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ABSTRACT

An instrument to help teacher supervisors in El Salvador to identify and measure good teaching was developed and tested. Because the supervisors were not trained as researchers, they needed an instrument that was simple to use as well as reliable. Several indicators were defined to distinguish between modern and traditional teaching methods, for example the ratio of discussion time to lecture time, the ratio of opinion and thought questions to memory questions, the use of learning aids, and the amount of time spent by students on projects of their own choosing. These were measured on a classroom observation form made up of 33 categories. Each category was divided into segments of class time. The completed form records the number of minutes the teacher spends at each activity--dictating, writing at the blackboard, reviewing individual projects, and the like. Approximately six hours were needed to train teacher observers to use the forms. The instrument was tested and proved effective. (MG)

TEACHER OBSERVATION

IN EL SALVADOR

JUDITH A. MAYO

RESEARCH REPORT NO. 5

This is one of a series of reports of research on the Educational Reform Program of El Salvador, and especially its use of instructional television. This report has been prepared by members of the Institute for Communication Research, Stanford University, on behalf of the Academy for Educational Development, under contract with the U.S. Agency for International Development.

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Research and Evaluation Reports on the El Salvador Educational Reform and Television Project published by the Institute for Communication Research, Stanford University, Stanford, California:

1. First Meeting of the Advisory Committee. Administrative Report No. 1. October, 1968. *

2. Design of the Study. Research Report No. 1. December, 1968. *

3. The Use of Television in the El Salvador Program of Educational Reform: Differences between This Project and Some Others. Administrative Report No. 2. April, 1969.

4. The El Salvador Educational Reform: Some Effects of the First Teacher Retraining Course. Research Report No. 2. July, 1969. By Emile G. McAnany, Generoso Gil, Jr., Donald F. Roberts. *

5. Measuring Educational Development through Classroom Interaction. Research Memorandum No. 1 September, 1969. By Wilbur Schramm. *

6. Parents Talk about ETV in El Salvador. Research Memorandum No. 2. October, 1969. By Luis F. Valero Iglesias, Emile G. McAnany. *

7. "Feedback" for Instructional Television. Research Memorandum No. 3. December, 1969. By Wilbur Schramm.

8. Research and Evaluation in the El Salvador Project of Educational Reform: What Is Being Tested and Why. Research Memorandum No. 4. January, 1970. *

9. Research and Evaluation in the El Salvador Project of Educational Reform: Some Preliminary Research Findings from the First School Year, 1969. Research Memorandum No. 5. February, 1970. By Emile G. McAnany. *

10. Television and Educational Reform in El Salvador: Summary Report of the First Year of Research. Research Report No. 3, May, 1970. By Wilbur Schramm, Emile G. McAnany, John K. Mayo, Robert C. Hornik.

11. Television and Educational Reform in El Salvador: Complete Report on the First Year of Research. Research Report No. 4. July, 1970. By Emile G. McAnany, Robert C. Hornik, John K. Mayo.

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TEACHER OBSERVATION IN EL SALVADOR

Introduction

What constitutes good teaching? This question has been asked, puzzled over, and debated throughout the history of education. Probably no two people would agree completely with any single answer, because education has many different goals and many different ways of achieving them.

Why, then, worry about what is good teaching? Why not be content simply to measure the results -- what the student learns and how he changes in the course of being taught? One reason is that we would like to know what kinds of teaching bring about different results. We would also like to know how best to train teachers.

In El Salvador, there is yet another reason to worry about what is good teaching. The Ministry of Education is involved in a wide-ranging program of Educational Reform. Its goal is to help teachers progress toward modern pedagogy, just as farmers, doctors, and managers are helped to move toward modern techniques and skills. The success of the Reform depends partly on school supervisors' ability to recognize and evaluate the changes occurring in their schools, so that where progress lags, they may help teachers make adjustments.

The process by which supervisors developed an instrument to help them identify and measure good teaching, and some of the findings from that instrument, are described on the following pages.

The Educational Reform and school supervision

The first phase of El Salvador's Educational Reform focused on the junior high school (grades seven, eight, nine). Its major components included the preparation of new curricula for all subjects, introduction of instructional television, development of a new system of evaluating and promoting students, a full year's retraining course for junior high school teachers, and a new and expanded system of school supervision. Previously, the school supervisor had functioned primarily as a fiscal officer and inspector; his new role was to help teachers adjust to the many changes occurring, and continually to stimulate improvement in the quality of teaching.

During the first year of "new supervision", we neglected to face squarely the problem of what "improvement in the quality of teaching" really meant. Consequently, after months of giving demonstration lessons, and helping teachers plan classes and develop teaching materials, we had no concrete evidence that those efforts had been successful in improving teaching methods. Subjectively, conclusions were reached as to whether a specific teacher was using "modern" techniques or "traditional" ones; however, there were no agreed-upon criteria on which to base those judgments, and there were frequent differences of opinion among the supervisors.

After that experience, we decided that some standardized form for observing and evaluating teaching behavior was urgently needed. We felt that we needed some instrument that would demonstrate not only differences among teachers, but also the progress of individual teachers toward the adoption of modern teaching methods.

