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ABSTRACT
                The Guided Self-Analysis System for Professional
Development (GSA) has been designed to assist practicing classroom
teachers in their efforts toward self-improvement. The system
consists of several programs of carefully sequenced interaction codes
with which the teacher analyzes a videotape made in his own classroom
and comes to a more objective understanding of his own teaching
behaviors. Each program directs the teacher to an important
educational objective--development of skills in critical-analytical
thinking, development of language skills, maintenance of pupils'
motivation for learning, etc. Each schedule is a carefully written
guide enabling the teacher to do his own analysis and interpretation
of a recorded sequence of teaching behaviors. The GSA codes may be
designed to fit any teaching situation and provide focused feedback.
Coding schedules can be structured to emphasize any particular
curricular concern, and since curriculum content and instructional
procedure are closely related, properly designed schedules have
impact on both areas. [Further information about the GSA system may
be obtained by writing to the author.] (MBM)

GSA
guided self-analysis

professional development systems
Theodore W. Parsons, Director

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Education Series: OVERVIEW

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TABLE OF CONTENTS

Abstract

GSA is a practical procedure which
has proven to be highly effective
in furthering professional devel-
opment. GSA is clinical in that
it operates through analysis of
real professional behavior. It is
an open system in that the GSA
procedure may be employed in a
variety of professional contexts.

Overview

The Guided Self-Analysis System for Professional Development (GSA)
has been designed specifically to assist practicing classroom
teachers in their own efforts toward professional self-improvement.
The system consists of several programs of carefully sequenced in-
teraction codes by means of which the individual teacher analyzes a
videotape made in his own classroom and comes to a more objective
understanding of his own teaching behaviors. Each program of inter-
related codes (or schedules) directs the teacher's attention to an
important educational objective, e.g., development of skills in
critical-analytical thinking, development of language skills, main-
tenance of pupil motivation for learning, etc. The particular codes
which are sequenced into a given program help the teacher operation-
alize the general objective upon which the program is based and ex-
press the objective in terms of its component behaviors. Each code
in a program focuses the teacher's attention on a specific set of
precisely defined teaching behaviors which are prerequisite to the
general objective. The Language Development program, for example,
includes seven schedules which help the teacher operationalize and
analyze the specific behaviors employed in modern strategies for
teaching oral language development.

Each schedule is a carefully written guide which enables the teacher
to do his own analysis and interpretation of a recorded sequence of
teaching behaviors. It helps the teacher to define and identify spe-
cific categories of teaching behaviors and to express them in quanti-
tative terms. The teacher is asked to represent these graphically
and is provided with guidelines for interpreting their meaning.

As the teacher employs the successive coding schedules to analyze a
tape made in his classroom, he constructs a profile of his own teach-
ing behaviors. This profile can be compared with profiles of other
teachers or with an earlier one made by the teacher himself. A
major advantage of the profile is that, with additional tapings, the
teacher may compare his successive profiles and thus maintain a

2

graphic record of his own efforts toward self-improvement. Teachers
who have used the GSA have been especially interested in the fact
that they are able to "map" their progress as they strive for im-
provement. They have also remarked that the profiles enable them to
clearly identify areas of strength in their own teaching as well as
areas of needed change.

The videotapes may be made by a para-professional or by the teacher
himself. The taping procedure involves a minimum of classroom dis-
ruption, as the equipment is small and portable with no special
lighting required. The camera itself is the size of a book. At
each taping the technician will record a fifteen minute segment of
classroom interaction. Later the individual teacher views the tape
three or four times. With each viewing he employs a different code.
With each code he tallies observed frequencies of specified behaviors.
Teachers will be most willing to use their insights in attempting
self-improvement when their efforts are based on guided self-analysis
rather than the impressions of an external observer who may not know
the individual classroom situation.

The GSA is essentially an "open system." GSA interaction codes may
be designed to fit any teaching situation and provide focused feed-
back capable of producing significant improvements in teaching.
Coding schedules can be readily structured to emphasize any parti-
cular curricular concern, e.g., behavior management, content manage-
ment, affect management, small group techniques, teaching educational-
ly handicapped children, etc. Since curriculum content and instruc-
tional procedure are closely related, properly designed schedules have
impact on both areas. The structure of the GSA System insures that
the teacher will gain insight into patterns of interacted communica-
tion in his classroom, while the logic of the particular GSA program
he is using will relate these insights to his specific teaching ob-
jectives.

Design Constraints

The factors discussed in the previous section might be viewed as in-
ternal constraints to which the GSA must conform. They are internal
in that they pertain to psycho-dynamic processes within the teacher
and to interactive processes within the classroom. There is another

3

area of constraints which also must be taken into account if the GSA System is to be a significant technique for improving teaching. These are the constraints imposed by the political and organizational realities of mass education in contemporary American society. The principal criteria to be satisfied are as follows:

1. The training system must be physically "packageable." Local districts must be able to order a kit of materials which would allow them to begin their own inservice training activities with reasonable expectation that those activities will prepare teachers to appropriately implement the program materials.

