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GRADUATE COLLEGE

THE EFFECTS OF DIFFERENT CLASSROOM OBSERVATION CONDITIONS ON QUESTIONING PATTERNS OF TEACHERS

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MORRIS LYNN LAMB

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THE EFFECTS OF DIFFERENT CLASSROOM OBSERVATION CONDITIONS ON QUESTIONING PATTERNS OF TEACHERS

APPROVED BY

Gene D. Shepherd

Donald Reynolds

Mary Clare Petty

Chairman D. Stuart

DISSERTATION COMMITTEE

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THE EFFECTS OF DIFFERENT CLASSROOM OBSERVATION CONDITIONS ON QUESTIONING PATTERNS OF TEACHERS

CHAPTER I

THE PROBLEM: ITS BACKGROUND AND DEVELOPMENT

Introduction

Much attention has been focused on observations for gathering research data. The following position is taken by Kerlinger as he states:

> Many educational research problems, for example, strongly demand behavior observations: children in classrooms interacting with each other and with teachers, administrators and teachers discussing school problems in staff meetings, boards of education working toward policy decisions.[1]

Borg suggested that much of the behavior that interests us in education, such as, the role of the principal in the school situation, teacher-pupil interaction within the classroom, and teacher effectiveness is of a highly complex nature. The observational approach, which permits the direct study of complex behavior, seems an obvious choice for

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[1]Fred N. Kerlinger, Foundations of Behavioral Research (New York: Holt, Rinehart and Winston, Inc., 1964), p. 522.

investigations concerned with collecting data used to develop better approaches to solving school problems.[1]

Medley and Metzel focus the use of observations in educational research directly on the classroom. They stated that there is no more obvious approach to research on teaching than direct observation of the behavior of teachers while they teach and of pupils while they learn.[3]

Harris and Bessent recognized and supported the work done by researchers in making classroom observations. They pointed out:

> Classroom observation for research on instructional practice of child behavior is currently being widely used. It is important to recognize the contributions of a number of educational researchers in providing frames of reference for practitioners to use as they study classroom events.[3]

Background for the Study

One of the major problems encountered in studies involving classroom observation has been the effect that the observer's presence has on classroom behavior. Harris

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[1]Walter R. Borg, Educational Research: An Introduction (New York: David McKay Company, Inc., 1963), p. 237.

[2]D. M. Medley and H. E. Mitzel, "Measuring Classroom Behavior by Systematic Observation," in Handbook of Research on Teaching, ed. by N. L. Gage (New York: Rand-McNally, 1963), p. 247.

[3]Ben M. Harris and Wailand Bessent, In-Service Education (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1969), p. 132.

and Bessent state that "the presence of observers in a classroom creates an unnatural teaching-learning situation."[1]

Rosenthal and Jacobson investigated the problem. They made the following observation:

> Not only does the experimenter influence his subjects to respond in the expected manner, but his subjects may well evoke just that unintended behavior that will lead them to respond increasingly as prophesied.[2]

Borg outlined the problem further by stating that "in observations of classroom behavior, a change in the behavior of both the teacher and class members usually occurs when an observer enters the room."[3] Ryans suggested that an attempt should be made to control the influence of the observer on the classroom.[4]

Medley and Metzel continued along this line of reasoning when they stated:

> One criticism sometimes made of measurements based on direct observations is that they lack validity because the behaviors are not representative of normal classroom behavior. Teachers and pupils, it is argued, behave differently when a visitor is present than when no visitor is present.[5]

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[1] Ibid., p. 152.

[2] Robert Rosenthal and Lenore Jacobson, Pygmalion in the Classroom (New York: Holt, Rinehart and Winston, Inc., 1968), p. 30.

[3] Borg, op. cit., p. 238.

[4] David G. Ryans, Characteristics of Teachers (Washington, D. C.: American Council on Education, 1960), p. 42.

[5] Medley and Metzel, op. cit., p. 306.

The Medley and Metzel report reviewed the more significant classroom observational studies made up to the time of its publication in 1963.

Kerlinger emphasized that the observer can affect the objects of observation simply by being part of the observational situation.[1] The point is well made of the apprehension of researchers about the effect of the observer on the normal classroom conditions during an observation.

The problems caused by the observer's presence in the classroom are not insurmountable. Medley and Metzel stated that to know how teachers behave while they are under observation seems better than to know nothing at all about how teachers and pupils behave.[2]

Harris and Bessent continued with this line of thought. They stated that regardless of the changes that observers produce in a classroom, the events that do transpire are worthy of study.[3]

Attention needed to be directed to reasons for classroom observations other than for collecting research data. Harris and Bessent stated:

> Systematic classroom observation by professional staff members may serve different purposes. At least three may be mentioned because of their frequent use. Administrative decision-making One purpose has to do

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[1]Kerlinger, op. cit., p. 505.

[2]Medley and Metzel, op. cit., p. 248.

[3]Harris and Bessent, op. cit., p. 152.

> with judging individual teacher performance. This usually involves the use of data for some kind of administrative decision-making--merit pay determinations, reprimands, promotions, contract renewals, and so on. Program evaluation and planning A second purpose has to do with evaluating instructional programs. Here the focus is on the program rather than on the individual teacher. Analyzing the use of materials, equipment, and facilities is not unusual. Analyzing the scope and sequence of content in a given field is another example of observation for program evaluation. Data-gathering for program evaluation is restricted by the kinds of questions posed or the intended development of the in-service program which might follow. Similarly, certain selected teaching practices might be the focus of observation from which data would be used to guide in-service program planning. Direct in-service experience Classroom observations can be used to provide observers with information with which to help both the observer and the observed staff members develop new insights. For example, a new teacher can learn from those who are more experienced. A staff group can engage in a "round robin" of observations among its members to share ideas and problems. Several staff members can profit from observing and analyzing one member who has developed a new technique or approach. Any of these activities could improve instructional practice.[1]

The apprehension about the observer's presence effecting the classroom behavior during an observation has been oriented to his presence when collecting data for a research project. In considering the three above mentioned reasons for classroom observations, a person should consider the probable differences in the teacher's behavior caused by the observer's presence when collecting data for purposes other than research projects.

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[1] Ibid., p. 131-132.

Purpose of the Study

The purpose of this study was to develop a method of investigating the effects of different observation conditions on the questioning patterns of teachers. If this research problem can be adequately answered, the procedures needed for classroom observation for research, administrative decision-making, program evaluation and planning, and in-service experiences may be described, and a methodology for direct classroom observations for different purposes may be established.

