the
creation of an in-group. This is a group in which the members
feel belongingness. The use of the "in-group," together with
the establishment of a strong "we feeling," greatly enhances
the "step by step" process and the change to the new culture.

The function of the "in-group" and the "we feeling" is
important. In summary, Lewin would maintain:

> ....in-grouping makes understandable why complete
> acceptance of previously rejected facts can be
> achieved best through the discovery of these facts
> by the group members themselves. ....an individual
> will believe facts he himself has discovered in
> the same way that he believes in himself or in
> his group.

and finally:

> ....It can be surmised that the extent to which
> social research is translated into social action
> depends on the degree to which those who carry
> out this action are made a part of the fact-
> finding on which the action is to be based.

Creating an atmosphere for change is the central theme
of Bradford's analysis of the change process and is supportive
of Lewin's conclusions about the need for the "in-group" and
the security factor. Bradford believes that until the thoughts,
feelings, and behavior needing change are brought to the surface
for the individual and made public to those helping him, there
is little likelihood of learning or change. In order to attain
this surfacing of beliefs, values, and behavior, a climate must
be established which reduces threat and defensiveness and pro-
vides emotional support while the learners undergo the difficult
process of changing patterns of thought and behavior.

The question of the cognitive aspect was discussed pre-
viously and given a reduced priority. However, Bradford notes
that information seeking and receiving factors are essential
and states: "Knowledge from a variety of sources is vital to
the learning process."

Feedback is another variable introduced by Bradford.
Upon analysis it becomes clear that feedback is an on-going
evaluation and assessment process which expands the commonly
held concept that one learns by doing. Bradford concludes
we do not learn by doing. He makes his point by stating:

> We learn by doing under conditions in which relevant,
> accurate and acceptable reactions which we are able
> to use get through to us. ...Increasingly, it is
> clear that the concept of feedback has important mean-
> ing for the educational process.

The integration of new knowledge into new behavior patterns
can be based on the above perception. New modes of thinking,
doing and acting are accrued over time through experimentation
and practice situations. Both learning and re-learning take
time. And it is important to remember that the step by step
process is incremental over time. It is a developmental pro-
cess. It cannot be mandated. Therefore, if traditional
practices of inservice teacher education are to be changed,
one conclusion can be made. It will take time.

Not only will it take time but there must be a payoff.
Just because some people believe others should change does
not make change acceptable. If the goal is the improvement

of instruction, as is so often stated, the question about change can still be asked: "Why should the teacher change?"

The Change Process-Communication:

Permeating the entire discussion of change are several significant elements essential to the change process. One is communication. The success of the change process is related to the adequacy of the communication processes. The development of openness, security, accuracy of perceptions and assessment procedures cannot take place without appropriate communications.

Bhola maintains that the diffusion of an innovation will be determined by the utilization of resources such as "influence resources" which are directly related to the linkage of the innovator and adaptor through some communication or interaction pattern.

The communication factor becomes more of a problem, as does inservice teacher education, when Dague's observation is studied.

> ....A major problem encountered by local school
> districts today is the difficulty that faculty
> members have in working together. This is largely
> due to the fact that teachers trained at various
> universities have divergent viewpoints regarding
> philosophies of education and the process of educa-
> tion. Add to this divergent character of educational
> backgrounds the mobility factor of teachers, we can
> realize why a continuous inservice educational pro-
> gram is an essential part of any well functioning
> school system. (p. 1)

The establishment of interpersonal relations and good communication among and between individuals and groups is a problem that has received very little attention. In fact, education may have been infatuated with a learning theory model when many indicators direct attention to a communica-tion model as having more validity in the attainment of the goals and objectives of the educational process.

Interpersonal communication described by Schon, (p. 210) as, "what is happening between us now," is a significant factor in change. Schon calls it a "powerful lever." He notes:

> Reference to "what is happening between us now" is
> apt to provoke embarrassed silence, or, if there
> is power present, a sense of risk and danger. It
> is, nevertheless, a direct route to that _sense of_
> _interpersonal security which is so important to_
> _radical innovation._*

*Italics added

The Change Process--Conditions Necessary for Learning and Change:

Although a number of the conditions necessary for learning and change have already been stated or implied, it seems necessary to elaborate on several and direct attention to some new ones.

The frequency of mention of the principle that the inservice program which is well conceived will make "the learning process the focus of organizational efforts designed to serve the needs and purposes of individual teachers, "establishes it as a central variable from which others derive.

The learning environment is a part of the learning process equation as are other factors. Edmonds (p. 34) lists the following as being "those aspects of learning" which affect what is able to be achieved toward a teacher's personal growth.

1. Physical Environment--This ranges on a continuum from very informal and non-structured to highly formal and structured. The selection of the appropriate environmental design for a given activity and goal is the issue.

2. Individual Perceptions of Others: How a person perceives their colleagues influences their receptivity to learning. The importance of "feedback" to the change process has already been discussed. Rubin reminds us that next to self- criticism, criticism by a trusted peer seems to be most easily tolerated by teachers. (p. 19) The "in-group" factor is active here also. Westby-Gibson concludes that inservice education programs should be made up predominantly of those who are ready for change. (p. 14)

3. Individual Perceptions of Self: How one views himself influences his perception of what is going on around him. As Edmonds explains (p. 34), a teacher is most likely, at least in beginning programs, to identify external school needs in areas with which he is quite knowledgeable. To expand this perception requires re-education.

4. Functions and Roles: A person's position within the educational structure holds certain significance in the manner in which he perceives himself in relation to the issues involved. There is a stratification of roles with given perimeters assigned either formally or informally. Certain functions such as budget curriculum, discipline, initiating of change and others belong to certain people. These perceptions limit change and hinder learning. Therefore, structure of organizations is a variable.