2. The system must be self-contained, thus reducing the need for expensive and difficult-to-obtain external consultants. The limited availability of qualified professional teacher educators has been a major factor inhibiting dissemination of new programs.

3. The materials and procedures in the training system must be as simple, clear and concise as possible. Utilization of the training system (and consequently the quality of the implemented program) very likely will depend on the ease with which the training system can be employed and understood by the local personnel.

4. The program must be capable of easy implementation within existing patterns of school organization. Though a successful inservice professional development program may result in alterations in school structure, the success of a program is ultimately dependent upon the fact of its having been implemented at all. Where implementation of a program requires elaborated structural arrangements, initial resistance may be high and the chances of success severely diminished.

5. The system must be structured in such a way as to provide a means of "quality control," i.e., provide a realistic and standardized set of analytic categories through which one can at any time assess progress. Administrative decisions to continue a program are properly based upon objective evidence of

4

effort. A good training program will have a built-in means of providing such evidence.

6. The content and form of the training program must build upon prevailing definitions of what is useful and practical. Teachers, administrators, and parents must see the program as desirable, realistic, and operationally feasible.

7. The materials and procedures must have a dramatic impact upon teacher users. Success of the training system will depend on the extent to which it can arouse and focus the motivational energies of the teacher, thereby stimulating continuing efforts at self-improvement in teaching.

8. The program must include provisions for continuing operation. Successful reorientation of teaching practice and associated school organization results from sustained effort supported by continuing and structured feedback regarding the nature and consequences of those efforts.

9. The training system must strive for maximum effectiveness at minimal cost to the local district.

The GSA System and Interaction Analysis

GSA is closely related to the work of Robert F. Bales, Edmund J. Amidon, Ned A. Flanders, and others who have used techniques of interaction analysis.[1] These techniques employ analytic schemes for identifying units of behavior and "mapping" their relationships in

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1. The background and use of these techniques is reviewed in the following works. The recent book by Ned Flanders will be especially useful to those seeking a comprehensive overview of developments in the field of education.

8

space and time. The behavioral maps which result are then interpreted
or analyzed according to the particular theoretical and/or value ori-
entations which guide the observer.

The procedure requires an observer to sit in a classroom or other sit-
uation, to view a videotape or to listen to a sound recording. As he
follows the flow of real or recorded events, he identifies specific
units of behavior and makes a notation of its occurrence. The obser-
ver utilizes a set of descriptive categories which enable him to
structure his attention so that he can perceive, discriminate and re-
cord the behaviors as they occur. The resultant series of notations
provides the map which is subjected to interpretation and analysis.

Interaction analysis techniques have been used extensively in the
study of teaching behaviors. Indeed, they may well have become the
predominate means for studying classrooms. With the proliferation of
such research there has arisen a multiplicity of category systems.
Though these focus attention on varying aspects of classroom behavior,
most are alike in that they organize their component categories into
a single scheme or matrix. The Flanders system, for example, includes
ten basic categories which are structured into a 10 x 10 matrix.
Other systems contain up to thirty-six categories of behavior. It is
important to note that the component categories of each of the major
interaction analysis systems are organized into a single scheme. The
observer must memorize the whole scheme and keep all categories in
mind while viewing a classroom sequence.

The researcher who uses one of the well known systems generally ob-
serves a sequence of behaviors and codes its components into the ap-
propriate categories. Once the sequence has ended, the observer has
finished. The detail and complexity of the observation are dependent
upon the elaboration of the category schema and the coding skill of

Amidon, Edmund J. and John B. Hough (eds), Interaction Analysis:
Theory, Research and Application. Reading, Mass.: Addison
Wesley Publishing Co., 1967.

Bales, R.F. Interaction Process Analysis. Reading, Mass.:
Addison Wesley Publishing Co., 1950.

Flanders, Ned A. Analyzing Teaching Behavior. Reading, Mass.:
Addison Wesley Publishing Co., 1970.

6

9

the observer. Since the desire to produce even more thorough pro-
files of classroom behavior is a vital force in educational research,
the category systems have become increasingly elaborate and complex.
The result of this complexity has been increasing attention to the
problem of training observers, and to the concomitant problems of
controlling for inter-observer reliability.

The increasing complexity of interaction analysis systems in educa-
tion derives from the fact that these systems have quite generally
been designed for research purposes. Recent efforts to convert what
are basically research procedures to professional training have raised
some problems which have influenced the nature of the emerging train-
ing programs. Because of the complexity of the category systems it
has been necessary either a) to employ a trained observer who "feeds
back" the resultant data to teachers, or b) to mount a lengthy program
for training teachers to do their own coding.