Selecting a Teacher Behavior to be Observed

In determining what effects different observers have on a teacher's behavior when observing for different purposes, it is necessary to find a teacher behavior that is generalizable to the total behavior of the teacher. The verbal behavior of teachers may meet this requirement. Withall in his research accepted the assumption that the verbal behavior of the teacher was descriptive of the teacher's total behavior.[1] Bellack and others suggested that observation of what goes on in elementary and secondary schools reveals that classroom activities are carried on in large part by means of verbal interaction between students

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[1]John Withall, "The Development of a Technique for the Measurement of Social-Emotional Climate in Classrooms," Journal of Experimental Education, XVII (March, 1949), 1.

and teachers.[1] Of the classrooms studied, Bellack and others found that the teacher was talking from seventy to seventy-five percent of the time.[2]

To more specifically approach the problem, the questioning patterns of teachers have been selected as the teacher behavior to be observed. Harris and Bessent stated that "one of the most revealing indicators of the learning that is going on in a classroom is the pattern of questions that are being asked."[3]

Selection of an Instrument

An instrument was needed to allow evaluation of the teacher behavior to be observed. The instrument also needed to have the added advantage of making the data assessable after the observation was made. This would reduce a number of problems inherent in classroom observations. In doing his research study Ryans found the following:

> Under certain conditions, bias resulting from difficulties of control in direct observation may be reduced through the recording of behavior-in-process and its preservation for later analysis and assessment. Thus, through the use of motion pictures, sound tracks, tape recordings, and the like, it may be possible to circumvent one set of difficulties encountered in the

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[1]Arno A. Bellack and others, The Language of the Classroom (New York: Teachers College Press, Teachers College, Columbia University, 1966), p. 1.

[2]Ibid., p. 41.

[3]Harris and Bessent, op. cit., p. 154.

> direct observation and immediate assessment of behavior--namely, the problem of adequate analysis and assessment of behavior which is momentary or transitory.[1]

A tool amenable to the requirements of the study was the Teacher Question Inventory developed by Harris and McIntyre.[2] It was designed to allow an observer to record the questioning patterns of teachers during classroom instruction. Harris and Bessent state that "the Teacher Question Inventory is an observation guide designed specifically to gather evidence related to questioning in the teacher-learning process."[3]

Harris and Bessent identified eight categories on the Teacher Question Inventory, six cognitive areas and two affective areas. The description of each area is entered below:

1. Recognition The student is presented with cues that require only the recognition of the correct option from two or more choices.

2. Recall The student is asked to recall one or more simple facts.

3. Demonstration of Skills The question requires the application of knowledge in the performance of a skill, as in arithmetic, reading, or foreign language.

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[1]Ryans, op. cit., p. 42.

[2]Harris and Bessent, op. cit., p. 155.

[3]Ibid., p. 154.

4. Comprehension The student is required to produce evidence that he understands simple relations among facts.

5. Analysis The student is asked to identify the relationships between elements in a situation or to explain a complex phenomenon.

6. Synthesis The question calls upon the student to combine or reorganize specifics so as to develop a new structure or generalization.

7. Opinion The question requires a response involving expressions of feeling or personal point of view on comparatively simple matters other than facts.

8. Attitude or Value The student is asked for a response involving deepseated attitudes or values, and the teacher asks him to defend his position.[1]

The Teacher Question Inventory met the needs of this research project for collecting data.

Statement of Problem

This study investigated the effects of three different observers' presence in the classroom on the questioning patterns of second year probationary teachers as described by the Teacher Question Inventory when the observers were observing for the purposes of administrative decision-making, instructional evaluation, and in-service education.

Hypotheses

The following hypotheses were formulated from the statement of problem to test the effects of the three

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[1] Ibid., p. 154-156.

observers presence in the classroom on the questioning patterns of teachers:

Ho_1 The mean number of questions asked in each of the three observation conditions do not differ significantly across the eight categories of questions.

Ho_2 The mean number of questions asked in each of the eight categories do not differ significantly across the three observation conditions.

Ho_3 There are no significant differences among the mean number of types of questions asked under each of the three observation conditions, i.e., that certain types of questions will not be asked more frequently than others as a result of the observation conditions.

A Two Way Analysis of Variance[1] was used to test the hypotheses Ho_1, Ho_2, and Ho_3. Student's "t" test[2] was used to compare the mean number of questions asked in each category level across the three observation conditions.

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[1]E. F. Lindquist, Design and Analysis of Experiments in Psychology and Education (Boston: Houghton Mifflin Company, 1953), p. 123.

[2]George A. Ferguson, Statistical Analysis in Psychology and Education (New York: McGraw-Hill Book Company, 1966), pp. 169-170.

For an example of Category One: the mean number of questions asked in Category One under Observation Condition 1, was compared with the mean number of questions asked in Category One under Observation Condition II; the mean number of questions asked in Category One under Observation Condition I, was compared with the mean number of questions asked in Category One under Observation Condition III; the mean number of questions asked in Category One under Observation Condition II, was compared with the mean number of questions asked in Category One under Observation Condition III.

The general null hypothesis for each of the resultant twenty-four comparisons is as follows:

Ho_4 There are no significant differences between the mean number of questions asked in each category level across the three observation conditions.

Teacher Population

The teacher population was made up of teachers who were in their second year of teaching in the Oklahoma City Public Schools. The following characteristics describe each teacher who volunteered to participate in the study.

1. Each teacher was a female.
2. Each teacher was in her second year of teaching in the Oklahoma City Public Schools.

3. Each teacher was considered to be a probationary teacher by the Oklahoma City Public Schools.
4. Each teacher was teaching in a self-contained classroom in grades one through six. Teachers in special education, music, and art were not selected.
5. Each teacher had obtained at least a B.A. or B.S. degree but had not obtained a masters degree or above. Graduate credit was acceptable.

The characteristics of the teachers volunteering to participate in the research project were restricted to the above mentioned conditions in order to select a sample from the population with the greatest number of things in common. This was done to attempt to control the bias which may occur in the sample due to differences among teachers caused by: sex, professional training, experience, types of classes being taught, and probationary teachers.

Procedures

The number of teachers meeting the above mentioned characteristics were randomly divided into three different groups.[1] Thirty teachers from each group were observed.

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[1]N. M. Downie and R. W. Heath, Basic Statistical Methods (New York: Harper & Row, Publishers, 1965), pp. 121 and 316-317.

One group was observed by the principals, a second group was observed by the researcher, and a third group was observed by a student enrolled in her student-teaching semester.

The principal of each teacher involved in the study was contacted by the researcher for the purpose of explaining the study.

Observation of Group One for Administrative Decision-Making

The observation of Group One was made by the principal of each teacher. The purpose for the observation was to make administrative decisions for contract renewal. The teachers in their second year of teaching in the Oklahoma City Public Schools are observed by the principal for administrative reasons four times each year.

The principals making an observation followed the suggestions listed below:

1. The principal made an observation of each teacher in his building that was selected for the study.
2. The principal made the observation for administrative decision-making concerning contract renewal.
3. The principal recorded thirty minutes of the verbal behavior of the teacher during the observation.