Previously it was noted that Rogers considered the characteristics of the innovation to be a factor in the diffusion

of innovations. Although this is a significant variable in
the change process, other conditions are of greater signif-
icance according to Bhola. (p. 7) He concludes:

> ....Characteristics of an innovation were not
> primary in determining the probability of the
> diffusion of an innovation. The more important
> factor was the availability of resources of skills,
> personnel, material and influence with both inno-
> vators and adopters. If all the needed resources
> were available and deployed, the adoption of any
> innovation could be achieved for an individual,
> group, organization or culture, in due course of
> time.*

The person toward which the inservice issue is most often
directed, namely, the teacher, brings to the situation certain
fixed factors which require attention if change is to accrue.
Among those conditions which teachers bring with them as reported
by Flanders (p. 136) and others are:

1. the lack of a sense of experimentation with regard
    to their own behavior,

2. limited skills for exploring different verbal
    patterns in the classroom due to a lack of con-
    cepts that deal with behavior,

3. limited tools for gathering information system-
    atically and

4. lack of time to develop, understand and use
    data-gathering tools.

Implied in the above conditions, selected by Flanders,
is a concept of the function of a teacher in the educational
enterprise. Inservice programs reflect directly the percep-
tions of administrators, teachers and others of the role of
the teacher. Change the internal and external perceptions
of the teacher in the social environment of the educational
enterprise and you change the inservice program as well as
the nature of the conditions affecting learning and change.

For instance, an entire new set of variables is intro-
duced into the inservice teacher education equation when
Flanders (p. 136) suggests that teachers become self-directing
analysts of their own and the students' behavior. Flanders
believes teachers need: (1) new concepts as tools for think-
ing about their behavior and the consequences of their behavior,
(2) procedures for quantifying these concepts in practical
classroom situations, (3) practice in using these concepts

*Italics writer's

In their own classroom to analyze behavior, (4) a research
orientation attained through participation in carrying out
experiments designed by others and (5) participation in inde-
pendent, self-directed inquiry in which one's own behavior
and the reactions of pupils are the object of inquiry.

The presuppositions involved in the above conditions
affect directly the variables related to changing inservice
teacher education. The underlying assumptions and their
implications establish conditions which place more responsi-
bility on the teacher becoming a self-directing agent of
change without the supporting system considered so vital by
other researchers. There are relationships however. Bessent
(p. 17) summarizes some of the conditions necessary for
effective and efficient learning. People learn better:

(a) when they are actively involved in the learn-
ing process--when they _do_ something rather than
having something done to them,

(b) when there is immediate feedback to the conse-
quences of their behavior,

(c) when the learning activity is perceived to
possess face validity; that is, to be relevant
to their important concerns,

(d) when they are interested in, and enthusiastic
about, the learning activity,

(e) when their reactions to the learning activity
are reinforced by the reactions of others, and

(f) when the learning activity is carefully designed
to accomplish clearly conceived purposes.

The Process of Change--Environmental Factors:

This sub-section could be entitled the "ecology of
educational change" since it deals with the cybernetic system
of the educational enterprise and all the sectional, geograph-
ical, personal and political variables involved.

It is evident immediately, when one begins a study of
change, that the information and knowledge of any consequence
available on the question of environment is limited. Many
writers mention environment. Few have anything to contribute
except to recognize it as an important variable. Some have
recognized the great variety of teaching conditions through-
out the nation and conclude that these variations usually mean
that one procedure will succeed and another will fail. (Rubin,
p. 6)

Others, such as Bhola, have attempted to develop theories
and formulas with which to conceptualize the environment and
accept it as a factor in any innovation or change process.
The present study confirms Bhola's contention that environment
is wholly neglected in most innovation models. Rubin (p. 17)
in his work reports that those he called "facilitators" had
a hunch that the environment in which the teacher operates
is of greater influence on his desire to improve professionally
than any of the other variables tested. The effectiveness of
resources is affected by the environment within which innovators
and adopters exist according to Bhola. (p. 7) He believes the
environment has the potential to multiply the effectiveness
of resources or neutralize them resulting in expenditure of
resources with no gains in diffusion.

The work of Bhola on the question of environment is perhaps
the most substantive. He points out that hardly any attempts
have been made to measure social environment. Furthermore, a
precise definition of the environment was not available as a
base for measurement, prediction and explanation of human and
social characteristics in the change and diffusion process.
In their research Bhola defined environment as:

> comprising physical, social and intellectual
> conditions and forces that impinge continuously
> on a configuration. In the case of an individual
> it will include a range of environments from the
> most immediate social interactions to the more
> remote cultural and institutional forces. (p. 13)

Bhola explains the diffusion of an innovation as a "func-
tion of the relationship between the initiator from a class of
such initiators and the target from a class of such targets;
the extent and nature of linkage between and within configura-
tions; the environment in which the configurations are located;
and the resources of both the initiator and target configura-
tion. There are, therefore, five elements in the equation:

1. Diffusion (D)

2. Configurational Relationships (C)

   (a) initiator (i)

   (b) target (j)

3. Linkage (L)

4. Environment (E)

5. Resources (R)

Diffusion can then be explained as a function as follows:

$$D = f(CLER) \quad (p. 8)$$

Further explanation of the theory is provided by classifying environments as:

1. Instantaneous environments.
   (subjective and objective)

2. Persistent-subjective environments.
   (This implies there are as many
   environments as there are individuals)

3. Persistent-objective environments.

In the analysis of the environment Bhola developed a matrix from which to conceptualize the environment. He sees the concept of environment involving two dimensions--the objective-subjective and the instantaneous-persistent. The following matrix provides a visual presentation of the idea.

Four Components of Environment

	Subjective	Objective
Instantaneous	1	2
Persistent	3	4

Bhola believes "it is the persistent-objective environment which will, wholly or in part, supply the ecology of an innovation." Whether the environment will be supportive, neutral or inhibiting will depend, according to the theory, on the net component of the forces in the environment acting on the innovation.

The Change Process--Change Agents:

Throughout the literature on inservice teacher education, innovation and the change process, suggestions are made that what is required to improve the process is a person known as a "change agent." Most literature does not define the role of this person beyond recognizing that special talents and knowledge are required and that problems exist between the development of a process of innovation and the acceptance and practice. Some writers call the new role in education a professional innovator. It is observed that personnel at the county and state levels of Public Education largely confine their role to regulation and neglect the advocation of change. Those that do engage in the change agent role usually serve intermittently or as a transient.