The first of these alternatives has proven to have limited impact upon
the behaviors of teachers. The limitations are evidently due in part
to the fact that the observer in such situations functions as an inter-
mediary agent between the teacher and his own behaviors. As such, the
observer easily becomes an object of displacement against whom the
teacher can defend and rationalize his behavior. The teacher can al-
ways say that the observer was in error. Recent research by Daniel
Birch[2] at the University of California substantiates this conclusion.
Birch found that the familiarity with the categories and coding meth-
ods used in the interaction analysis represented in the GSA Teaching
for Inquiry program, did NOT have any significant impact on preservice
teaching behavior. Even when theee teachers were sufficiently familiar
with the method to code videotapes from other classrooms, there was no
significant application of insights to their own teaching strategy.
However, when familiarity with the Inquiry program was combined with
the process of self-coding their OWN teaching behaviors, there was a
significant change in subsequent teaching style. From this finding
we can conclude that information given to a teacher as a result of an
outside observer's analysis will have little impact on his teaching
behavior.[3]

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2.   Birch, Daniel R., _Effects of Inquiry Orientation and Guided
     Self-Analysis Using Videotape on the Verbal Teaching Behavior
     of Intermediate Grade Student Teachers_. Unpublished doctoral
     dissertation. Berkeley: University of California, 1969.

7

Attempts to get around this problem by training teachers to do their own coding have not generally been successful. In many cases teachers have been either unable or unwilling to devote the necessary time and effort to the task of learning complex category systems and coding procedures. This can be a particularly difficult problem when teachers have only vague ideas of the value of the ultimate "pay off," or see it as being problematic. In other cases teachers have become so involved with the particular complexities of the coding systems and their use that their psychic energies have been expended in learning the coding systems, leaving little left over for self-analysis, motivation, etc. It is apparently commonplace to find that those teachers who have learned to use one of the complex category systems limit their active concerns to problems of coding.

There is a substantial body of theory and evidence that can guide us in our efforts to resolve these problems. It is clear that interaction analysis techniques can produce a marked impact when used to research one's own behavior. For this potential impact to be realized, however, both the coding system and the sequence of behavior must be easily available. The coding system can be made readily accessible to teachers by programming the categories so that only a few (4 ± 1) closely related categories are used at one time. By programming the categories into sequentially related subsets, each of which may be used independently, it becomes possible to induce complex insights in an orderly and understandable way. By replaying a videotape record of his own classroom behavior, each time using a different subset of the coding categories, a teacher can build a complex structure of self-knowledge. Each time he plays the tape he codes and analyzes for a separate but related set of behaviors. Because this procedure enables the teacher to develop substantial and manageable self-knowledge, it is capable of producing high impact upon teacher behavior.

A large part of the impact derives from the fact that such interaction analysis allows the teacher to view his actual behavior patterns and confront himself effectively for the first time. When these are

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3.   This conclusion is consistent with standard psychoanalytic theory and therapeutic practice. The patient himself does the "work" of analysis. The role of the therapist is to guide and facilitate the patient in his efforts to gain self-insight. See Greenson, Ralph R., The Technique and Practice of Psychoanalysis. New York: International Universities Press, 1967.

8

coded in line with a category system which focuses on the major ele-
ments of a successful teaching strategy, the teacher may become aware
for the first time that his teaching behavior is not at all what he
always assumed it to be. Thus he becomes directly aware of several
basic incongruences between his idealized images of his own classroom
behavior and his new understanding of the real situation. Self-analy-
sis induces a state of "cognitive dissonance" in the teacher's mind,
and this provides a strong motivation for him to resolve the conflict
through altering his teaching.[4]

In contrast to most applications of interaction analysis to the teach-
er training, the GSA System has been designed specifically to induce
and to channel this motivation. Unlike other interaction analysis
schemes in education, GSA was designed initially and specifically as
a procedure for staff development. From the outset, GSA was conceived
as a means of applying psychotherapeutic procedures to teacher train-
ing. The procedure has been structured so that it induces that cogni-
tive dissonance which is a precondition for behavior change. GSA also
helps the teacher establish an operationalized set of guides for al-
tering his behavior and thereby reducing the dissonance. Through re-
peated taping and analysis, the procedure also provides a means for
measuring the success of his efforts.

The impact of GSA is due largely to the fact that it avoids many of
the particular problems which are presented by the more elaborated in-
teraction analysis schemas. GSA makes it possible for the teacher to
obtain complex insights into his own teaching behaviors without first
getting extensive training. Multiple analysis of his own videotapes
helps the teacher to obtain insights which are vivid and meaningful.
Because the categories within each GSA program are organized into
structures of sequentially related units, each of which can be used in-
dependently, teachers are able to use the schedules quickly and effi-
ciently. The categories are readily applicable to the realities of the
classroom and enable him to discriminate among significant teaching be-
haviors. Moreover, the coding system incorporates critical principles
of learning which may be applied in a variety of teaching-learning
situations. Thus the categories are capable of helping the teacher to

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4. For further discussion of the effects of self-confrontation via
   analysis of videotape, see Geertsma, Robert H. and James B.
   Mackie, Studies in Self-Cognition: Techniques of Videotape
   Self-Observation in the Behavioral Sciences. Baltimore:
   Williams and Wilkins, 1969.

9

generate a clear model of successful teaching in terms of which he can measure and plan his own teaching strategies.