4. The principal informed each teacher at least one day before the observation that she would be observed.

Observation of Group Two for Program Evaluation

The observation of Group Two was made by the researcher. The purpose for the observation was to observe the instructional program by studying the questioning patterns that occurred in the classroom while an observation was being made.

The researcher followed the suggestions listed below:

1. The researcher made an observation of the teachers in group two.
2. The researcher made the observation for evaluation of the program by studying the questioning patterns of the teacher.
3. The researcher recorded thirty minutes of the verbal behavior of the teacher during the observation.
4. The researcher informed each teacher at least one day before the observation that she would be observed.

Observation of Group Three for In-Service Experiences

The observation of Group Three was made by a student in her student-teaching semester of college. The purpose for the observation was to give a beginning teacher an opportunity for an in-service experience by watching an experienced teacher instruct during a class period. The researcher contacted each teacher in group three to make arrangements for the student in her student-teaching semester to make an observation.

The following conditions were followed in observing group three:

1. A student-teacher made an observation of the teachers in Group Three.
2. The student-teacher made the observation for an in-service experience.
3. The student-teacher recorded thirty minutes of the verbal behavior of the teacher during the observation.
4. The researcher informed the teacher at least one day before the observation that the student-teacher would be observing.

Content Being Taught During the Observation

For each observation it was only asked that the teacher be in verbal interaction with her class. Teachers were asked not to be using instructional materials which

reduce teacher-pupil interaction. Examples may be the television, film strips, 8 or 16 mm. motion pictures, etc. Instructional materials that enhance the lesson without reducing verbal interaction were permissible. Examples are overhead projectors, opaque projectors, etc.

Simon and Boyer reported that most observation instruments for describing classroom behavior "were content free, that is, they could be used with any subject matter or grade level."[1] Observation instruments were considered to be content free unless they specifically identified content as an area to be investigated. It was assumed that the questioning patterns of teachers were more of a process or a teacher technique, and were not significantly related to content.

Training in Use of the Teacher Question Inventory

To train himself in the use of the Teacher Question Inventory the researcher collected five tapes from elementary classrooms. After collecting the five tapes he tabulated each tape using the Teacher Question Inventory. He waited two days and made another tabulation of each of the five tapes. He did this to see if the questions identified

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[1]Anita Simon and E. Gil Boyer, eds., Mirrors for Behavior: An Anthology of Classroom Observation Instruments (Philadelphia, Penn.: Research for Better Schools, Inc., 1967), pp. 1-16.

in a particular category for the first tabulation were identified in that same category for the second tabulation.

The following formula was used to establish an estimate of intra-judge reliability.[1]

$$\left(\frac{\frac{nca}{nc}}{8} \right) = \overline{X}_p$$

when $\overline{X}_p$ = the mean percent of agreement for the eight categories for each tape

nca = the number of questions in agreement in each category for both tabulations

nc = the largest number of questions asked in each category level for both tabulations

8 = the total number of categories on the Teacher Question Inventory

The estimate of intra-judge reliability is essentially a mean percent of agreement across all categories.

Delimitations

The study was limited to the elementary grades in the Oklahoma City Public Schools.

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[1]This formula was developed with Dr. Donald Reynolds, Assistant Professor of Education, University of Oklahoma. A similar method was described by Miller to be used with the "Collaboration Scale for the Analysis of Teaching Responsive-Dimension," cited in Anita Simon and E. Gil Boyer, eds., Mirrors for Behavior: An Anthology of Classroom Observation Instruments (Philadelphia, Penn.: Research for Better Schools, Inc., 1967), p. 101.

The study involved only teachers in the first through the sixth grades in self-contained classrooms. Special area teachers in music, art, and special education were not observed.

The study involved only teachers that were in their second year of teaching in the Oklahoma City Public Schools.

The study involved one observation of each teacher who volunteered to participate in the study.

Assumptions

That the Teacher Question Inventory is a valid instrument to use to establish the questioning patterns of teachers.

That a thirty minute recording of the verbal behavior of teachers will establish a consistent patterning of questions.

That the researcher was qualified to use the Teacher Question Inventory as an instrument for establishing levels of questions asked by teachers during an observation.

That differences in socio-economic levels, ethnic origins, and pupil abilities may be a part of any class observed, but would be randomly distributed across classrooms and thereby effect each group to the same extent.

That questioning patterns of teachers are not significantly related to content.

CHAPTER II

REVIEW OF LITERATURE

The review of literature is divided into the three following areas:

1. Literature related to a historical development of: the purposes of classroom observations; the individuals responsible for making the observations; and the instruments constructed to service different purposes of the individuals conducting the observations.
2. Literature related to the effect of the observer's presence on the classroom behavior during an observation.
3. A review of three recent instruments developed for use in classroom observations.

Historical Development

Classroom observations have been present in American schools since the formation of schools by law in 1642.[1] The first classroom observations were specifically for the

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[1]Harold Spears, Improving the Supervision of Instruction (New York: Prentice-Hall, Inc., 1953), pp. 37-38.

purpose of control and inspection. The individuals observing in the classrooms were the leading citizens of the community. The minister was usually included in the group as he was supposed to be one of the more informed members of the community.[1]

Classroom observations were considered to be an important part of the school's total program. Inspectional control of the schools by laymen through classroom observations continued until the Civil War.[2]

With the growth of towns and cities the school population enlarged, and increased the number of teachers in the schools. The responsibilities assumed by the laymen were transferred to the person appointed as head teacher.[3] The shifting of administrative responsibility to the head teacher laid the foundation for classroom observations to be made by the individual filling this position.

With the establishment of the administrative positions of principal and superintendent in the 1800's the responsibility for classroom observations again shifted. The purpose for the classroom observations was handed down

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[1]A. S. Barr and William H. Burton, Supervision (New York: Appleton-Century Company, Incorporated, 1938), p. 3.

[2]Spears, op. cit., pp. 39-40.

[3]Barr and Burton, op. cit., pp. 3-4.

from the lay predecessors, and inspection and control continued as the major purpose for observations.[1]

In the earlier part of the 20th Century the responsibility for classroom observations began to again shift to a new position. Staff positions in schools began to include supervisors.[2] With the emergence of the supervisory position, the purpose for classroom observations began to be expanded from control and inspection. Supervisors constructed instruments to aid them in describing the classroom behavior of students and teachers.[3]

In 1914 Horn proposed that "a classroom observer use a seating chart and mark a circle to represent a child's recitation or request for recitation, and use a square to represent that a child had responded by doing something."[4] In 1928 Puckett used Horn's idea and developed an instrument to record fourteen specific responses of the students.[5]

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[1]Fred C. Ayer and A. S. Barr, The Organization of Supervision (New York: Appleton and Company, 1928), p. 9.

[2]Jane Franseth, Supervision as Leadership (Evanston, Illinois: Row, Peterson and Company, 1961), p. 19.