The typical public school teacher or administrator does not possess the research skills nor the habits of scholarship to do the job. (Lavisky, p. 6)

The question of the utilization of change agents within the system of education is often raised from a moral or ethical posture. The questions of planned change, individual freedom and choice are issues brought forth by many when the role of change agent is discussed. One way of viewing the structure within which the change agent would operate as well as placing the questions in perspective is the point of view expressed by Bhola. (p. 5)

> ....innovators and change agents should be enabled
> to work for innovation diffusion as long as they
> are competent, are using their social skills for
> common good, have been assigned to their roles by
> the people themselves through known democratic
> procedures and can be removed from those positions
> again through established processes; and as long
> as individuals, or groups have the _freedom not to
> consume_ the innovation or change offered and made
> available.*

The change agent fulfills a role within society of providing a link between the innovator and the acceptor. Barnett (p. 295) reminds us that it is common practice today for professional inventors to relinquish their advocacy to "professional surrogates." They leave the advocacy of their innovations to representatives who are specialists in this field. The proposal is that the field of education adopt this practice.

It may have advantages. Morison (p. 39) discusses the concept of "identification" in his analysis of innovation diffusion. He found that individuals play many roles; some identify themselves with their creations and obtain satisfaction from the thing itself, a satisfaction which interferes with their thinking either about the use of the defects of their innovation; some identify themselves with a settled way of life they inherited or accepted and find satisfaction in attempting to maintain that way of life unchanged; and others identify themselves as rebellious spirits, men of the insurgent cast of mind, and obtain their satisfaction from the act of revolt itself.

Each of these categories of people identify with a particular concept, convention or attitude each of which is, according to Morison, a powerful barrier to change. The role of the change agent is to alter the perceptions of each individual.

*Italics added

In the area of education, the research spells out rather
clearly (Rowe, p. 12) the role identification problem. It
was found that teachers and principals not only focus on
different difficulties innovations present; they often hold
conflicting views. It is suggested that the role of the
change agent would be to examine the content of the conflicts
and determine means to reduce them through alternative actions.
If Morison's assessment is correct, the task of the change
agent would be to enlarge the "sphere of identification" of
both the teachers and principals from the part (their world
and its concerns) to the whole (the improvement of instruction
in their school system). Rowe's analysis, which concurs with
Morison's perceptions, states that teachers focus primarily
on factors related to belief systems, learning environments,
management of classes and other similar factors while admin-
istrators concentrate mainly on knowledge, content, physical
environment, lack of equipment and space. Figure IV provides
a visual perspective of the relations determined by Rowe.

The Change Process--Facilitators and Inhibitors:

Although the field of inservice teacher education has
not reached that stage where a body of research exists from
which to make definitive decisions, there does exist an on-
going body of practice which identifies procedures which
facilitate the effort as well as those which inhibit the
effort. Whether definitive answers will ever be available
is questionable unless the attempt is to devise an inservice
structure which is externally stable and internally flexible
and adaptable to change. To be more prescriptive in a field
concerned with as many varied problems, programs, and people
would be presumptious.

Programs which have been successful have utilized some
or all of the following practices, among others, to some
degree.

One practice which seems mandatory if change is desired
is to change the planning of inservice programs by administra-
tive personnel only to teachers or to a cooperative effort.
The most successful programs are those that derive content and
procedures from teacher needs. Furthermore, the more success-
ful programs have been those which were not only cooperatively
planned but planned for a period of three to five years.

Closely allied with direct involvement in the planning
by the teacher is the variable called meaningful relationships.
It has been found that the best practice, based on the objec-
tive to change behavior in the classroom, is to relate the
inservice program to what is going on in the classroom.

Figure IV

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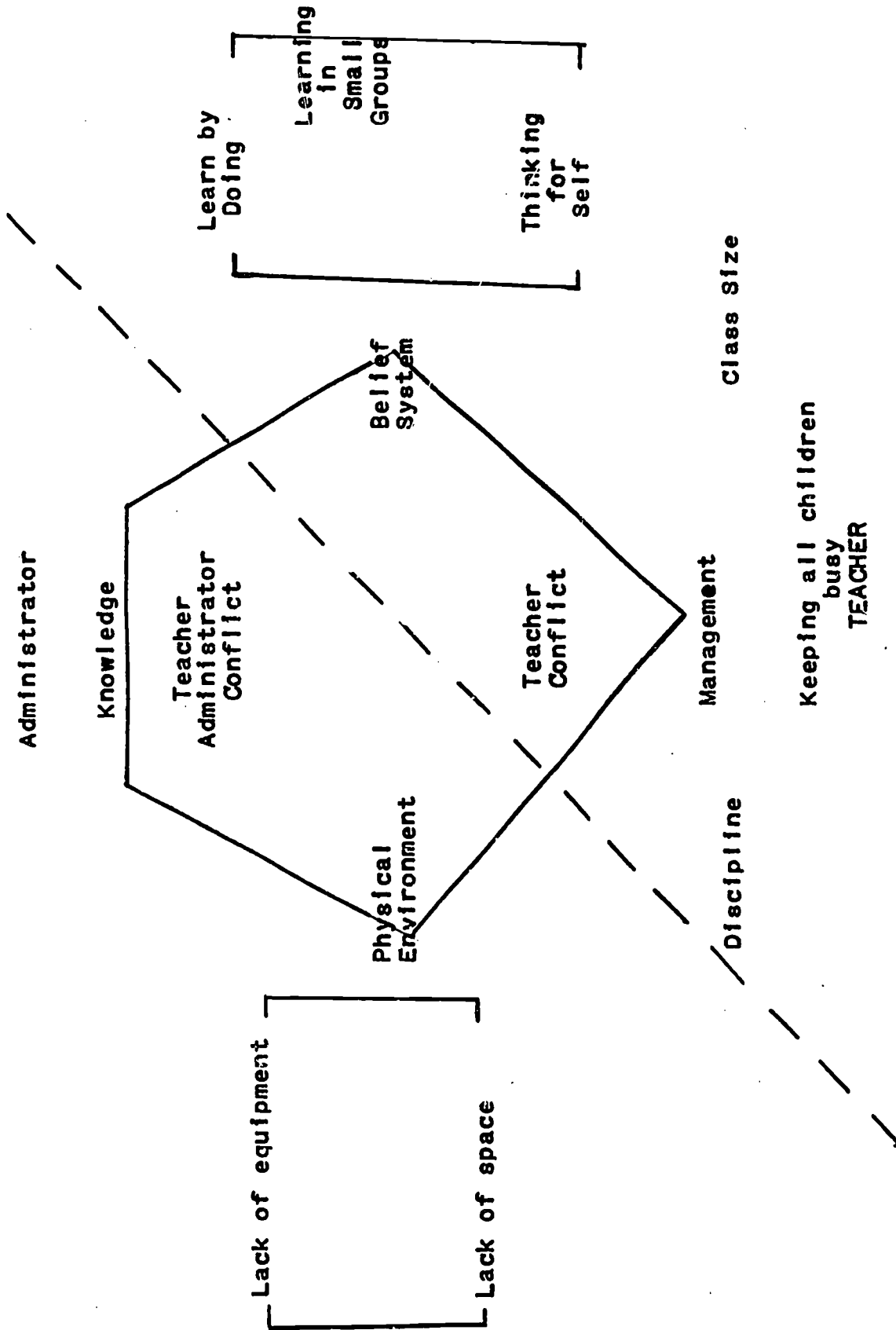
Teachers focus primarily on factors lying beneath the
diagonal while administrators concentrate mainly on factors
above the diagonal. (Rowe, p. 9)