Theoretical Orientation

There are three bodies of theory which underlie the basic structure of the GSA System: 1) From psycho-therapeutic and psycho-dynamic theories, the GSA gains insight into the processes of self-integration and individual change, which are so important when intervening in the habitual patterns of a teacher's behavior. 2) From learning theory, the GSA utilizes the information about the important parameters of the instructional-learning process, which provides the structure around which the teacher can begin to build a more effective teaching strategy. 3) Finally from the area of cultural dynamics the GSA employs empirical data and theoretical formulations relevant to the functioning of social organizations, which form the boundaries within which the process of change in the classroom must conform. The GSA is a synthesis of these three areas of theory. The GSA procedure is an effort to systematically apply integrated psycho-socio theories to professional training.

The programs in the GSA System are designed to intervene in the role behavior which operates in the teaching situation. This intervention, if it is to be a positive force for change, must satisfy certain constraints. These constraints, some of which we have listed, can be classified as "external" and "internal." External constraints are those which have to do with the multidimensional relationship between the classroom setting and the school as an elaborate social organization. If the changes brought about by the GSA are too radically novel, that is, if they are not seen as consistent with the pattern of behaviors expected to take place in the classroom, then the program will be rejected by the school structure as a whole, no matter what the benefits for pupil learning are. Internal constraints, on the other hand, are those which reflect the problems involved in altering the teaching style in the classroom itself. For the teacher, who considers himself to be an adequately functioning professional, the changes which the GSA promotes must be seen as consistent with the explicit and implicit axioms which he holds to be true about teaching and educational objectives. Otherwise the GSA program will be undermined by the teacher himself.

Any attempt to introduce innovation into American schools will be suc-
cessful only to the extent that it takes clear account of the organiza-
tional and psychological factors which operate in such large scale or-
ganizations. The Guided Self-Analysis System is unique in that the
designers began their work with an attempt to understand these reali-
ties. These factors were conceived as constraints which must be met
if GSA, or any innovative program, is to make a significant impact.
Before we turn to a description of the Teaching for Inquiry program,
we will briefly consider certain theoretical assumptions surrounding
these constraints, and how they are related to the structure of the
GSA System.

Internal Constraints

In considering the internal constraints, we can begin with the teach-
er's role as he conceives of it. Teachers generally hold certain pro-
fessionally defined assumptions about their roles as teachers, among
which are the views that each teacher must try to do the best job he
possibly can, and that one of his primary objectives is to train his
pupils to think critically to the best of their abilities. A teacher
who signs up for a GSA program sees it as a possible tool to help in
both of these areas, and the program is designed specifically to do so.
However, as we mentioned earlier, the method of the GSA is to induce
cognitive dissonance in the teacher's mind through revealing a ''gap''
between the actual reality of his teaching and his professional defi-
nitions of what good teaching is.

Cognitive dissonance can provide an extremely strong motivation for
change, as we noted earlier. But actually, there are three possible
reactions to cognitive dissonance: 1) The dissonant facts may be re-
jected as false and wrongheaded. 2) The dissonant facts may be ''in-
terpreted'' in such a way as to be seen entirely consistent with the
person's normal behavior and beliefs. 3) The dissonant facts may be
taken seriously, causing the person to alter his original assumptions
and behavior.[5] It is the last reaction, of course, that the GSA

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5.   Festinger, L., A Theory of Cognitive Dissonance. Evanston,
      Illinois: Row, Peterson, 1957.

11

System is designed to promote. Either of the first reactions will
prevent a positive change in teacher behavior, and probably only suc-
ceed in making the classroom situation more rigid than it was origi-
nally. The GSA tends to inhibit these reactions by reinforcing the
teacher's identification with professional ideals and by offering him
a clinical means to operationalize those in his own classroom practice.
The GSA capitalizes on the very human desire to know who we are and how
well we do. This desire may be even more important than the teacher's
professional interest in maintaining continued involvement in the GSA
program. Thus, when the dissonance is induced, the teacher is more
likely to accept the discrepancies between his real behavior and his
ideals, and strive to narrow this distance through altering his teach-
ing style. In doing so he makes it possible to enhance his self-con-
cept through improving his definition of who he is.

The process of altering teaching behavior involves "re-transacting"
the role relations within the classroom. As the teacher encourages the
pupils to talk more, and to develop their own ideas in relation to the
topics under discussion, the entire atmosphere in the classroom is
likely to change. For example, it is common for a teacher to move
from a strategy of overt control through the domination of classroom
talking and authoritative instruction, to an indirect pattern of con-
trol in which he draws the pupils out in discussion, encourages them
to develop their own ideas, and keeps asking them to synthesize the
elements of the discussion into a coherent, substantial argument. As
these changes in the interaction patterns begin to take place, the
teacher must be building a new strategy of instructional behavior
which will allow him to feel comfortable with this new atmosphere, and
which will allow him to retain his position as the leader of the learn-
ing process. The GSA System satisfies this need by continually inform-
ing the teacher about what new behaviors to expect, and suggesting me-
thods whereby he can adapt this more "open" behavior into a coherent
strategy for facilitating pupil learning.