[3]Hubert Wilbur Nutt, Current Problems in the Supervision of Instruction (New York: Johnson Publishing Company, 1928), pp. 517-531.

[4]E. Horn, "Distribution of Opportunity for Participation Among the Various Pupils in Classroom Recitations," Teachers College Contr. Education, LXVII (1963).

[5]R. C. Puckett, "Making Supervision Objective," School Review, XXXVI (1928), 209-212.

The student responses recorded were items such as: pupil raised hand; pupil was called on by teacher; pupil asked a question; pupil spoke without being addressed by teacher. The emphasis of both instruments was on describing pupil participation during class discussion.

The National Education Association cited an instrument in a Research Bulletin in 1929 that was used to describe the inattention and attention of pupils. They stated that "a quiet observer with the aid of a watch and a ruled pad, could make a record of a child's concentration."[1]

Although some attention was focused on the pupil during the early part of the 20th Century, the major purpose for observations was to observe and to describe the teacher's behavior. The classroom visit became so mechanical that "an almost uniform formula was developed for the supervisor to follow in classroom visitations."[2] The structure had become so pronounced that in 1920 Wagner published an article to teachers in the Educational Review describing the proper "etiquette" to follow while being observed by the principal or supervisor.[3]

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[1]National Education Association, The Principal as a Supervisor, Research Bulletin, 7:5 (November, 1929), pp. 311-312, cited by Spears, op. cit., pp. 68-69.

[2]Spears, op. cit., p. 66.

[3]Charles A. Wagner, "Supervision of Instruction," Educational Review, LIX (February, 1920), 140-141.

By the 1920's so much emphasis had been placed on the use of rating scales to evaluate the efficiency of teachers that the Department of Classroom Teachers of the National Education Association "accepted rating scales as standard equipment." They issued an extensive report on the subject in 1925.[1] A classroom management scale reported in 1920 by Collings required the observer to assign values on scales that identified jobs to be performed such as: window sashes are lowered from the top at least six inches; window shades are adjusted so as not to obstruct fresh air inlets; blackboards are erased at the close of each period; waste paper is deposited in the waste paper basket; and pupils sit erect with feet on the floor.[2]

Nutt reported that an observer should know the teacher's purposes and her plan for accomplishing them. He stated that an observer should be required to use an instrument called an "Evaluation Observation Outline."[3] The following tasks were identified on the Evaluation Observation Outline for the observer to follow while making an observation: study the subject-matter of the lesson to be observed;

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[1]Spears, op. cit., p. 72.

[2]Ellsworth Collings, School Supervision in Theory and Practice (New York: Thomas Y. Crowell Company, 1927), p. 281.

[3]Hubert Wilbur Nutt, The Supervision of Instruction (New York: Houghton Mifflin Company, 1920), pp. 153-155.

take notes on the recitation; have a copy of the lesson that was to be observed; rank the performance of the teacher as either superior, excellent, good, fair, or poor; and hand the written notes of the whole observation to the teacher before leaving.

Wagner cited an instrument that "any school district" could use.[1] The observer checked points during his observation concerning: attitudes of teachers, responses of pupils, conditions for working, and former suggestions used. A conference with the teacher following the observation was required.

An instrument constructed by Anderson charged the observer with the responsibility of: studying the teacher's physical equipment; studying the teacher's professional equipment; studying the teacher's personal equipment; and studying the teacher's social equipment. He suggested that an observer should focus his attention on "observable evidence" to be discussed with the teacher.[2]

In the late 1930's and early 1940's, research was recognized as a new purpose for making classroom observations. The individuals responsible for research constructed

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[1]Charles A. Wagner, Common Sense in School Supervision (Milwaukee, Wis.: The Bruce Publishing Company, 1921), pp. 81-82.

[2]C. J. Anderson, A. S. Barr, and Maybell G. Bush, Visiting the Teacher at Work (New York: Appleton and Company, 1925), pp. 8-9.

instruments to aid them in describing teacher and pupil behavior.[1]

In 1934 Moreno devised instruments for studying classroom behavior through sociometric techniques.[2] "The sociometric 'test' is a technique for eliciting responses from members of a defined social group about each other. These responses usually have a direction such as like, neutral, or dislike; i.e., they are essentially ratings."[3]

In 1937 Anderson developed an instrument to be used during classroom observations to describe the effect of the teacher's dominative and integrative behavior on the pupil's behavior. Anderson defines dominative behavior as "the use of force, threats, shame, commands, blame, and attacks on the personal status of an individual." He defines integrative behavior as "being consistent with the scientific point of view. It designates behavior that is flexible, growing, learning."[4] Observations of teacher's behavior

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[1]Fred C. Ayer, Fundamentals of Instructional Supervision (New York: Harper and Brothers Publishers, 1954), pp. 433-436.

[2]H. H. Reemers, "Rating Methods in Research on Teaching," in Handbook of Research on Teaching, ed. by N. L. Gage (Chicago: Rand-McNally and Co., 1963), p. 345.

[3]Ibid., p. 343.

[4]Harold H. Anderson, "The Measurement of Domination and of Socially Integrative Behavior in Teachers' Contacts with Children," Child Development, X (1939), 73-89, reprinted in Edmund J. Amidon and John B. Hough (eds.), Interaction Analysis: Theory, Research, and Application (Reading, Mass.: Addison-Wesley Pub. Co., 1967), pp. 4-23.

constituted the basis on which each category of the instrument was developed and defined. There were twenty-four categories. Categories 1 to 8 record the dominative contacts of the teacher. Examples are: direct refusal, disapproval, blame, warnings, threats, or conditional promises. Categories 15 to 23 record the teacher's integrative contacts. Examples are: approval, accepts differences, extends invitation to activity. Categories 9 and 10 are regarded as ambiguous hybrids, not clearly classifiable as domination or integration. They are: lecture method, and question-lecture method.[1]

In 1943 Urban constructed an instrument for the purpose of observing and recording the bad health habits of pupils during an observation.[2] The instrument had the following seven categories in which to record the data: (1) puts finger in mouth, gnaws knuckles, puts side of hand in mouth; (2) puts other objects in mouth; (3) bites fingernails; (4) inserts finger in nostril; (5) rubs eyes with fingers; (6) coughs without using handkerchief; and (7) sneezes without using handkerchief. Two different curriculum programs were offered to two groups of pupils. One group of students was given a course on good health habits,

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[1] Ibid., pp. 10-11.

[2] John Urban, Behavior Changes Resulting from a Study of Communicable Diseases (New York: Bur. of Publs., Teachers College, Columbia University, 1943).

and another group was not. When the two groups were observed significant differences in total scores were found in favor of students offered the course in good health habits.[1]

In 1950 Bales constructed an instrument to observe and to describe small group interaction. The instrument to be used in observations had the following twelve categories: (1) shows solidarity, (2) shows tension release, (3) agrees, (4) gives suggestion, (5) gives opinion, (6) gives orientation, (7) asks for orientation, (8) asks for opinion, (9) asks for suggestions, (10) disagrees, (11) shows tension, and (12) shows antagonism.[2] Categories 1-3 and 10-12 are identified as measuring the positive and negative social-emotional areas. Categories 4-9 are identified as measuring the task areas. Checks are made in the appropriate categories to describe the behavior observed.