We also recognized certain limitations. Supervisors were not trained as researchers; therefore, they required as simple an instrument as possible. In addition, because of the exigencies of their work, they needed a method requiring a minimum of training time to achieve reliability, and one that could be rapidly tabulated. Above all, the instrument had to be of practical value to their work.

In the United States, there have been developed some excellent instruments for describing the interaction between teacher and pupils in a classroom. The Flanders measures are an outstanding example. There are also numerous evaluative instruments, among them the IOTA (Instrument for Observation of Teacher Activity) and the Robertson Teacher Self-Appraisal System.

Good as these methods are, they typically demand highly expert observers who need a great deal of training. Further, they assume substantial interaction between teacher and students, and there is little such interaction in the classrooms of El Salvador. We did not feel that they were the kinds of instruments that could be readily used by Salvadoran supervisors trying to help the teachers of their developing school system.

After consideration, we decided to develop our own observation method, and while no model adequate to our needs was available, the guidelines for the method ultimately adopted were taken from C. E. Beeby's book, The Quality of Education in Developing Countries. Beeby's hypothesis is that developing educational systems evolve through four stages, and that the level of general education and the

amount and kind of professional preparation of teachers is directly related to their stage of development.

Briefly, at Beeby's first level of development, termed the "dame school" stage, most teachers are poorly educated and sketchily trained. Because the curriculum is vague (or nonexistent), the teacher is the sole authority of knowledge, and the students' school day consists of little but mechanical drill, memorization, and choral recitation.

Second is the Stage of Formalism, at which teachers are ill educated but trained. Authority is centered in the official program of studies, and the teacher lacks the self-confidence to adapt that program to the interests and needs of his students. Most of the questions asked by the teacher have a single correct answer. The student continues to serve largely as a passive receptacle for knowledge poured into him by the teacher.

At the Transition Stage, teachers are better educated than at Stage Two, and they are better trained. The program of studies is followed less rigidly, and students learn that not all the answers are contained in the syllabus. The teacher's professional training increases his self-confidence, prompting him to introduce activities of his own invention and to enrich the school day with special projects and audio-visual aids. Students are active participants in the learning process, and they ask questions and bring their own experiences into the classroom.

The Stage of Meaning has well-educated, well-trained teachers

who encourage students to think for themselves. The learning process is individualized to relate to the needs, interests, and abilities of students. Much time is devoted to projects, problems, and exercises chosen by the students themselves.

Beeby's theory of educational development is pertinent to El Salvador. Here the majority of secondary teachers have 11 years of general education; their professional preparation occurs at either the high school or junior college level (in rare instances, at the university), and for the majority it is the high school level. As might therefore be expected, prior to the Reform, their teaching style reflected Beeby's second level of development, the Stage of Formalism. The official program of studies was rigidly adhered to. Teaching consisted mainly of lecture and dictation, and the student's role was to memorize what was said by the teacher in order to reproduce it verbatim on examinations.

The Educational Reform seeks to change this situation. One means of change is through the new curricula. The previous programs of study contained long lists of unrelated facts to be memorized; the new programs are concept-oriented, emphasizing understanding and applying concepts rather than remembering facts. The new programs, unlike the old, also include methodological suggestions to aid teachers in planning their classes.

Further encouraging student participation, the Reform has de-emphasized written examinations in favor of the evaluation of various other student activities, such as reports, essays, dramatizations, investigations, experiments, map-making, etc.

The Reform also introduced instructional television as a means to enrich the students' school day with information and experiences otherwise unavailable in their own classrooms and communities. In addition, it was hoped that the teleteachers would provide models of good teaching that could be emulated by classroom teachers.

To help teachers prepare for change, a new normal school was organized to provide a full year's retraining. Courses provided dealt with the content of the new curricula, evaluation techniques, guidance, the utilization of instructional television, the preparation of audio-visual materials, the organization of school libraries, and methodology.

Believing Beeby's typology relevant to El Salvador's developing school system, we felt it could provide the guidelines for our observation instrument. However, while Beeby describes the path of change, he does not indicate how progress along the path can be measured. Our task was to devise a simple means of measuring that progress through observable classroom behavior. How could that be done?

Drawing on the supervisors' experience, we found it relatively easy to characterize "traditional" -- pre-Reform -- teaching in behavioral terms. "Traditional" teaching involves only a few different kinds of behavior: The teacher lectures and dictates for nearly the entire class period; when he asks questions, they are nearly all of the memory (single-answer) type; he depends heavily on the blackboard to write résumés and exercises for students to copy; students almost never ask questions, give opinions, or otherwise participate in class except to copy or "recite".

Given these characteristics of the "traditional" classroom, we then asked ourselves what observable changes we expected to see as the Reform spread through the schools.

We decided that the following items of behavior could help us determine a classroom's level of development:

Teacher lecture and dictation: As a classroom develops, we supposed that dictation would gradually disappear and lecture time diminish, while the proportion of student talk and activities increased.