Because of the role separation between teacher and pupils, and the con-
comitant concerns of authority and classroom direction, teachers common-
ly place the problems of instruction second to the problems of classroom
control. This results in the often-cited situation in which the learn-
ing process is conceived as one in which certain instruction and infor-
mation are reviewed by the teacher, and then the pupils are tested for
recall and retention of observable operations. Unfortunately, this
means that the class is being "programmed" to handle certain ideas and
operations about which they may have little or no real understanding.
In the GSA System, the idea is impressed on the teacher that he must al-
low the class to verbalize their own reactions to the material under

12

15

consideration, that complex ideas must be built up from the matrix of
the pupils' familiar experiences, and that above all the class must
have the opportunity to struggle with their language in the process of
verbalizing their understanding of the ideas they deal with. This con-
ception of learning is underlined by the idea that teaching is a pro-
cess of helping the pupils to develop adequate critical-analytic think-
ing abilities. Teachers believe this to be true, and they will accept
as almost intuitively obvious the argument that to develop these skills
the pupil must have ample practice in verbally struggling with new
ideas

External Constraints

The external constraints are very elaborate and can vary tremendously
from one school setting to another. There are two factors of primary
importance: 1) The GSA program must be implemented smoothly and ef-
ficiently without unduly disturbing school routine. 2) The program
must be seen as consistent with school responsibilities and expecta-
tions. If these two general conditions are satisfied, it is likely
that the GSA program will be seen as a positive force within the school
structure.

As the GSA program begins to effect changes in the perceptions and be-
haviors of individual participating teachers, its influence begins to
be felt throughout the school. The teachers' positive reactions to the
program are regarded with interest by colleagues, teachers and adminis-
trators. This factor is immensely important in relation to the external
constraints, for the teacher role is pivotal within the structure of the
school. Beyond the classroom, the teacher functions in a variety of
role relationships, e.g., teacher-parent, teacher-principal, teacher-
teacher. As teachers who are participating in the program begin to
talk about their experiences with GSA and their developing insights into
teaching and learning, a ripple of change moves throughout the role
structure of the school itself. Participating teachers begin talking
to others not in the program; these others become interested and fre-
quently ask to be included in GSA. Teachers in the program become very
deeply involved and begin to experiment with alternative teaching stra-
tegies. As they do so, they often make demands on their supervisors and
administrators in terms of their developing conceptions of teaching.
These demands may, in turn, have profound influence on the content and

13

structure of the relationships between the participating teachers and
the supervisory personnel.

To insure that the GSA innovation does not become unduly disruptive, it
is important that the program be able to operate smoothly and efficient-
ly within existing patterns of school organization. This is taken into
consideration in designing the program so that it is clear, concise and
manageable. The introduction of videotaping causes few technical dif-
ficulties, and more importantly, it does not observably intervene in
the normal operation of the school schedule.

The GSA program is consistent with the professionally defined values
and expectations of the school personnel. Teachers and other personnel
begin with the assumption that the teacher's primary responsibility is
to teach children to think effectively. As the teacher becomes involved
in the analysis and implementation of the insights gained from the GSA
program, he begins to get a real understanding of what this means. The
coding categories he uses to analyze his videotapes provide him a means
through which he can monitor his strategies for promoting development of
thinking skills in pupils. Gradually the teacher becomes confident in
his understanding of cognitive development, and begins to accept and
meet his responsibility. At this point "teaching for effective thinking"
is no longer a slogan which may be too easily forgotten in an over-empha-
sized concern for classroom control.

The GSA Program: *Teaching for Inquiry*

Of the two GSA programs now operating,[6] the Inquiry Program has received
the most attention and publicity. New York City and many smaller cities
are currently using this program. The Inquiry Program embodies GSA's
underlying strategy. Thus it fully satisfies the external and internal
constraints we have just considered. As you read the description of
this program, keep those constraints in mind; you will be able to see a
constant dialectic between them and the structure of the program. In

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6. Teaching for Oral Language Development, Austin: 1968;
    Teaching for Inquiry, Berkeley: 1969.

14

its current form, there are six schedules (or codes) in the Inquiry
Program. Each schedule may be used independently, but their impact on
the teacher is greatly enhanced by the cumulative insights which result
when they are used together.

Each schedule is both a manual and a workbook. As a manual, it gives
the teacher guidelines for coding and analyzing videotapes of classroom
teaching. It also answers many questions teachers ask as they gain fa-
miliarity with the coding categories and procedures. The teacher should
use each GSA schedule as he would any other manual. He gets acquainted
with the schedule by consulting the Table of Contents and browsing
through Part One. Then he reads the explanations in Task One and the
precoded classroom dialogue in Task Two. After that, he uses the man-
ual as he would any programmed learning material. He does as many or
as few of the learning tasks as seem necessary. He will want to work
with the tapes as soon as possible. The purpose of the manual is to en-
able him to do so.

A brief description of the contents of each schedule follows:

SCHEDULE A - Questioning Strategies. Schedule A directs the teacher's
attention to the kinds of questions he asks pupils. He is asked to
classify his questions and the thinking the pupils must do to answer
them satisfactorily. The teacher is asked to consider how his ques-
tions help evolve pupils' critical-analytic thinking skills.

SCHEDULE B - Response Patterns. Schedule B points out that the teacher
may use a desirable questioning strategy, aiding his pupils' intellec-
tual growth; but arrest that growth with his own responses to pupil
statements. With Schedule B the teacher is asked to classify his res-
ponses. He decides whether his responses promote or inhibit further
pupil thinking. Then he is helped to interpret the relation of his
questioning strategies to his response pattern.