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The involvement of the individual, the meeting of his needs through individualizing instruction and directing attention to those individuals who express interest in change, combine practices focusing on the individual which, according to research reports and other data, increase the effectiveness of inservice programs. Meeting these criteria requires a flexible program and assessment and evaluation procedures based on individual teacher growth as measured by their students' achievement. The focus of inservice programs utilizing these criteria is in the classroom.

Another practice which has facilitated inservice programs and increased their effectiveness is the use of outstanding classroom teachers to conduct inservice programs for other teachers. Stated or implied in all programs using this practice is the development of training programs for teachers assuming the new role.

There is disagreement on whether training programs should be compulsory or not. The practice utilized seems to be related to the type of inservice program with some evidence that voluntary participation has the greatest potential for the long-term, well planned inservice program.

All of the above facilitators, if adopted, would require modification of traditional inservice programs. If modifications are denied, what information do we have which will facilitate change in program at the operational level? Lavisky (p. 10-11) reports on an analysis made by the Human Resources Research Organization relating to adoption of their products and/or processes by the United States Army. They found the following factors or variables to be important.

1. **Timeliness.** The product filled a recognized instructional gap; it was relevant to a planned or on-going revision.

2. **Command Interest.** There was a strong operational command interest, including that of a subordinate command. To put it another way, there was strong interest at both the management and working levels.

3. **Product Engineering.** The end-product was a plug-in item, specifically engineered for a given situation, requiring little effort to adopt it to the operational setting and requiring little Army effort.

4. **Concreteness.** A material item, such as a complete lesson plan, program of instruction, or a training device with a user handbook, was provided.

5. <u>Zeitgeist</u> (for want of a better term).
   Some other service, foreign army, or civilian
   institution had accepted the product or a
   similar one.

6. <u>Personal Interest</u>. An undividual officer or
   group of officers associated with HUMRRO
   became convinced of the worth of the product
   and were willing to serve as forceful and
   dogged proponents.

Each of the above has implications for the field of in-
service teacher education whether one is attempting to change
the over all approach to inservice education as generally
practiced or to alter the internal practices of present on-
going programs.

The field of curriculum innovation has been studied and
there are certain conditions which have facilitated the intro-
duction of new curricula. A number of the conditions appear
obvious, yet may be overlooked by many concerned with the
change process. Some of the conditions included:

1. <u>People</u>--highly intelligent with differentiated
   and specialized roles.

2. <u>Reward Structure</u>--individual recognition was
   possible.

3. <u>Problem</u>--precisely defined and limited in scope.

4. <u>Resources</u>--physical facilities, materials and
   equipment were available as required and/or
   produced as needed.

5. <u>Communication</u>--personnel were well informed
   about similar developments elsewhere.

6. <u>Application to Practice</u>--curriculum was tried
   out, altered and improved until it met the
   objectives.

There is evidence that the intellectual and knowledge
level of a teacher is a factor in the change process in
particular areas such as in the sciences and the technol-
ogies. White (p. 18) reports that the amount of previous
science training appeared to be a significant contributor
to the effect of the teacher education program and that
an extensive knowledge base provides a greater potential
for change. Two factors may be involved in the latter
premise. One, the more knowledgeable teacher is probably
on the forefront of his field and two, because of this,
is more secure.

There are certain techniques which facilitate change.
One is the concept of "feedback" which relates to the theory
of reinforcement. Programs which utilized "feedback" techniques
and focused on precision in spelling out objectives greatly
facilitated the overall goal of the inservice program. The use
of "feedback" presupposes the development of objectives for
the program. How else can the "feedback" concept be utilized
whether by self-analysis, fellow-instructor analysis, student
analysis, teacher-educator analysis or a special assessment
and evaluation team. As Rubin reminds us: "To improve teach-
ing (or an inservice teacher-education program) it is necessary
to analyze performance." (p. 5)

The experience of those attempting to identify and state
problems and to identify and state objectives indicates a
major problem area which either facilitates or inhibits the
change of inservice programs depending on how well these two
problems are carried out. It is the rare teacher or teacher
educator who can state a problem accurately and succinctly.
It is also the rare teacher or teacher educator who can state
an objective accurately and precisely in performance terms.
However, all "feedback," evaluation, assessment and change
depend on these functions being carried out at a high level
of sophistication. It is interesting to note that Robertson
found that the process of writing behavioral objectives at
all cognitive and affective levels seems to bring about more
change in teacher methods than did training in classroom
observation systems. Thus, it may be that change in inservice
teacher education programs could be enhanced by focusing
attention on problem identification and the delineation of
highly precise performance objectives.