Teacher questions: The kinds of questions asked by the teacher should be an important measure of development. As a classroom progresses, the proportion of opinion and thought questions (multiple-answer) to memory questions (single-answer) should increase. By memory questions we mean those with a single correct answer (What are the seasons of the year? Who was the first president of El Salvador?). Opinion questions are those relying more on point of view than logical thought, but which permit a variety of correct responses (How might you make a prose version of this poem? What do you think of this play?). Thought questions are those requiring students to make deductions, comparisons, generalizations, etc. (Is this a lyric or an epic poem -- why? Why are these triangles equal? What formula can you deduce from this exercise?).

Use of learning aids: In the early stages of development, a syllabus or text and the blackboard are likely to be the only learning

aids used. As a classroom develops, other learning aids -- pictures, charts, maps, demonstrations -- should begin to appear. Their use should increase with further development, until finally learning aids are individualized.

Individualized instruction: As a classroom moves upward, a portion of the teacher's time should begin to be devoted to directing group exercises and activities, and to helping individual students. With further development, these activities should gain importance.

Homework assignments: As a classroom progresses, the teacher should increasingly assign homework that requires investigation and reasoning by students.

Student questions: In the first levels of development, students ask few, if any, questions. Most of those they do ask involve classroom procedure (what are we supposed to do?). As a classroom progresses, students should begin to ask some clarification questions (what does this mean?) and then thought questions (what would happen if. . . .?). As development continues, thought questions should predominate.

Student talk: In the "traditional" classroom, students rarely venture an opinion without being specifically asked for it by the teacher. As a classroom moves upward, we expect more opinions to be volunteered by students, and some discussion among students to occur. As development continues, both activities should increase dramatically.

Small group and individual work: In the earliest stages of development, group work is nonexistent, and the individual work done by students is mechanical (practicing mathematical operations, copying from the blackboard). As a classroom develops, occasional group work should occur, and the individual work assigned students during class should require more thought and investigation. Farther along the development path, students should spend an increasing amount of time working on projects, problems, and exercises of their own choosing.

The observation form

The sample observation form (translated from the Spanish) on the following page illustrates the items of behavior selected for observation. A few items pertinent to supervisors' work but not necessarily related to development are also included. These are the three items on the student half of the form labeled "Repetition drills", "Question-answer drills", and "Dramatizations". They were included for observing foreign language (English) teachers whose retraining course included techniques of oral-aural language instruction. To find out whether teachers were applying those techniques, these items were added to the form.

Even so, it is apparent that not all of the possible classroom activities were selected for observation. Other possibilities -- the teacher's ability to maintain interest, his knowledge of the subject matter, his ability to relate a topic to the students' own environment and experiences -- were purposely excluded as being too difficult to

OBSERVATION FORM

SCHOOL _____ TOWN _____ DATE _____

TEACHER _____ SCIENCE ☐ HUMANITIES ☐

GRADE _____ TV ☐ NO TV ☐ ACT ☐ WB ☐

SUBJECT _____

THEME OF THE LESSON _____ The teacher had prepared his class in advance: ☐ Yes ☐ No

TEACHER

1. Lectures
2. Dictates
3. Explains (Responding to Spanish question).
4. Asks procedure questions.
5. Asks memory questions to group.
6. Asks memory questions to individuals.
7. Asks opinion questions.
8. Asks thought questions.
9. Uses blackboard.
10. Uses demonstrations.
11. Uses audio-visual materials.
12. Directs exercises in groups.
13. Works individually with students.
14. Supervises student activity.
15. Suggests individual projects.
16. Reviews individual projects.
17. Assigns homework.
18. Assigns investigations as homework.
19. Checks homework.
20. Teacher behavior during Teleclass: _____
21. Student behavior during Teleclass: _____

STUDENTS

1. Ask procedure questions.
2. Ask memory questions.
3. Ask thought questions.
4. Go to blackboard.
5. Give opinions.
6. Take part in discussions.
7. Work in small groups.
8. Work individually.
9. Work on individual projects (chosen by students).
10. Repetition drill.
11. Question-answer drills.
12. Dramatizations.

measure. Also, it was felt that those activities selected for observation were adequate for supervisors' needs.

How to record observations

Once the activities to be observed were selected, the problem was to devise a simple means of recording their occurrence in the classroom. We decided to build our form on a time basis. As seen on the sample form, beneath each activity is a line of five boxes:

1. Lectures

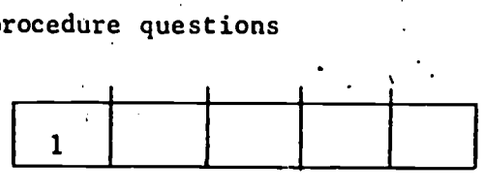
1	2	3	4	5

Each individual box (☐) represents five minutes of class time. During the first five-minute observation period, the observer marks the first box of every activity engaged in by both teacher and students. For example, let us suppose that during the first five minutes observed the teacher began by lecturing for three minutes on a new math formula. He then asked a student where the chalk was, spent a minute writing problems concerning the new formula on the board, and afterwards directed students to solve the problems in their notebooks. For those five minutes, the observer would have marked the following items in this way:

TEACHER:

1. Lectures

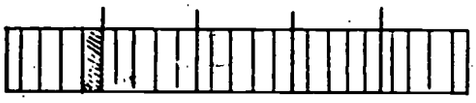
4. Asks procedure questions



9. Uses blackboard

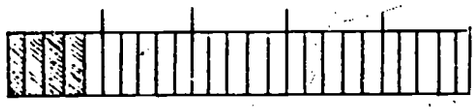
STUDENTS:

8. Work individually



As will be noted, for those activities requiring an accurate time measure (Lectures, Uses blackboard, etc.), each five-minute box is subdivided into one-minute segments. In cases where frequency is more important than duration (Asks procedure questions, etc.), the observer marks each separate occurrence. It is also worth noting that, in the above example, had the teacher continued to lecture at the same time he was writing on the blackboard, the form would have been marked as follows:

1. Lectures



9. Uses blackboard

Observations are recorded in the same fashion during each of the four remaining five-minute periods.

In any given 50-minute class period, observations are recorded for only half that time. It was decided to do this to obtain equivalent observation time in television and non-television classrooms. In classes with television, the first 10 minutes are taught by the classroom teacher, the teleclass consumes the next 20 minutes, and the final 20 minutes are again taught by the classroom teacher. Being primarily interested in the classroom teacher, the supervisors decided not to record behavior during the 20-minute teleclass. In a classroom with television, observations are recorded for the following five-minute periods:

8:00 - :05 -- no recording
8:05 - :10 -- first box
8:10 - :30 -- teleclass (no recording)
8:30 - :35 -- second box
8:35 - :40 -- third box
8:40 - :45 -- fourth box
8:45 - :50 -- fifth box

In non-television classes, observations are made by alternating five minutes of recording with five minutes of non-recording throughout the 50-minute class:

8:00 - :05 -- no recording
8:05 - :10 -- first box
8:10 - :15 -- no recording
8:15 - :20 -- second box
8:20 - :25 -- no recording
8:25 - :30 -- third box

ETC. ETC.

In practice, alternating recording periods in this manner presented no problems. Twenty-five minutes seems sufficient to record all significant classroom behavior.

Training observers

The first step in training observers was to familiarize them thoroughly with the meaning of each item on the observation form. Once this was done, they were instructed in the mechanics of recording observations. Several five-minute segments of video-taped classes were then viewed, while observers practiced recording activities on the form. Difficulties and uncertainties were discussed whenever they occurred, until all the observers learned to mark the form in the same way. These steps required approximately two hours' training time to achieve inter-observer reliability.

The remaining four hours of training were spent achieving reliability on question classification. Video-taped classes were again viewed and written samples of questions taken from various classrooms were discussed.

Two separate observer groups (six members) attained 90 per cent or more inter-observer reliability on all items, in six hours. On the other hand, when we tried to train larger groups (18 members)

and to telescope the training into three hours, we did not achieve acceptable reliability. Our conclusion is that six hours is the minimum adequate training time, and that reliability is more easily achieved with small groups (two to six members) than large ones.

Tabulating observations

Tabulation of the form is a matter of employing simple addition and a few ratios or percentages. It can be easily and quickly done by the observer himself. The descriptive nature of the form provides the observer with a graphic picture of classroom activity that is readily apparent even without tabulation.

Testing the validity of the observation form

Sixteen eighth-grade teachers were randomly selected for a series of observations by a single observer. Those selected were chosen from two distinct groups of teachers: one group (New System teachers) that was included in the Educational Reform programs, and one group (Old System teachers) that was not yet affected by the Reform. In this way, we hoped not only to test our form's validity, but also to find differences in development between the two groups of teachers. The New System group included television classrooms and non-television classrooms, identical in every way except that teachers in the latter group did not use instructional television. The Old System classrooms had no television, of course, and the teachers had not been retrained. The differences in the three groups are illustrated below:

	Educational Reform Programs			
	One year's retraining	New Curricula	Guides and Workbooks	TV
New System television teachers (6)	YES	YES	YES	YES
New System non-television teachers (4)	YES	YES	YES	NO
Old System teachers (6)	NO*	NO	NO	NO

Each teacher was observed on three different occasions over a six-week period, and no teacher was advised of the day or time he would be observed.

Results of the study

A complete tabulation of the observations recorded in all 16 classrooms is appended to this report. What follows is a summary of the most significant figures (see Table 1):

Old System teachers dictated six times as much as New System teachers. Of the 25-minute observation period, Old System teachers dictated an average of over five minutes per class, while New System teachers spent less than one minute per class dictating. This means that the average Old System teacher spent over 20 per cent of the observed class time reading from a book while students copied verbatim what was read.

*Three of the Old System teachers had received a seven-week retraining course, but none had attended the full year's course.