SCHEDULE C - Teacher Talk Patterns. With Schedule C, the teacher anal-
yzes his classroom talk. He determines the proportion of time devoted
to questions and responses, instruction, classroom management, behavior
management, etc. The percentages obtained are then entered into a
Teacher Talk Profile. The Profile also includes the data from Sched-
ules A and B. Aided by the guidelines provided in Schedule C, the
teacher analyzes the profile and determines to what extent the video-
taped lesson actually emphasized the development of inquiry skills in
pupils. He can readily note what portion of his own talk was instruc-
tional, and what portion was repartee with pupils. He can also explore
the role relationship he has transacted with pupils, as this is re-
flected in the pattern of his own talk.

15

SCHEDULE D - Teacher-Pupil Talk Patterns. It is with Schedule D that this last insight becomes most clear. Schedule D gives the teacher a means of mapping his pattern of communication with pupils. This map adds new meanings to the teacher's self-profile. It reveals the extent to which he intervenes in pupil statements, dominates the classroom with his own talk, controls the flow of talk--or helps pupils work through their own thoughts.

SCHEDULE E - Experience Referents. Schedule E helps the teacher assess how much he uses pupils' experiences in building new ideas. A teacher may employ a question/response strategy and a pattern of teacher talk which helps his pupils develop conceptual-analytic skills. His questions, however, may not relate directly to pupil experiences. Pupils will then have difficulty in understanding and answering him. He may also fail to motivate pupils if they cannot relate his questions to their past experiences, or to their own concerns and interests.

Schedule E asks the teacher to code his questions, and to determine how they relate to pupil experiences. The teacher is then helped to interpret the results. He determines whether his questions: 1) are relevant to pupil experiences; 2) are understandable by pupils; 3) build concepts through anaiysis of pupil experiences; 4) apply concepts and principles to analysis of pupil experiences.

SCHEDULE F - Levels of Thinking. Schedule F furthers the teacher's insight into his own teaching dynamics. It focuses the teacher's attention on the nature of pupil responses to his questions. With Schedule F, the teacher will be able to code the level of thinking required of pupils by each of his questions, and the level of thinking shown by the pupils' responses. The similarity between the level of thinking the teacher required and the level at which the pupils responded will then be mapped on a flow chart. With this map, the teacher can analyze his strategy for managing the cognitive development of pupils. He can also assess the relative success of his efforts.

Implementation Procedure

Following the external constraints for successful implementation in an organizational setting, and the internal constraints which indicate how the program can have the most positive impact on teacher behavior, a

GSA program is set into operation in a controlled and predetermined
fashion. The following steps will give you an idea of the actual
procedure involved in implementation:

1. Within each school setting an experienced super-
   visor or trainer is designated as a lead teacher.
   He is trained in the use of the program proce-
   dures and materials. He is also provided with a
   set of guidelines for implementing the program
   within his own school.

2. The lead teacher holds a workshop in which par-
   ticipating teachers are introduced to the GSA
   System. They are provided with initial expe-
   rience in analyzing videotaped samples of
   classroom teaching. The analysis is guided by
   a series of related interaction codes. Each
   code focuses the teacher's attention on a spe-
   cific type of teaching behavior.

3. They then use the interaction codes : ana-
   lyze a training film or tape. The film is
   viewed a number of times. Each time the teach-
   er views the film, he uses a different code to
   structure his analysis of the recorded perfor-
   mance. In this way he gains specific insights
   into the teaching strategies.

4. The lead teacher works out a schedule for
   taping and coding. The schedule will make it
   possible for each participant to videotape
   sequences of his own classroom teaching. The
   schedule also makes it possible for each par-
   ticipant to have access to the videotape equip-
   ment for the purpose of playback and analysis.

5. Under the lead teacher's guidance, each teach-
   er makes his initial videotape. Subsequently
   he replays the tape three or four times. Each
   time he replays the tape he codes it with one
   of the GSA schedules.

17

20

6. When the teacher finishes coding his tape, he
    converts his tallied frequencies of specific
    observed behaviors to simple percentages and
    graphs. The graphs provide the teacher with
    a visual and quantitative reference through
    which he can observe the success of his own
    efforts to analyze and alter his habitual
    teaching behavior.

7. Periodically thereafter, the teachers will be
    retaped. After each taping the teachers will
    use the interaction codes to analyze their own
    performances. Comparison of successive pro-
    files will tell the teachers how far they have
    progressed since the first taping and how much
    further they must move to reach their own de-
    veloping standards of competency.

8. At regular intervals, the lead teacher will
    conduct inservice workshops at which partici-
    pating teachers will:

    a) Review and discuss their growing insights
        into the teaching strategies as revealed
        through the use of the interaction codes.

    b) Discuss their growing understanding of
        the curriculum materials as revealed
        through successful (or unsuccessful) use.

    c) Discuss and attempt to resolve common
        problems through relating the advantages
        of different teaching strategies to con-
        tent and behavior problems.

    d) Share creative ideas regarding the employ-
        ment of the teaching strategies, elabora-
        tion and supplementation of the curriculum
        materials, management of classroom, etc.