Geis would support the problem solving approach as being
a significant facilitator in bringing about change. He notes:

> The problem-solving routine provides the occasion
> for the teacher to engage in a number of skills
> outside of those that have been traditionally hers.
> Thus, she engages in explicating instructional
> problems, suggesting evaluative techniques, design-
> ing and executing solutions for problems, and
> adapting and adjusting particular solutions to
> individual students. (p. 11)

There are a number of variables which can inhibit change.
Of the many researches which reported failure in attaining
change Gross' study is most informative. His study was an
attempt to isolate the factors that inhibit and those that
facilitate the implementation phase of the process of planned
organizational change. The study was made of an innovation--
the radical redefinition of the role of the teacher--which

was introduced into a small elementary school in a lower class urban area. The implementation failed. Some of the factors the implementation of proposed organizational changes must take into account according to Gross are:

1. staff resistance,

2. the clarity of the innovation,

3. individual or group ability to perform it,

4. existence of necessary materials and resources and

5. the compatibility of organizational conditions with the innovation.

Gross also found that resistance to the innovation may emerge after the introduction and this resistance can vary over the period of time implementation efforts are being made.

Others such as McClelland (p. 8) cite inhibitors to innovation or diffusion as being associated with such factors as:

1. the diffuseness of the goals,

2. knowledge and skill in the teaching profession to "engineer" innovations,

3. lack of evaluation and feedback which are related to precision in the statement of goals and objectives.

4. human factors. (Attitudes of reticence, suspicion and fear on the part of educators. Vulnerability of the school system to powerful influences such as parents, school boards and power elites in the community), and

5. management and funding problems.

Rubin's research found that the school principal was by far the greatest influence on the staff's personality. (p. 18) Gross (p. 259) found that one of the major causes for the inability of many school systems to demonstrate positive educational effects from their attempts to institute educational change could be attributed to "the truncated version of the change process held by their administrators." Furthermore, Geis (p. 6) states that when an innovation is adopted, regardless of why, it usually leads to troubles because sufficient provision has not been made for continuing support,

for financing, and more importantly, for training teachers
in how to use and how to avoid misusing the innovation which
in itself would inhibit its acceptance.

Lavisky (p. 6-7) reviews other factors supportive of
and in addition to those already mentioned. He cites cost,
the conservation of the educational establishment, failure
of the adopting agency to adopt the innovation specifically
to fit its own situation, and the necessary commitment to
alter the behavior of school personnel, among others. In
the same report factors which inhibited adoption of innova-
tions and the utilization of research completed by a private
firm for the U. S. Army were noted. They included: (1) Poor
communication, (2) Lack of Timeliness, (3) Nature of the
Change (too drastic or couldn't be adapted to present proce-
dures), (4) Lack of Command Support, (5) Cost (no way of
funding), (6) Lack of Engineering Capability (personnel
necessary to translate research or innovation into opera-
tional terms and content did not exist), (7) Policy Problem
(lack of a doctrine under which to fit the new or improved
training or operational capability), (8) Insufficient Sales-
manship, and (9) Tradition (the product was perceived to
attack current practices, individual competence, "sacred
cows," tradition, or long accepted doctrine). (p. 10)

VI. Evaluation:

The most powerful tool and the most significant variable
for affecting change in traditional inservice teacher educa-
tion programs is the vague, difficult to define, complex
problem plagued, phenomena known as evaluation. The level
of sophistication of this area of education is very primitive.
The tools are crude and the skill of the practitioners limited.
Yet, unless the state of the art of evaluation is advanced,
together with the state of the art of supporting areas, the
possibility of initiating, supporting and sustaining planned
change in inservice teacher education is impossible. This
is true because a salient but little recognized factor is
involved. Without evaluation it is impossible to determine
the array of other variables that in toto affect a given
inservice program.

Basic to the question of inservice teacher education
and evaluation is the issue of educational philosophy. The
concept of evaluation rests on the assumption that there is
something that can be measured, assessed, compared or assigned
a value. When one compares, he compares a given action, ob-
ject or event to a given standard. The standard is based on
a previously selected criteria. If the question concerns
instruction, the ultimate question is based on a given philos-
ophy of education. A given philosophy presupposes certain
assumptions which provide a base for the mission, goals and
objectives of education.

Unless the philosophy of a given educational program,
together with the assumptions of the program, is precisely
stated, it is impossible to engage the questions of change
or evaluation. For one thing, it would be impossible to
answer the question, "Change from what?" It would also be
impossible to answer the following questions.

1. What change shall be made and why?

2. Who and what shall be changed and why?

3. When will the change take place and why?

4. How will the change be initiated, accomplished,
   maintained and assessed and why?

The questions of whether change is possible or not or
whether it can be accomplished in a given time period are
irrelevant questions when compared to what change and in
what direction. The present review of the literature on
variables affecting change in traditional inservice teacher
education programs can conclude only that the questions of

the philosophy, direction, content and purpose of education
have not been answered. This leaves educators with evaluation
and statistical techniques rather than processes and programs.

How educators can expect to evaluate their efforts or
have them evaluated adequately by others without a clear state-
ment of purpose is a mystery. It is apparently accepted as
standard practice in the day to day field operation that it
doesn't make any difference which trail you choose if you
really don't know where you intend to go.

The "if-then" equation aids in focusing attention on
the issue. If the goal of inservice teacher education is
to affect the quality of instruction within the educational
enterprise then educators must seek information about the
best strategies for effecting change both in the structure
of inservice education and in the nature of the inservice
process.