TABLE ONE

Average numbers of certain behaviors observed in different kinds of classes

	Teacher dictation	Memory questions asked by teacher	Opinion questions asked by teacher	Thought questions asked by teacher	A-V aids, demonstrations, dramatizations by teacher	Opinions given by students	Questions asked by students (procedure, memory, thought)	Group work by students	Individual work by students	Teacher aid to individual students and supervision of student activities
New System with TV	0.6	10.0	6.6	0.8	2.9	2.1	2.7	2.7	3.3	3.3
New System without TV	0.7	7.2	5.3	1.0	1.1	1.4	2.8	0	5.2	2.0
New System with or without TV	0.7	8.6	5.9	0.9	2.0	1.8	2.8	1.4	4.3	2.7
Old System classrooms	5.3	7.2	2.9	0.1	0	0.2	1.6	0	7.1	3.0

New System teachers asked more than twice as many multiple-answer questions as Old System teachers. Old System teachers asked only three multiple-answer questions per observed class; New System television and non-television teachers asked seven and six per class, respectively. Even more important, Old System teachers averaged only one thought question for every 10 classes observed! This means that only once every two weeks would students in Old System classes be asked a question that required them to reason. New System teachers, on the other hand, averaged at least one thought question per class.

Several different types of learning aids were utilized in New System classes, while not one Old System teacher used any learning aid except the blackboard. The learning aids used by New System teachers included demonstrations, slides, charts, maps, pictures, diagrams, etc. Television was not counted among the learning aids.

Students volunteered their own opinions much more frequently in New System classes than in Old System classes. In Old System classes, student participation of this sort was so rare that it occurred in only one of every five classes observed, and in four of the six Old System classrooms, students never volunteered an opinion. On the other hand, students in New System classes ventured opinions at least once in every class, and in no New System classroom did students fail to give at least one opinion during the three observations.

Student work in groups was observed in several television classrooms. It did not occur in non-television or Old System classes.

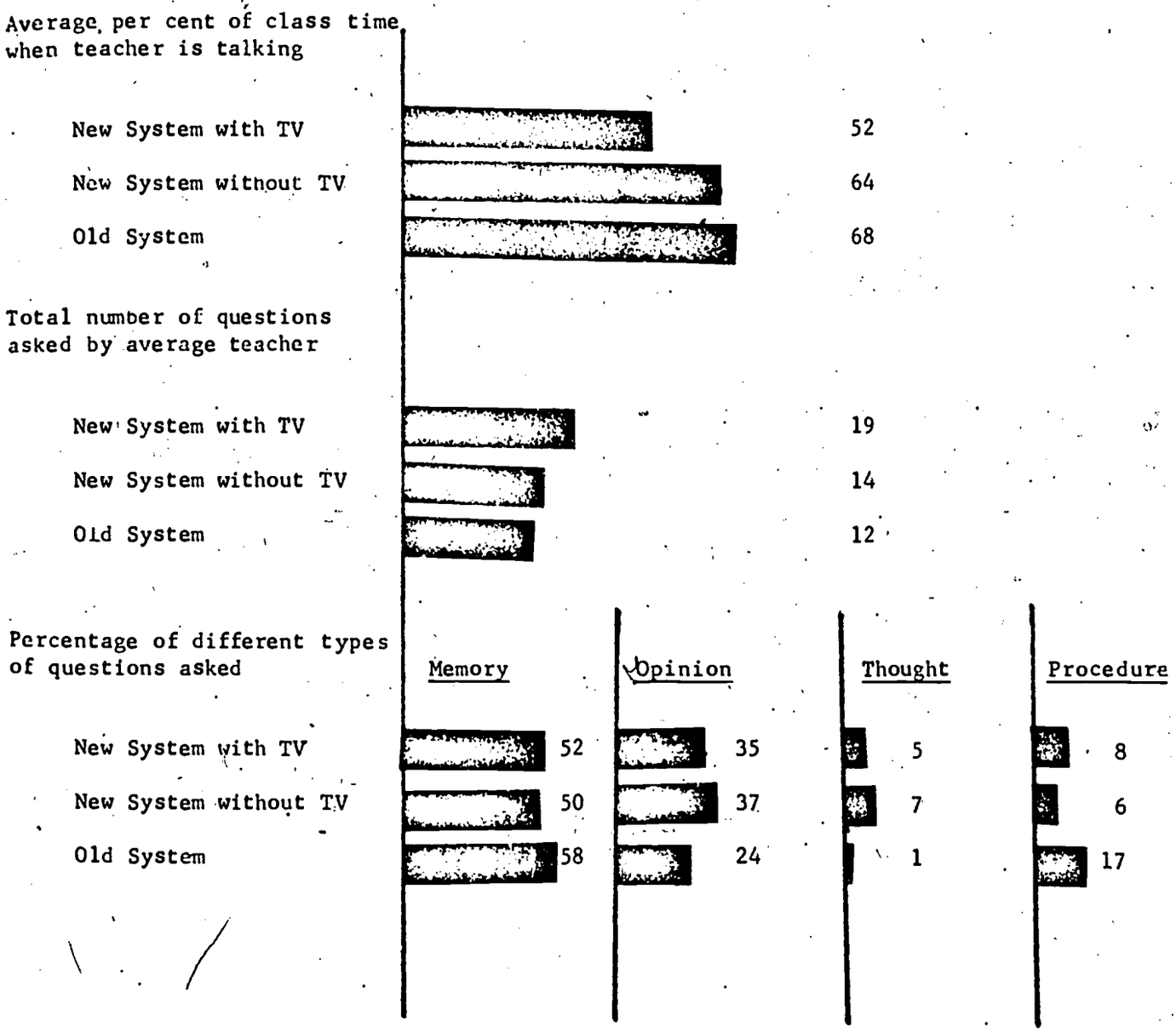
Group work was defined as the interchange of ideas among a small group (four to six members) of students for the purpose of arriving at conclusions, solving problems, writing reports, etc. It did not refer simply to placing students physically in groups.