18

21

Range of Applicability

The GSA System can be applied to a wide range of professional set-
tings. Its mode of interaction analysis is applicable to any group
size, whether it be a large meeting, small group discussion or a one
to one teaching-learning situation. Given the interaction setting,
the GSA codes can be focused on the content of any particular set of
teaching objectives. The GSA is an "open system" applicable to a wide
range of teaching situations, from professional training programs in
industry to special education programs in the school system. Here we
will include three illustrations of this broad range of applicability.

Language and Concept Development

Many remedial learning programs involve the problem of inadequate
language development. These can take a variety of different forms,
e.g., special programs for slow or educationally handicapped pupils,
programs for non-English speaking pupils, programs for upper-grade
pupils who have failed to learn to read. One widely used program of
the GSA System focuses on teaching for oral language development. In
its earlier form the GSA Language Development Program was applied to
the particular context of helping non-English speaking children to
learn English, but the same model can be validly applied to problems
of language development in general.

The GSA language program enables the teacher to continually monitor
the verbal progress of his pupils, and therefore their linguistic
development. This monitoring process is built into each GSA program
in a variety of ways. One important procedure provides the teacher
with a way to check the cognitive level of pupil responses and com-
pare this with his own expectations. The teacher may also determine
·whether, in cases of discrepancy, he moves to the pupil's level of
thinking and builds up from there. It is important for the teacher
to avoid the common pitfall of talking glibly on at a complex level
of verbal abstraction, unaware that his pupils cannot comprehend.

19

The Language Development Program focuses sharply on the process of teaching and learning language. The teacher is guided in providing pupils with a dialectic between their experiences and their developing language skills. A skillful teacher is careful to structure a prepossessing experience, and then to help pupils to express their perceptions of that experience in appropriate language. By moving from structured experiences to structured language, the teacher can control for development of both language skills and concept meaning. In this way he can optimize the potential concept meaning of limieed language. Where learning is based on pupil experiences, interest is high and the learning process is involving and exciting.

This method of teaching for language development is applicable to a variety of situations. The interaction between experience and language makes use of the intimate relation between our language competency and our understandings of the world. Initially language labels represent or symbolize what we already know but they also structure what we will learn. What we see in the world depends largely on what we can say about what we see; therefore continued development of language skills opens up new dimensions of experience. This process is reflected in the method of teaching implemented through the Language Development Program. Pupils become involved and interested not only because they can describe their experiences in a new language, but because they learn so much more about their experiences.7

The fundamental connection between language and conception also adds to the applicability of this GSA program to other language development problems. For example, educationally handicapped pupils often have an undetermined learning potential and a retarded learning rate due to genetic or psychological factors. Such pupils need adequate practice with phonemic and syntactical language patterns, as well as help in relating these to perceived and categorized experiences. The interaction between language and experience is vitally important for such pupils, as their relation to the environment may be functionally or structurally impaired. The program helps teachers determine whether they meet these pupils' needs by employing patient and controlled techniques for teaching language and content meaning.

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7. See Church, Joseph, Language and the Discovery of Reality: a Developmental Psychology of Cognition. New York: Random House, 1961.

Preservice and Inservice Training

Though the GSA System is applicable to preservice professional train-
ing, it is particularly effective as the focus of inservice school-
based teacher education programs. The GSA can also be utilized as a
combination preservice-inservice program, in which a student teacher
is paired with a master teacher in the school setting. This type of
combination program can be used to provide an alternate route into
teaching, as for example, in Stockton, California, where trainees
from the Teacher Corps are placed in the classroom as apprentice
teachers.

In preservice training programs, the GSA is advantageous because it
gives the student a concrete image of what a teacher does and why.
As the student makes practice videotapes and analyzes them in a con-
trolled setting, he gains clinical insight into the nature of his own
teaching and understanding of specific means to improvement. All too
often, students are put through "methods" and philosophy courses which
provide abstract definitions of good teaching. The many studies of
preservice programs reveal tha' such courses tend to alienate students
and thereby reinforce their pre-existing notions about teaching. Using
the GSA in preservice training capitalizes on the student's initial
enthusiasm, and provides him with realistic and clinical training be-
fore he is faced with the many demands of his first class.

The GSA has been used widely as an inservice program for school-
based teacher education. Again, it is significant that the GSA deals
with the actual process of teaching. Teachers see the program as re-
levant and practical because they are utilizing their own classroom
experiences as the data from which they derive insights into teaching
and learning. In this context they see the relationship between good
theory and practice. Often the same teachers who have rejected theory
in the context of the standard workshop are eager to discuss it within
the more clinical GSA setting.

Using the GSA in combination preservice-inservice programs provides a
matrix for coordinated interaction between the experienced and the in-
experienced teacher. Often the master teacher is at a loss as to what
role to take in relation to his student teacher. The GSA provides the
master teacher with a role as the senior partner in an ongoing inquiry
which is meaningful to both parties. The analysis of videotapes

21

provides a common language for use in talking about problems in teaching. Through this mutual inquiry the student teacher can gain significant understanding about teaching and in the process make a reciprocal contribution to the professional development of the master teacher.