It has been conceded for some time that teachers can
undergo intensive inservice training designed to change
attitudes in the classroom and to increase understanding of
the problems of children and be totally unaffected according
to Buskin. (p. 22) He reports that the U.S.O.E. spent
nearly $9,000,000.00 in 1968 for inservice training of teachers
under Title I with little evidence to show that the training
ultimately paid off in improved learning for students. A
federal task force stated that the major problem was lack of
proper evaluation. Yet, designing and implementing adequate
evaluation programs has been found to be difficult to carry
out.

The question remains after reading similar reports, "What
were they trying to evaluate?" The studies reported by Buskin
and others reinforce the fundamental tenent that evaluation
cannot be "after the fact," whether concern is with changing
total programs or individuals within programs. Evaluation
must be an on-going, day-to-day process. This is true because
"everything is in process and nothing stays still."

The evaluation process can add to both security and
insecurity. Without evaluation there is less freedom, less
control of one's situation and greater insecurity unless the
process of rationalization, supported by myths and operational
modes based on stereotypes, is used. Without a "knowledge of
where we are" we opt for being controlled by the situation
rather than controlling the situation. One's actions become
purposeful and efficient when he is aware of what his actions
actually do. The development of this awareness is an important
factor in the evaluation process, particularly for educators
concerned with people and behavior.

The concept of evaluation rests on the principle of feed-
back. The goal is control. Control is a function of accurate
and precise information. What information and when is a
question of objectives. Thus, if it is desired to change
traditional inservice teacher education programs for the
purpose of improving the quality of the instructional process,
then the first task is to state the mission, goals and objec-
tives of the educational process in precise performance terms.
At issue, of course, is whether educators and the public are
willing to establish pre-determined, specific goals for in-
service teacher education programs based upon precisely stated
philosophies, missions, goals and objectives of their educa-
tional and instructional programs. If they are then it is
possible to change traditional inservice teacher education
programs to attain these goals and thereby improve the quality
of instruction.

Success is not possible immediately but at least the
variable is identified and the profession can engage in the
process of attaining evaluation precision by successive
approximations.

We know it will be necessary to create special organizations to service functions such as change, evaluation and training. School systems are not equipped to handle these functions themselves.

There are many suggestions and recommendations that could be made with respect to changing inservice teacher education. In fact, there are lists ranging from four or five items to twenty or more. Some are more critical variables than others.

If a decision is made by the United States Office of Education, a given state department of education, county school system or other political entity with direction and control over education to change inservice teacher education, _then_ action devoted to the following variables is in order.

1. The formulation of precise, long-term developmental plans.

2. The development of specialists including managers, change agents and evaluation specialists.

3. Establishment of programs for the study of the change process, including research and evaluation.

4. Commit funding sources to long-term ventures so the critical variables of resources and follow-up can come into play.

5. Structure all phases of the program so there is direct involvement of teachers in the process.

6. Design the efforts so the focus of attention is directed from the part to the whole.

7. Create an "outside force" such as _Training Centers_ with the long-term task of engaging the problem of improvement in the quality of instruction with particular attention to the first two years of a teacher's tenure.

Finally, a solution to the reward structure in education must be found for personnel at all levels. This is important because: In the last analysis it is people who change programs. The question is: "Why should they?"

VIII.   SOME REFLECTIONS

Wil J. Smith and Frederick A. Zeller

Introduction:

Changes in inservice teacher education appear to be
widely desired at this time by professional educators and
by an important segment of the lay public. The feeling
is widespread that the quality of the output of education
is substantially below acceptable levels in a technologi-
cally oriented society.

Although probably an oversimplification, there appears
to be a consensus that the failure of society to more
effectively manage contemporary events is, in large degree,
attributable to the fact that today's people are confronted
by a massive explosion of social and physical knowledge.
This new knowledge is unfolding at rates far in excess of
the ability of traditional education to pass it on to the
young. Hence, there is thought to be great need to expend
resources to provide for the lifelong education of teachers
in order to give them the means of keeping abreast of
intellectual developments and the use of new educational
technology. Conventional programs of preservice education
cannot be expected to meet these needs. Preservice programs
are, in some cases, described as producing products which
are obsolete before the production process is complete.

Whether or not this is a realistic view of the state
of the art in inservice education is another question. It
could be suggested that our society has transferred an
increasingly large number of social functions to the educa-
tion institution (for example, the eradication of poverty
and the implementation of equal educational opportunity
policy--the right of all to quality education) and that
education is, in a sense, being blamed for the failure of
other institutions to deal meaningfully with evolving and
emerging social problems. In addition, it could be argued
that education, for one or more reasons, has lost its power
to contribute to social growth as in the past. Its advocates
and proponents are struggling to discover ways of halting
the decline of its social influence.

Ideally, any investigation of change variables would
have focused upon an examination of the results of empirical
studies of inservice education and behavioral change. In
attempting to determine change variables this would have
been most advantageous in that the goals and results of
alternative programs could have been compared relative to
some measurement or starting point. However, for the most

part, this has not been done. There appears to be a diver-
sity of well discussed views about the specific goals of
education, but precious little agreement about the goals
of inservice education. In addition, there is even less
empirical evidence as to its effects. (Benjamin, p. 1)

Thus, most of the views cited can at best be labeled
as impressionistic, or perhaps are conclusions based on stated
or unstated value judgements. Nevertheless, it is believed
that a review of the literature, supplemented somewhat by
an attenuated analysis is a useful procedure for generating
hypotheses which can be empirically investigated in the
future when it is possible to control for specified educa-
tional goals.

Conceptual Model:

Behavioral change is most likely to occur as the result
of complex relationships involving the actors whose behavior
is of primary concern (in this case the primary and secondary
teachers), the environment in which they are acting (made
up of school administrators, public opinion, students, other
teachers, etc.), and the intensity of the relationship between
the actors and the environment (i.e., the quality and quan-
tity of the relationship between the actors and the environment).
Several examples of dimensions of these broad classes of
variables might be useful.