Until the 20th Century, observations had been made by laymen and administrators for the purpose of inspection and control. In the early part of the 20th Century supervisors used observations for inspection and control; but they also constructed instruments and made observations to describe classroom beahvior.[3]

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[1] Ibid.

[2] Robert F. Bales, Interaction Process Analysis (Reading, Mass.: Addison-Wesley Press, Inc., 1950), p. 9.

[3] Franseth, op. cit., pp. 19-20.

The administrator has continued to use observations for control and inspection. A report submitted in 1957 by Hicks and Jameson summarized the results of a questionnaire that reflected the purpose of administrative observation. Hicks and Jameson received a questionnaire from seventy college and university professors of educational administration from across the United States. The professors were asked to report what they considered to be the most current practices used by administrators in appraising teacher competencies.[1] The practice of using rating scales and check lists, and the use of written reports following classroom visitations were cited by the professors as identifying current administrative practices.

In 1966 Sach reinforced the administrative purpose of classroom observations in his book on educational administration. He stated that possibly the best way to evaluate the effectiveness of a teacher is to observe him teaching.[2] Sach also suggested a new purpose for classroom observations. He stated that an administrator should have an opportunity to evaluate a teacher's potential for success before hiring him by observing him teach.[3]

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[1]William V. Hicks and Marshall C. Jameson, The Elementary School Principal at Work (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1957), pp. 220-223.

[2]Benjamin M. Sachs, Educational Administration: A Behavioral Approach (New York: Houghton Mifflin Company, 1966), pp. 296-297.

[3]Ibid.

A research study published in 1968 by the Department of Elementary School Principals of the National Education Association reported that "for administrative purposes most rating forms are today used primarily to determine whether or not a teacher should be reassigned, given tenure in the school system, or released from employment."[1] Of the principals sampled 75.9 percent said that the ratings were made annually.

During the 1950's and 1960's, writers of college texts in the fields of guidance, in-service education, and supervision were entering chapters concerning classroom observations in their texts. These writers also reported instruments constructed to meet the needs of personnel in these various fields.

One of the new positions using classroom observations was guidance personnel. In 1965 observations had been established as an integral part of guidance programs. Peters, Shertzer, and Van Hoose devoted a complete chapter to this topic in their guidance textbook for college classes.[2] The instruments used placed the emphasis on

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[1]Department of Elementary School Principals, The Elementary School Principalship in 1968 Published by the Department of Elementary School Principals, National Education Association, Washington, D.C.

[2]Herman J. Peters, Bruce Shertzer, and William H. Van Hoose, Guidance in Elementary Schools (Chicago: Rand McNally and Company, 1965), pp. 87-101.

studying the child's behavior while in the classroom. Peters, Shertzer, and Van Hoose cited the following purposes for making classroom observation in guidance programs: to identify strengths and behavior in need of improvement; to identify educational progress or personality fulfillment; to learn about the study habits of pupils; to observe pupils fears and anxieties; and to become aware of pupils aptitudes, abilities, and conceptual formation. The instruments cited to gather data concerning the purposes were: diary description, specimen description, time sampling, instruments, event-sampling instruments, trait-rating instruments, and field unit analysis instruments.

In 1963 Harris wrote a chapter about observations in his book on supervision.[1] He reported that observing classroom teaching is as much a part of supervision as any activity. He reviewed the following seven instruments to be used during classroom observations for supervisory purposes: (1) a ten-category guide, (2) an elaborate guide, (3) an observation checklist, (4) pupil-response analyzer, (5) a response sociogram, (6) an instrument for tabulating questions by types, and (7) the teaching functions analysis.[2]

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[1]Ben M. Harris, Supervisory Behavior in Education (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1963), pp. 154-185.

[2]Harris, op. cit., pp. 159-168.

In 1969 Harris and Bessent wrote a book on in-service education. One chapter was written about classroom observations and instruments used during the observations. They divided instruments for observing and recording into the following four groups: (1) free response instruments, (2) tabulation instruments, (3) checklist instruments, and (4) rating instruments.[1] Harris and Bessent reported that administrators, supervisors, teachers, school nurses, counselors, social workers, psychologists and others used classroom observations in their work.

A number of recent authors of educational research wrote a chapter or more in their books about classroom observations, such as, Borg, 1963;[2] Kerlinger, 1965;[3] and Fox, 1969.[4] Information about methods and procedures to follow when planning an observation is usually entered. Various types of instruments are suggested to obtain data from the observations.

Complete books have been written about research projects. Certain studies report using classroom observations as only one aspect of their research project,

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[1]Harris and Bessent, op. cit., pp. 131-162.

[2]Borg, op. cit., pp. 237-262.

[3]Kerlinger, op. cit., pp. 503-524.

[4]David J. Fox, The Research Process in Education (New York: Holt, Rinehart and Winston, Inc., 1969), pp. 492-523.

such as, Ryans in 1960.[1] Ryans developed an instrument to use in his research project called a Classroom Observation Record. It was made up of twenty-four behaviors to assess. The first four were pupil behavior. Terms such as "apathetic-alert" and "uncertain-confident" were used. The observer had to rate the behavior on a seven point scale or use an "N" as a neutral mark. The last twenty behaviors to assess were teacher behaviors. Terms such as "partial-fair" and "apathetic-alert" were used to describe the teacher's behavior.

Certain books report research projects totally based on classroom observations, such as, Bellack and others published in 1966.[2] The instrument Bellack used to collect data for the project had three different categories. He described them as (1) pedagogical moves, (2) teaching cycles, and (3) categories of meaning. All three levels focused attention on the verbal exchange between teacher and pupil while they were being observed.

Books have been written which reviewed instruments used in classroom observations, such as, the book by Simon and Boyer published in 1968.[3] They reviewed twenty-six instruments developed for the purpose of

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[1]Ryans, op. cit., pp. 1-416.

[2]Bellack and others, op. cit., pp. 1-274.

[3]Anita Simon and E. Gil Boyer, op. cit., pp. 1-234.

studying behavior that occurs in the classroom. Other books report the result of studies using instruments for specific purposes. In 1967 Amidon and Hough edited a book reporting research studies using the Flanders Interaction Analysis instrument or modified forms of it.[1]

Publications such as the Classroom Interaction Newsletter have been developed for periodic publication to report research purposes and instruments. Efforts have been made at many levels to make information available to persons interested in classroom observations.