Training Educational Assistants

The GSA can be used as a training ground which leads to new career opportunities. As the GSA operates in a school system or other organization setting, a team of para-professionals can be trained to handle and repair the videotape equipment and film the videotapes themselves. The skills learned can be used as an entry into jobs in such fields as electronics and TV. As one group is trained, becomes familiar with the techniques and finds jobs, new personnel can be brought in, thus creating a channel for moving disadvantaged and un-skilled personnel into satisfying careers.

The GSA also lends itself to the training of teaching assistants, aides and other classroom workers who are not training to be teachers themselves. The number of teacher aides is growing larger each year, but often their presence in the classroom is dysfunctional. Not only is it difficult to introduce supplementary personnel into the classroom, but the teacher aide commonly sees himself as a saviour destined to spare the class from the inadequacies of "traditional" teaching. This can result in a role conflict, leaving no room for the formation of a functioning instructional team. The GSA can be a mechanism for bridging the gulf between an experienced teacher and the untrained aide who has his own ideas about teaching. By providing a common language and shared experiences the program can lead to a cooperative effort. The teacher can invite the aide to participate in the program through helping in the instruction as the videotapes are being made. Later, both teacher and aide can participate in the mutual analysis of the videotape. In the analysis the teacher can assist the aide to a more definitive understanding of teaching strategy and its basis in pupil learning. Through subsequent discussion of ways to improve instruction, the teacher and aide can find means to work together more effectively. This process enables them to work out their role boundaries in mutual agreement and provides a strong incentive to perform as a cooperative team.

22

A Final Note on Applicability

The existing programs in the GSA Education Series are being used ef-
fectively by teachers in quite different settings. The schedules in
the Inquiry Program are being used by kindergarten teachers, elemen-
tary and intermediate school teachers, by senior high school teachers
and by junior college staff members. This range of application is
partly a consequence of the nature of the Inquiry Program itself.
The program is, in essence, an attempt to make basic principles of
learning operational in the form of criteria for self-analysis of
teaching. Of equal importance, and basic to the success of all GSA
programs, is the fact that most teachers quite readily understand
that fundamental principles of learning apply to any teaching-learn-
ing situation. What the teachers want to know is how well they are
doing in their efforts to apply these principles. The GSA provides
a means of finding out.

Current Implementation

The system was introduced into six New York City schools during the
1968-69 school year. About one hundred teachers participated in this
school project. Two high schools, one junior high school, one inter-
mediate school and two elementary schools were involved. The parti-
cipating teachers in these schools were volunteers.

The project was evaluated by the Center for Urban Education, using
the resources of the Tri-University group at N.Y.U. The evaluation
was highly positive, recommending that the project be extended to many
more schools. It also referred to the tremendous value Guided Self-
Analysis could have in preservice training of teachers.

For the school year 1969-70 Guided Self-Analysis operated in approxi-
mately 30 schools in New York City. Sixty-eight schools are partici-
pating in the 1970-71 program and more will be involved in the near
future. A Central Coordinating Committee has been established to co-
ordinate and supervise the program in New York City on a year-round
basis.

23

26

In the spring of 1970, a California school district ran a cost-ef-
fectiveness study on its pilot GSA program. It was concluded that
GSA was the least expensive inservice training program available,
largely because results were measurable. Local administrators recog-
nized that a typical inservice training program could entail spending
two thousand dollars on a lecture-workshop series. Such series nor-
mally lack built-in systems for gauging their impact on the actual
classroom teaching situations, consequently there are no clear ways
of establishing cost-effectiveness. These administrators found that
the performance measures built into the Guided Self-Analysis program
do provide a clear means for gauging its impact on actual classroom
situations. It was established that the program does in fact have a
measurable impact, and that it is substantial. Further, it was noted
that participating teachers were able to use Guided Self-Analysis to
embark on a program of continuously refining their teaching, as op-
posed to simply learning a closed methodology and applying it. In
addition it was observed that teachers who participated in the GSA
program were establishing new patterns of communication among them-
selves. In one school, for example, kindergarten and intermediate
grade teachers discovered that they not only often teach the same con-
cepts but employ very similar means for doing so.

The Guided Self-Analysis program is currently in use in more than 50
school districts. It is also in use in several community colleges,
some 15 universities, and in additional school districts related to
those universities. Twelve school districts in British Columbia use
the program under the aegis of Simon Fraser University. It is being
applied to both preservice and inservice training situations. Guided
Self-Analysis programs are operating in Guam, Puerto Rico, and conti-
nental North America from Alberta, Canada to Houston, Texas.

> Because of costs of purchasing and maintaining videotape
> equipment, some school administrators have found it ef-
> fective to combine video and audio recordings in their
> GSA programs. It is possible to schedule the use of the
> videorecorders so that teachers alternate between the
> use of audio and video tapes. Alternate scheduling en-
> ables districts to obtain maximum effectiveness from
> their videorecorders, and at the same time provide sig-
> nificant professional development opportunities for
> greater numbers of teachers.

24

27