If there is an urgency for teachers to change their
professional behavior they will be more apt to change it than
if there is no urgency to change. In turn, their perception
of the need to change will vary with such factors as: (1) the
presence or absence of internalized needs to keep pace with
changes in educational technology, (2) keeping the institution
of education in line with their own and society's changing
expectations of it, (3) the opportunities for change and,
(5) the types of social and economic rewards related to change.
In turn, these variables interact with each other. For
example, if income and professional status encourage change,
there are more likely to be greater opportunities for change
and a higher value placed upon it by teachers.

While these examples are complicated enough, they sug-
gest that the behavioral change of teachers is related only
to variables which operate within the education institution.
To the extent this is true they do not illustrate reality
for many teachers in the profession at any given point in
time. To cite only one example. If participation in in-
service education is strongly rewarded and non-participation
severely sanctioned, then an individual's calculation of
the value of meaningful change, as an educator, may include
estimates of the returns to be had from alternative employment.

Or it might affect his tenacity in insisting on specific
inservice programs which may or may not have anything to
do with the particular goals being sought in a school dis-
trict by the policy-makers in the district.

Thus, viewed abstractly, the success or failure of
attempts to change traditional inservice teacher education
programs depend upon a wide variety of variables, including
the individual teacher as a professional, the school system
in toto, the community, and the state of alternative labor
markets in which the teacher is most likely to become a
competitive participant. Unless these and other variables
can be controlled, the reasons for the success or failure
of any given inservice education program cannot be known
precisely.

On the other hand, the state of society (by definition)
usually approximates equilibrium. Therefore, certain trends
should be operable and observable as tendencies by astute
students of society, whether or not they are using method-
ology which clearly reveals the details of social action.
While one might not want to pay too much attention to the
details of a literature based on less than reasonably ade-
quate hypothetical specification of relationships of variables
as well as statistical measurement, that literature ought to
reveal broad trends and lend itself to insightful inferences.

It is recognized that the conceptual model presented
in the following is quite sketchy. However, it should be
helpful in revealing the types of variables most likely to
be identified and the use to be made of them.

Needs of the Teachers for Inservice Education:

As one would expect, the extent to which teachers feel
a need for inservice education is thought to be significantly
related to their acceptance of new programs. However, it
was found that teachers perceive such needs for different
reasons. Obviously, this may call for quite different kinds
of programs and different methods of selecting participants
to become involved in these programs.

There are numerous references in the literature to the
need for new programs to change the output of the educational
institution from what it is at any given time to a level
and quality of output which is more closely aligned with
contemporary social expectations and needs. (Bishop, Lewis,
Moffitt and others) Goals which give rise to the need to
upgrade the quality of educational experience for the students
include the following: to contribute to more complete student
development; to maintain pace with the ever-accelerating

knowledge explosion, and to graduate students who are
familiar with the important and constantly changing posi-
tion of the United States (and its people) both with
respect to international and domestic affairs. Thus, it
is suggested, at least in part, that inservice programs
are necessitated by the constant fluctuations in the goals
of primary and secondary education. If this is so new
inservice programs probably would be welcomed in proportion
to the extent to which the new goals are understood and
agreed upon by teachers--other things being equal.

Other needs for inservice education programs are related
to the widespread requirement for participation in them in
order to acquire and retain certification, promotions and
professional status (Dickson) and the necessity of new teachers
in a system to acquire knowledge about their organization and
its policies, about the nature of the community in which it
is located (Childress; Hunt; Kinmick), and about the likely
future social roles of the students who will be graduated.
(Flanagan)

While the extent to which teachers feel a need for in-
service education is of crucial importance for the success
of new programs, planning such programs solely in terms of
goals stated as broadly as these probably would be a mistake
in most cases. Inservice education must be related to the
specific needs of teachers, as they view them (Kinmick;
Parker), and the teachers must believe that they can move
from ideas to action in the classroom--that is, that the
results of inservice programs can actually be used in experi-
mentation and demonstration in the classroom. (Parker) All
too often, it would appear, teachers have participated in
inservice programs and, subsequently, have discovered that
they were unable to change classroom procedures and practices
because the new ideas and procedures were in conflict with
the attitudes and the expectations of administrators and/or
community residents.

Apparently to insure that inservice education is more
clearly and closely related to the strongly felt needs of
teachers, they have increasingly demanded a larger voice
in planning and implementing programs relative to school
administrators and spokesmen for the general public, such
as board members. (Cartwright; Corey; Richey; and others)
Not entirely surprisingly, these demands have met with more
than a little success. Indeed, it is now possible to state
that whether a new inservice program meets with success or
failure is clearly related to whether or not those in whom
behavioral change is sought are integrally involved in
designing and carrying out the programs attempting to change
their behavior.

It is interesting to speculate as to why this appears to be true in general. One reason might be that our society has increasingly accepted the principle of democratic decision-making when important decisions are made. At least one would prefer to think that this is the reason. However, it also appears true that most of the movement in this direction occurred during the particularly favorable period of the 1950's and 1960's. During this time a general teacher shortage existed because too few teachers were being graduated and/ or the rate of mobility of teachers to other occupations was high because of general shortages of college-trained people in a fairly dynamic and prosperous economy.

Whether or not teachers, administrators, and others can jointly plan more effective inservice programs, however, does not depend only upon the fact that all interests are represented. The literature recognizes, though without much sophistication, that the behavioral change quality of such joint efforts depends critically on the extent to which such parties approach a "group" relationship, a relationship in which different people have different roles but nonetheless value other group members and feel a sense of interdependence with them. Because of the emergence of this need during a period in which the interests of an increasingly large number of groups came to be represented in the design and conduct of inservice efforts, it sometimes appears in the literature that efforts to achieve "<u>groupness</u>" or "<u>interaction</u>" more than occasionally came to prevail over efforts to accomplish <u>substantive</u> educational change. While empirical data are not available to confirm or refute this possibility, future study for the purpose of inservice program evaluation should attempt to deal with the question of how much "groupness" is productive of substantive educational progress. Several recent studies including that of Silberman conclude that many master plans for education "mask an absence of serious thought or substantive change." (Silberman)

Opportunities for Inservice Education:

It is widely recognized that a large number of groups must provide support and encouragement for new programs of inservice education. Meaningful participation in such programs depends importantly on the support and encouragement they are given by school administrators, community residents, university and college faculty and staff, and the professional educational societies. (Blick; Goodlad; Mauker; Moore; and others)

With respect to the content of inservice programs, it is recognized that ultimately the local school administrators and the community residents make the decisions. At the same

time, however, it is probably true that the decision-makers
will make the best decisions if they have at their disposal
the most advanced information about educational problems
and opportunities available. This seems reasonable and,
hence, is advanced as a significant variable in changing
traditional inservice educational procedures.