Student individual work was observed almost twice as frequently in Old System and non-television classrooms as in television classes. However, this is accounted for by the fact that teachers with television devoted nearly the same amount of time to group work as they did to individual work. Only half the Old System teachers used individual work, but those that did relied heavily on it, using it between 25 and 100 per cent of the observed time in all their classes. They also demonstrated the tendency to interrupt the students frequently to lecture, with the result that some students would suspend their work to listen to the teacher while others would ignore the teacher and continue to work. The New System teachers interrupted in this way much less frequently. In all cases of individual work, the tasks involved were largely rote.

As is apparent, there was little difference between the television and non-television classrooms in the New System, but considerable difference between the methods of teachers in the New System and those in the Old. Therefore, it is reasonable to assume that the differences in observed classroom behavior are related to the retraining course, the new curricula, and the new teachers' guides, rather than to the presence of television in the classroom.

FIGURE ONE

Additional comparative data on classes of different kinds



Learning results from the classes observed

Achievement scores* of students in all 16 classrooms observed were obtained for social studies, mathematics, and natural science. While pupils in both the television and non-television New System classes gained noticeably more than students in Old System classes, we do not feel justified in generalizing from the results. (See Appendix 2.) The number of classes was small, we are not certain that pupils were assigned randomly, and there may be uncontrolled and even unknown variables operating to affect learning gains.

However, New System teaching methods seem to prove out, although we are not sure whether the achievement gains should be credited to the teaching, the new curricula, or to the new guides and workbooks. On the basis of our evidence, it is impossible to determine which factor is salient. A better experimental design will be necessary to judge that.

Comparing achievement gains for classes in the same group (e.g., New System television or non-television or Old System), no significant patterns of relationship between learning gains and teaching styles were apparent. Again, it must be remembered that we were working with a very small sample.

Results of the study and Beeby's typology

It will be recalled that Beeby's hypothesis is that the

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*From examinations based on the El Salvador eighth-grade curriculum, prepared by the Educational Testing Service, Princeton, New Jersey.

education and training of teachers is directly related to their level of development. Teachers in his First ("Dame School") Stage are poorly educated and little trained. When teachers have some training in their craft, they tend to move into Stage Two ("Formalism"), where they closely follow the official syllabus. When they are better educated and better trained, they move into Stage Three ("Transition"); and by Stage Four ("Meaning"), teachers are both well educated and highly trained.

All 16 Salvadoran teachers observed in this study would probably be classified in Beeby's second stage. We obtained the school records of all 16 teachers, and found no significant correlations between their levels of education and training, and their classroom performance as measured by our instrument -- as long as education and training were counted as years in school and years in teacher-training institutions. Indeed, some of the Old System teachers had received more schooling and more advanced training than many of the New System teachers who performed in a more modern pedagogical pattern.

The one significant difference in their background was the year of retraining included in the Educational Reform. All New System teachers in the sample had received this training, while the Old System teachers had not.

As stated earlier, the retraining course was both substantive and methodological. Teachers were instructed in the subject matters they would teach, and also in the newer methods they were expected to use. Thus, they had <u>both</u> education <u>and</u> training that the Old System teachers did not have.

Why should a single year make such a difference? The Old System teachers apparently were not taught newer methods of teaching in their teacher-training schools; nor were they taught, apparently, much about the new mathematics, the new science, or the Salvador-centered social studies. Further, they were taught in the "traditional" way, and teachers typically teach as they are taught.

We feel strongly that these results should not be interpreted as failing to confirm the importance of general education and teacher-training in the modernizing of teaching behavior. On the contrary, they should be seen as evidence that, if teachers are expected to use modern methods, they first must be shown those methods and be allowed to practice them.

Furthermore, it must be remembered that we were not observing the whole range of Beeby's four stages, but rather teachers within a single stage. In the near future, we plan to observe some teachers elsewhere who would probably be classified in the Third or Fourth Stages, to see how their performance compares with teachers observed in El Salvador. That will give us the opportunity to test Beeby's typology better.

Implications of the study for the Educational Reform

The Educational Reform is clearly succeeding in introducing some techniques of modern pedagogy into the classrooms of El Salvador. In Beeby's terms, the results demonstrate the movement of Salvadoran schools from the Stage of Formalism (Stage Two) toward the Stage of Transition (Stage Three).

However, the results also suggest that describing development in terms of four separate stages may not fully reflect the development process. The classrooms of El Salvador do not seem to be taking one giant step from Stage Two to Stage Three. While all 16 teachers observed are in Beeby's Second Stage, they are clearly at different levels within that stage. Development can certainly occur within any single stage, as well as from one stage to its successor. Progress seems to occur in tiny steps, and it is slow and uneven.