Effects of Observer's Presence on Classroom Behavior

A number of people interested in classroom observations have questioned the effect that the observer's presence may have on classroom behavior. Although researchers such as Medley and Metzil,[2] Borg,[3] Good,[4] and Fox[5] have raised questions about this problem, few attempts have been made to investigate the effect of the observer's presence on classroom behavior. In February,

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[1]Amidon and Hough, op. cit., pp. 1-402.

[2]Medley and Metzil, op. cit., p. 248.

[3]Borg, op. cit., p. 238.

[4]Carter V. Good, Introduction to Educational Research (New York: Appleton-Century Crofts, Inc., 1959), p. 223.

[5]Fox, op. cit., p. 511.

1969, Sanph reported using Flanders Interaction Analysis[1] instrument to investigate what effect observers may have on a teacher's verbal behavior. Sanph collected data by using a monitering system. He later analyzed the data using the Flanders instrument. The teachers were observed under the following four experimental conditions: (1) Teachers were not informed of an observation, and no observer was present in the classroom (normal classroom condition). (2) Teachers were informed of an observation prior to its occurrence, and an observer was present in the classroom. (3) Teachers were informed of an observation, and no observer was present in the classroom. (4) Teachers were not informed of an observation prior to its occurrence, and an observer was present in the classroom. Sanph cited the following conclusions in his study: the presence of an observer leads to changes in teacher's verbal patterns; and teachers use more "praise," "acceptance of students' ideas," and less "criticism" while being observed.[2]

Masling and Stern investigated the effects of the observer's presence in the classroom. Their study was

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[1]For a detailed discussion of the Flanders instrument see Edmund J. Amidon and Ned A. Flanders, The Role of the Teacher in the Classroom (Minneapolis, Minn.: Assn. for Productive Teaching, 1967).

[2]Thomas Sanph, "Observers Effects on Teachers Behavior," Dissertation Abstracts, XXIX, No. 7-8 (February, 1969), 2573-74.

concerned with the observer's effect on the classroom behavior over a period of time. Twenty-three teachers were observed two complete school days by an observer. The hypothesis was that the effect of the observer would gradually diminish during the two day observation period. Masling and Stern constructed an instrument to collect the data. The instrument focused attention on five categories of pupil behavior, and five categories of teacher behavior. Pupil behavior included whispering, leaves seat without permission, class climate-freedom, class climate-willingness, and class climate-tension. Teacher behavior included teacher corrects; direct disciplinary attempt at influencing child; nondisciplinary attempt at direct influence of child; and laughs, smiles. The conclusions cited by Masling and Stern were "observer influence is negligible; and/or the effects of the observer are more complex than had been foreseen and affect various aspects of teacher and pupil behavior differentially."[1]

The Flanders instrument used in the Sanph study and the instrument developed for use in the Masling and Stern study described the affective behavior of the classroom. Studies were not found describing the effect of the

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[1]Joseph Masling and George Stern, "Effect of the Observer in the Classroom," Journal of Educational Psychology, LX, No. 5 (October, 1969), 351-54.

observer's presence in the classroom on the cognitive behavior of teachers or pupils.

A Review of Three Recent Instruments Developed for Use in Classroom Observations

Bloom and Stern have described the use of instruments in classroom observations in two domains. The instruments have been identified as either describing the behavior of teachers and/or pupils in the cognitive or affective domain.

A detailed description of the cognitive domain was edited by Bloom and published in 1956.[1] In 1963 Bloom cited instruments to be used in describing cognitive behavior in the classroom.[2]

In 1963 Stern identified instruments describing the behavior in the affective domain.[3] He presented a historical review of the methods used to describe behavior in the affective domain, as well as describing the effects of the classroom environment on the teachers' and the pupils' attitudes. Karthwohl and others wrote a description of the

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[1]Benjamin S. Bloom, ed., Taxonomy of Educational Objectives: Handbook I: Cognitive Domain (New York: David McKay Company, Inc., 1956).

[2]Benjamin S. Bloom, "Testing Cognitive Ability and Achievement," Handbook of Research on Teaching, ed. by N. L. Gage (Chicago: Rand-McNally and Co., 1963), pp. 379-397.

[3]George G. Stern, "Measuring Noncognitive Variables in Research on Teaching," Handbook of Research on Teaching, ed. N. L. Gage (Chicago: Rand-McNally and Co., 1963), pp. 398-417.

affective domain giving the various levels of the affective taxonomy and their interrelationship with the cognitive domain.[1]

In 1968 Simon and Boyer reported that "fifty-odd" instruments had been developed to describe the verbal behavior in the classroom.[2] Simon and Boyer reviewed twenty-six of these instruments describing their purposes and their possible uses in the classroom. A description was given of each of the twenty-six instruments reviewed.[3]

Simon and Boyer used nine criteria to describe the twenty-six instruments they reviewed.[4] The nine criteria are (1) system dimension (cognitive or affective); (2) types of communication recorded (verbal or nonverbal); (3) subject of observation (teacher only, student only, teacher and student); (4) data collection methods (live, tape recording, video tape, handwritten notes); (5) audio or video tape required (yes or no); (6) personnel needed for observation or recording session (1 coder, team of 2, 2 teams of 2, tape operator); (7) number of coders needed during coding session (no coder other than observer(s), 1 coder, 2 coders,

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[1]David R. Krathwohl, Benjamin S. Bloom, Bertram B. Masia, Taxonomy of Educational Objectives: Handbook II: Affective Domain (New York: David McKay Company, Inc., 1964).

[2]Simon and Boyer, op. cit., pp. 1-24.

[3]Ibid.

[4]Ibid.

2 teams of 2 coders); (8) coding units (category change, category + time unit, content area change, speaker change, time sample); and (9) uses reported (research, teacher training, supervision).

The nine areas cited by Simon and Boyer will be used as the basis for describing the following three instruments. The three observation instruments are the Teacher Question Inventory developed by Harris and McIntyre,[1] the Flanders Interaction Analysis instrument developed by Flanders,[2] and the Observation Schedule and Record (OScAR) developed by Medley and Mitzel.[3] The three instruments have been used for either research, supervision, and/or teacher training.

The Teacher Question Inventory was developed by Harris and McIntyre in 1961. It is an instrument used to describe an aspect of the cognitive behavior of teachers. It describes the questioning patterns of teachers during classroom discussions. It may be used in live observations, with audio tape recordings, or it may be used with video tapes. It requires only the observer's presence in the classroom or a tape operator. No other coder is needed besides the observer. Its coding unit is in categories.

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[1]Harris and Bessent, op. cit., pp. 154-155.

[2]Amidon and Flanders, op. cit., pp. 1-97.

[3]Medley and Metzil, op. cit., pp. 278-280.