With respect to the administrators and the community
residents, and apart from matters of program content, it
has been suggested that inservice programs must have ade-
quate resources: (1) to free participant teachers from
economic worry (i.e., inservice education should be done
on school time), (2) to provide appropriate physical condi-
tions (Moffitt; Otto) and, to make available "outside"
expertise to plan and carry out new programs. (Parker)

Colleges and universities, of course, have roles to
play in any inservice education program concerned with change.
These institutions of higher learning must provide preservice
education programs which will encourage the development of
a felt need among teachers to accept inservice development
as a personal obligation, colleges and universities must
implement new inservice programs and assume a greater measure
of responsibility for the design and conduct of career-long
educational experiences for their graduates and other teachers
in their geographical areas.

There is, however, comparatively little support in the
literature for the typical off-campus credit courses offered
by colleges and universities. Apart from criticism of their
content (which is viewed as fairly traditional), these courses
are thought to be relatively unimportant to the colleges
offering them in the sense of their return to the colleges'
academic standing and, hence, relatively weak in terms of
any content and educational inspiration. It is entirely
possible that much of the criticism of the off-campus credit
courses is due to their failure to meet specific classroom
needs. Nor are they generally taught by people who view
inservice work as having high value to them (i.e., devoting
substantial amounts of their time, interest and energy to
such work, and being evaluated in terms of success or failure
of that work rather than according to its value relative to
some alternative activity).

It would appear appropriate at this point to suggest
that it might be worthwhile for the colleges and universities
to establish education centers which have research capabil-
ities to determine the needs of primary and secondary teachers,
access to resources both inside and outside higher education
relevant to those needs, and the means of bringing them to-
gether in ad hoc relationships. Hopefully, if such an effort

was attempted it would be objective in origin, implementation, and evaluation, and not responsive to political forces which attempt to influence and control education policy at any given level of society.

Techniques of Educational Innovation:

Even when teachers feel a need for inservice education and perceive realistic opportunities for satisfying that need, new programs may fail if they are not designed and developed carefully. (Flanagan; Leep; Lewis) Flanagan suggests that the following techniques be employed in making educational innovations:

1. provisions for discussions with school staff, parents and pupils concerning the implications of the change--such discussions should give both information about the change and obtain reactions to it which might result in modifications of the new program;

2. presentations of the new program to educational administrators and supervisors, pointing out possible changes in costs and benefits;

3. introduction of the change to a relatively small number of students by teachers who volunteer to engage in the experiment followed by prompt evaluation of the results--such teachers would be prepared for the experiment by a special training program;

4. follow-up efforts with supervisors to insure that the new program gets a fair trial in its intended form;

5. provision for rewards to teachers and students for sought after behavioral changes;

6. careful evaluation of the new program in terms of both intended and unintended positive and negative behavioral change and determination of why the observed changes occurred;

7. gradual extension of program successes in the school system.

Flanagan's suggested techniques, for the most part, really do little more than summarize many of the ideas presented previously. To maximize the success of new programs, it is vital that the need for them exists among

all parties who can significantly influence the outcome,
that skills for trying them be created, that actual attempts
at classroom change be permitted, and that the results of
classroom change be measured through scientific evaluation.
However, it is worth noting Flanagan's suggestion that
initially educational change should be attempted experimen-
tally on a small scale and then, after success is established
in behavioral terms, extending the change more broadly. This
would appear to be a particularly valuable strategy when the
educational innovation and environmental conditions are not
well known by those attempting to make the change.

The establishment of the success (or failure) of new
programs is heavily dependent upon the use of evaluation
techniques which include a number of elements commonly asso-
ciated with the process of research. For the most part,
the preservice education of teachers makes little provision
for this kind of work. Nevertheless, efforts at evaluation
focus on the consequences of behavior and if the evaluation
is done by those attempting classroom changes (i.e., the
teachers themselves) they are in a position of directly
determining the results of inservice education and, presumably,
this could heighten interest in such programs as well as pro-
duce more precise suggestions for efficient change. As a
result of this factor, it has been claimed that evaluation
and action research should be used much more extensively in
inservice education. (Moffitt) The use of evaluation is
within the intellectual grasp of most teachers and, seemingly,
could serve as a very useful means of planning and implement-
ing new inservice programs.

Size of the School:

Finally, another variable thought to affect the nature
and rate of introduction of new inservice education programs
is the size of the school organization for which the program
is intended. Gilcrest and Fleistra summarize the situation
aptly as follows:

> "For the most part, a good organization for in-
> service education in the single school or in a
> small school district is good for a city school
> system as well. The large school systems, however,
> face problems which are particularly their own
> and which become increasingly severe as the number.
> of separate school units in the system increases.
> In the first place, the problem of identifying
> the concerns of teachers and enlisting the aid
> of large numbers of them in the planning of activ-
> ities becomes increasingly difficult. At the
> same time, as a city system grows, there is
> increased need for an inservice program that

will promote common purposes throughout the
system. The greater the number of people
involved, the more difficult it becomes to
arrive at common understandings of goals and
the methods of reaching them." (Gilcrest)

Some sociologists describe the function of the social
system as that of maintaining a workable balance between
the individual and his environment. In recent decades,
apparently more than ever before, more and more of the
responsibility for performing this function has fallen
to the primary and secondary schools and, consequently,
the teachers in these schools.

Inservice education can play a major role in preparing
the teachers to more completely fulfill the new functions
that society has thrust upon them.

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