One example of this is that certain aspects of modern pedagogy -- student discussion, students' asking of thought questions, teacher aid to individual students -- extremely rarely or never occurred in the classes observed. Other aspects of modern teaching -- the use of learning aids, the asking of thought questions by the teacher -- were employed, but less frequently than one would have hoped.

In any case, New System teachers seem to be moving toward the non-rote, individualized, problem-solving learning that is the goal of the Educational Reform. And when all the small changes are totalled, the sum is impressive. By the same token, changes that are numerically small may, in fact, be greater ones than the numbers suggest. For example, it seems to us that, when compared to an Old System teacher who asks no thought questions, the New System teacher who asks even one such question per class has changed more significantly than the difference between "zero" and "one" suggests. Stimulating the adoption of a previously nonexistent behavior is probably much more difficult than increasing the employment of a behavior already in use.

While the various programs of the Educational Reform have functioned in concert to produce the changes occurring in El Salvador's classrooms, it would appear that the program of teacher retraining has been particularly effective. Were it not providing a model of desired classroom behavior, we believe that progress, as measured by our observation instrument, would be far slower and less evident than it is.

This belief is strengthened by the fact that half the Old System teachers in our sample had received far more general education and advanced teacher-training than all but two of the New System teachers, but none of the Old System teachers had received a full year's retraining.* That fact casts doubt on the notion that previous advanced training and education, coupled with minimal retraining, can be counted on to produce changes in classroom behavior. From our small sample, we cannot be certain of this, but the problem definitely merits further study and a reexamination of assumptions regarding the length of retraining required for teachers with advanced professional training.

However slowly and unevenly, changes are certainly occurring in Salvadoran schools. However slowly, and perhaps tentatively, teachers are certainly changing their classroom behavior. To insure that such change continues in the desired direction is the function of the school supervisor.

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*It will be recalled that three Old System teachers had received seven weeks' retraining.

Implications for future use of the observation form

The study conducted showed us that the observation form measured what we intended it to measure. It was easy to use and quickly tabulated. Above all, the study indicated the form's practical value to supervisors.

From the first, we felt that supervisors needed an instrument that would demonstrate the progress of individual teachers toward the adoption of modern teaching methods. We wanted to be able to pinpoint the specific areas where progress lagged.

The form seems to meet those requirements. The results made it possible both to assign each teacher a general level of development and also to note the precise areas in which each needed assistance to improve his performance.

We consider it very important that the form will orient supervisors to deal with very specific aspects of teaching behavior. The supervisor's task need no longer be the impossible one of "improving the quality of teaching." Rather, the form will help us set more limited and more easily attainable goals -- "increasing the number of thought questions", or "decreasing the amount of dictation". Improving the quality of teaching is still the end result.

Limitations of the observation form

While we are generally satisfied with the form as it stands, we recognize a number of important limitations. First, no affective behavior is included, meaning that such teacher behavior as praise,

encouragement, and criticism cannot be recorded. This type of behavior is certainly important, but we feel it is too difficult to measure, at least for the present.

Also absent from the form are some important quality distinctions. The form indicates, for example, whether individual or group work is engaged in, but not the type of work. There is an important difference between work that requires only copying and recall and that which demands thoughtful investigation and reasoning. We hope in future revisions (the current form has gone through four revisions) to correct this deficiency.

We also feel that the categories of question classification are by no means perfect. For example, the procedure question category currently refers to both procedural (where is the dictionary?) and rhetorical questions (we represent altitude with an "h", don't we?). We now feel that rhetorical questions should not be recorded, and we will not do so in the future.

The memory question category is clear-cut, but the difference between opinion and thought questions is not. Both have multiple, rather than single, answers, and it is not always easy to distinguish between the two. To make sharper distinctions, however, would require creating many more categories of questions (some authors on the subject identify as many as 26 different types of questions). For the present, simplicity seems preferable, although we would like in the future to devise more clear-cut categories.

Despite the limitations, the current form meets our basic needs. It is not a perfect instrument, but it will certainly help us identify and evaluate the changes occurring in the schools, so we may provide the kind of help that is most needed.