It was developed as an in-service instrument for supervisors to use to improve instruction.[1]

The Teacher Question Inventory has been used as a research instrument. In 1964 Pate used the instrument to gather data from classroom observations for use in his dissertation.[2] In 1967 Wilson used the instrument to collect data for his dissertation. He deleted the "Opinion" and "Attitude or Value" categories of the instrument.[3] In 1969 Porterfield used a modified form of the instrument to collect data for his dissertation.[4]

The Flanders Interaction Analysis instrument was constructed in the early 1950's. It is an instrument used to describe affective behavior. It is used to interpret verbal behavior that occurs among a teacher and pupils in a classroom. Data may be collected from live classroom observations, audio tape recording, or video tapes. One person is needed for an observation or recording session. One

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[1]Harris and Bessent, op. cit., p. 154.

[2]Robert T. Pate, "A Study of Transactional Pattern Differences Between School Mathematics Study Group Classes and Traditional Mathematics Classes" (Unpublished Ed.D. dissertation, University of Oklahoma, 1964).

[3]John H. Wilson, "Differences Between the Inquiry-Discovery and the Traditional Approaches to Teaching Science in Elementary Schools" (Unpublished Ed.D. dissertation, University of Oklahoma, 1967).

[4]Denzil R. Porterfield, "Influence of Preparation in Science Curriculum Improvement Study on Questioning Behavior of Selected Second and Fourth Grade Reading Teachers" (Unpublished Ed.D. dissertation, University of Oklahoma, 1969).

coder is needed to code data. The Flanders instrument is interpreted on a 10 by 10 category matrix with a three second time change unit. It has been used for research, teacher training, and supervision.

The Flanders System of Interaction Analysis has been described by Simon and Boyer as "the most widely used classroom observation system."[1] Its use has been so popular that five universities and two regional educational laboratories have developed computer programs to analyze data gathered by observers using the Flanders.[2] Amidon and Hough published a book of readings in 1967 reporting research dealing with the Flanders instrument or modified forms of it.[3]

The Observation Schedule and Record (OScAR) was constructed by Medley and Mitzel in 1955. The OScAR is designed to describe aspects of behavior from both the cognitive and affective domains. It is an instrument that is used to record verbal behavior during classroom observations. The instrument is used to code data collected from live classroom observations, audio tape recordings, or video tapes. One coder is needed during an observation session. No coder other than the observer is needed to

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[1] Simon and Boyer, op. cit., p. 58.

[2] Ibid.

[3] Amidon and Hough, op. cit., pp. 1-402.

interpret the data. Interpretations are made in categories and changes when speaker changes occur. The OScAR was developed for research use.[1] Medley and Mitzel revised the OScAR four times.[2] Medley, Impellitteri, and Smith developed an OScAR 4V which has similar uses to the other OScAR instruments.[3]

The Teacher Question Inventory, the Flanders System of Interaction Analysis, and the Observation Schedule and Record are illustrations of instruments constructed to describe aspects of cognitive and affective behavior during classroom observations. The Teacher Question Inventory focuses attention primarily on the cognitive domain, the Flanders instrument focuses attention primarily on the affective domain, and the OScAR is concerned with describing behavior that occurs in both domains. There are fewer systems dealing with the cognitive domain than the affective domain. The systems developed to describe the cognitive domain tend to be more complex.[4]

Summary

The following conclusions have been made from the review of literature:

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[1] Medley and Mitzel, op. cit., pp. 278-281.

[2] Ibid.

[3] Simon and Boyer, op. cit., p. 96.

[4] Ibid., p. 7.

(1) Classroom observations were originally performed by laymen for the purpose of inspection and control.

(2) Instruments have been developed to study many different areas of behavior through observations.

(3) Recent trends in classroom observations conducted by supervisors and researchers have been to study the cognitive and/or affective behavior occurring in the classroom.

(4) Classroom observations by administrators are usually made for the purpose of administrative decision making. A check list is often used during the observation. A follow-up discussion between principal and teacher is a common practice.

(5) The effects of an observer's presence on classroom behavior of teachers and pupils are not known.

CHAPTER III

PRESENTATION AND ANALYSIS OF DATA

The problem of this study was to investigate the effects of different classroom observation conditions on the questioning patterns of teachers. The review of the literature revealed little research that had been done to investigate the problem of the observers' presence on the classroom behavior. Specifically, no research studies were found which investigated the effects of different observation conditions on the questioning patterns of teachers.

To investigate the effects of different observation conditions on the questioning patterns of teachers, a population was drawn from the teaching staff of the Oklahome City Public Schools. To be included in the population the teachers had to meet the following qualifications:

1. Each teacher was a female.
2. Each teacher was in her second year of teaching in the Oklahoma City Public Schools.
3. Each teacher was considered to be a probationary teacher by the Oklahoma City Public Schools.
4. Each teacher was teaching in a self-contained classroom in grades one through six. Teachers

in special education, music, and art were not selected.

5. Each teacher had obtained at least a B.A. or B.S. degree but had not obtained a masters degree or above. Graduate credit was acceptable.

The teachers meeting the above mentioned qualifications were randomly divided into three groups. Thirty teachers from each group were observed.

To investigate the effects of different observation conditions on the questioning patterns of teachers involved in the study the following conditions were established and followed: one group of thirty teachers was observed by the principal for administrative purposes concerning contract renewal; one group of thirty teachers was observed by the researcher for the purpose of studying the instructional program by investigating the verbal patterns of teachers; one group of thirty teachers was observed by a student in her student-teaching semester of college for the purpose of an in-service experience by observing an experienced teacher teach. Thirty minutes of verbal behavior was recorded during each observation.

Observations were made in grades one through six. Table 1 shows the distribution of the observations across the grade levels.

TABLE 1

DISTRIBUTION OF OBSERVATIONS
ACROSS GRADE LEVELS

Grade Levels	Condition I	Condition II	Condition III
First	9	7	6
Second	9	5	7
Third	7	7	7
Fourth	4	5	6
Fifth	1	2	3
Sixth	0	4	1

Table 2 represents the distribution of the different types of subject matter being taught during an observation. Each observation condition is represented. Teachers were not asked to be instructing in any specific type of subject matter during an observation. The selection of subject matter to be taught during an observation was left to the discretion of the teacher. It was assumed that the questioning patterns of teachers were not significantly related to subject matter being taught.

An Estimate of Intra-Judge Reliability

The scores reported below as an estimate of intra-judge reliability were obtained by following the procedures cited in Chapter I of this study. (See pages 16 and 17.) The scores from the five tapes are: Tape One, 91%; Tape Two, 91%; Tape Three, 81%; Tape Four, 86%; and Tape Five, 87%.

TABLE 2

DISTRIBUTION OF SUBJECT MATTER TAUGHT DURING AN OBSERVATION

Subject matter	Condition I	Condition II	Condition III
Reading	20	13	21
Arithmetic	4	8	4
Social Studies	1	5	2
Science	2	1	2
Language Arts	3	3	1

Analysis of Data

The thirty minutes of verbal behavior recorded during each observation was tabulated using the Teacher Question Inventory. Each tape was tabulated after all observations had been made. The data were analyzed using a Two-Way Analysis of Variance. The null hypotheses pertaining to Hypothesis One and Hypothesis Three were accepted, while the results of the Analysis of Variance led to the rejection of Hypothesis Two at the .001 level of significance. (See Table 3.) The number of questions asked across category levels were significantly different from each other.