Appendix A

OBSERVATION SCORES FOR ALL TEACHERS -- AVERAGES OF THREE OBSERVATIONS

		TEACHER																			STUDENTS										
	Teacher Number	Exposition	Dictation	Explaining	Procedure Q	Memory Q - Individual	Memory Q - Group	Thought Q	Opinion Q	Uses blackboard	Demos. with equip.	Audio-visual materials	Directs group exercises	Works ind. with students	Suggests ind. projects	Checks ind. projects	Supervises stud. activity	Assigns homework	Assigns investigations	Checks homework	Silence or chaos	Procedure Q	Memory Q	Thought Q	Go to blackboard	Give opinions	Have discussion	Small group work	Individual work	Choral exercises	S - R Exercises	Dialog or dramatization
New System with TV	1	14.0	0.3	0.3	1.6	0	11.0	1.6	5.0	11.0	1.3	0.6	0	0	0	0	1.3	0.6	0	0	0	3.6	0.3	0	0.3	0.6	0	0	3.0	0	0	0
	2	9.0	0.3	0.3	0	5.0	8.6	0.3	0	6.0	0	1.3	0	1.0	0	0	6.6	0	0	0	0	6.0	0	0.3	2.0	0.3	0	8.0	13.8	0	0	0
	3	9.0	1.5	0.8	3.0	0	3.6	0.6	10.0	0.3	0	0	0	0.6	1.3	0	7.0	0	0	0	0	3.0	0	0	2.0	3.3	1.0	1.3	0	0	0	7.6
	4	14.0	0.6	0	1.3	4.0	2.6	0	10.0	2.0	0	5.3	0	0	0	0	0.6	0	0	0	1.6	1.3	0	0	0.3	6.0	0	0	1.0	0	0	0
	5	14.0	1.0	0	1.3	1.3	14.0	2.0	8.0	1.6	0.6	0.6	0	0	0	0	0.8	0	0	0	1.6	0	0	0.3	1.3	2.0	0	0	1.8	0	0	0
	6	15.0	0	0	2.3	1.0	9.0	0	7.0	0.3	0	0	0	0	0	0	1.6	0	0	2.0	0	1.3	0	0	0	0.6	0	7.0	0	0	0	0
New System No TV	7	17.0	1.0	0.3	1.0	2.0	5.6	1.3	6.6	5.0	2.6	0.3	0	0.3	0	0	1.5	0	0	0	0	3.3	0.6	0	3.6	0.3	0	0	8.6	0	0	0
	8	13.0	1.0	0	1.0	3.6	2.0	0	6.6	2.0	0	0.6	0	0	0	0	3.5	0.3	0	0	0.6	3.6	0.3	0	1.0	0.6	0	0	5.0	0	0	0.6
	9	17.0	0.3	0.3	0.6	1.0	3.0	0	4.0	0	0	0	0	0	0	0	0	0	0	0	3.0	0.6	0.3	0	3.3	4.0	0	0	0	0	0	0
	10	13.0	0.6	1.0	0.6	2.6	9.0	2.6	4.0	9.5	0	0.3	0	0	0	0	2.6	0	0	0	0.3	1.3	0.6	0.3	2.3	0.6	0	0	7.0	0	0	0
Old System	11	15.6	7.0	0.3	3.3	2.6	4.3	0	2.0	3.0	0	0	0	0	0	0	0	0	0	0	0	9.6	0.3	0	0	0	0	0	0	0	0	0
	12	11.0	1.0	0.3	4.0	1.3	11.0	0.3	8.0	6.0	0	0	0	3.0	0	0	4.5	0.3	0	0	0	1.0	0	0.3	4.0	0	0	0	16.0	0	0	0
	13	10.5	10.8	0	0	1.6	10.0	0	0.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0.3	0	0	0.6	0.7	0.6	0	0	0	0	0
	14	9.5	10.0	0	2.0	0	1.6	0	0.6	4.8	0	0	0	0	0	0	1.0	1.0	0	0	1.0	1.6	0	0	0	0.3	0	0	0	0	0	0
	15	10.5	0.7	0	3.3	0.3	6.6	0.3	4.0	6.5	0	0	0	2.3	0	0	3.5	0	0	0	3.3	2.6	0	0	5.0	0	0	0	14.0	0	0	0
	16	8.6	2.2	0	0.6	0.6	3.3	0	2.6	11.0	0	0	0	1.0	0	0	2.6	0.3	0	0	0	2.6	0	0	2.0	0	0	0	12.5	0	0	0

Appendix B

LEARNING SCORES ON OBSERVED CLASSROOMS

New System classrooms with television	Mathematics 1	Mathematics 2	Mathematics Gain	Natural Science 1	Natural Science 2	Natural Science Gain	Social Studies 1	Social Studies 2	Social Studies Gain
Class 1	17.9696	17.7876	.1820	26.2726	27.1211	.8485			
Class 2	14.2857	17.2856	2.9999	24.3999	26.1999	1.8000			
Class 3*	NOT	TESTED							
Class 4							25.6363	25.9090	.2727
Class 5	14.9444	19.5832	4.6388	26.7221	29.6110	2.8889			
Class 6							21.4570	27.1713	5.7143
New System Classrooms without television									
Class 7	14.0833	15.0000	.9167	22.9721	25.4165	2.4444			
Class 8*	NOT	TESTED							
Class 9							23.5216	28.8911	5.3695
Class 10	15.3695	17.1520	1.7825	21.9346	26.4564	4.5218			
Old System Classrooms									
Class 11				21.4870	21.8460	.3590			
Class 12	13.2308	14.3846	1.1538						
Class 13							18.9742	20.5383	1.5641
Class 14				18.4198	22.0598	3.6400			
Class 15	12.5400	13.6600	1.1200						
Class 16*	NOT	TESTED							

*These classes were not tested because their teachers were observed in Language Arts (Spanish), and no standardized test based on the new curriculum in Language Arts was available.

Teacher No. 2 Subject Science