To better understand the differences that occurred among the number of questions from category level to category level, the raw scores for each category level for each

TABLE 3

SUMMARY TABLE FOR THE ANALYSIS OF VARIANCE USED TO TEST THE FIRST THREE HYPOTHESES

Source of Variation	df	SS	MS	F	P
Treatments	2	13.30	6.65	<1	n.s.
Questions	7	72,195.24	10,313.61	133.44	<.001
Treatments by Questions	14	872.25	62.30	<1	n.s.
Within	696	53,790.99	77.29		
Total	719	126,871.78			

of the three observation conditions have been presented in Table 4, Table 5, and Table 6. The percentages following the raw data in Table 4, Table 5, and Table 6 represent the percentage of questions asked in each category level for each observation condition.

A "t" test was used to test the general null hypothesis of no significant difference between the mean number of questions in each category level across the three observation conditions. The mean for each category level across the three observation conditions have been presented in Table 7. The "t" tests were made to see if questions in category levels across observation conditions were asked more frequently due to the observation condition.

TABLE 4

RAW SCORES AND PERCENTAGES FOR THE NUMBER OF QUESTIONS ASKED IN EACH CATEGORY LEVEL FOR CONDITION I

Categories	Number of Questions in Each Category	Percentages of Total Questions Asked
Recognition	544	23%
Recall	600	26%
Demonstration of Skills	749	32%
Comprehension	360	15%
Analysis	15	..*
Synthesis	0	..*
Opinion	56	2%
Attitude or Value	3	..*
TOTALS	2,342	98%

*Percentages were rounded to the hundredth position. This number was not large enough to represent 1%.

The null hypothesis of no significant difference between the category means across the observation conditions was accepted for all comparisons except for comparison of Category 7, Condition I, when compared with Category 7, Condition III. This comparison was rejected at the .05 level of significance.

TABLE 5

RAW SCORES AND PERCENTAGES FOR THE NUMBER OF QUESTIONS ASKED IN EACH CATEGORY LEVEL FOR CONDITION II

Categories	Number of Questions in Each Category	Percentages of Total Questions Asked
Recognition	565	24%
Recall	460	19%
Demonstration of Skills	850	35%
Comprehension	421	17%
Analysis	35	1%
Synthesis	8	..*
Opinion	53	2%
Attitude or Value	7	..*
TOTALS	2,399	98%

*Percentages were rounded to the hundredth position. This number was not large enough to represent 1%.

TABLE 6

RAW SCORES AND PERCENTAGES FOR THE NUMBER OF QUESTIONS ASKED IN EACH CATEGORY LEVEL FOR CONDITION III

Categories	Number of Questions in Each Category	Percentages of Total Questions Asked
Recognition	527	22%
Recall	605	25%
Demonstration of Skills	872	36%
Comprehension	370	15%
Analysis	22	1%
Synthesis	2	..*
Opinion	21	1%
Attitude or Value	0	..
TOTALS	2,419	100%

*Percentages were rounded to the hundredth position. This number was not large enough to represent 1%.

TABLE 7

MEAN NUMBER OF QUESTIONS ASKED IN EACH CATEGORY LEVEL ACROSS THE OBSERVATION CONDITIONS

Categories	Condition I	Condition II	Condition III
Recognition	18.13	18.83	17.56
Recall	20.00	15.33	20.17
Demonstration of Skills	24.97	28.33	25.73
Comprehension	12.00	14.03	12.33
Analysis	.50	1.17	.73
Synthesis	.00	.27	.07
Opinion	1.87	1.77	.70
Attitude or Value	.10	.23	.00

CHAPTER IV

SUMMARY, FINDINGS, CONCLUSIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

Summary

This research project was a study to investigate the effects of different observation conditions on the questioning patterns of teachers. Ninety teachers had been randomly divided into three different groups of thirty. One group of thirty teachers was observed by the principal for administrative purposes concerning contract renewal. One group of thirty teachers was observed by the researcher for the purpose of studying the instructional program by investigating the verbal patterns of teachers. One group of thirty teachers was observed by a student in her student-teaching semester of college for the purpose of an in-service experience by observing an experienced teacher teach.

During each observation the observer recorded thirty minutes of verbal behavior occurring in the classroom. The recordings were played at a later date to tabulate the data. The Teacher Question Inventory was used to interpret the data from the recordings. This established the questioning patterns of the teachers involved in the study.

The Analysis of Variance was used to determine if a significant difference occurred in the questioning patterns of teachers involved in the study due to the different observation conditions. "Student's t" test was used to determine if a significant difference occurred between the mean number of questions in each category level across the observation conditions.

Findings

The findings of the study are of the following form:

1. There were no significant differences among the number of questions asked across the three observation conditions.

2. There was a significant difference among the number of questions asked in the eight category levels.

3. There was no interaction between the types of questions asked and the observation conditions.

4. Teachers who were involved in the study did not ask more questions in any category level across the observation conditions except in one instance. Teachers being observed for an administrative purpose concerning contract renewal asked a significantly higher number of Opinion questions than teachers being observed for an in-service purpose.

Conclusions

This study has shown that there was a significant difference between the number of questions that teachers involved in the study asked at different category levels. Questions in the category levels of Synthesis, Analysis, Opinion, and Attitudes or Values were asked less frequently than questions in the category levels of Recognition, Recall, Demonstration of Skills, and Comprehension. Of all questions asked, ninety-five percent were asked in the category levels of Recognition, Recall, Demonstration of Skills, and Comprehension. It could not be assumed that the different observer's presence affected the question patterns of the teachers as the questioning patterns were constant across the observation conditions. The Analysis of Variance has shown that no interaction existed among the category levels and the observation conditions. One may assume that the teachers involved in the study felt that a major portion of questions should be asked in these category levels under all observation conditions. It is interesting to consider what probable percentage of questions should be asked at each category level. Research has not established an accepted percentage of questions to be asked across all category levels, but a person may question asking ninety-five percent of all questions at the category levels of Recognition, Recall, Demonstration of Skills, and Comprehension.

Student's "t" test has shown a significant difference between the mean number of Opinion questions asked in Observation Condition I when compared with the mean number of Opinion questions asked in Observation Condition III. Teachers observed by the principals asked a significantly higher number of Opinion questions than teachers observed by a student in her student-teaching semester of college. A conclusion not supported by research but which may be inferred from this finding is that teachers may think that principals consider the asking of Opinion questions to be important. Even though only two percent or less of the total questions asked were asked in this category level, the teachers may have adjusted their questioning patterns to what they perceived the principals' concepts were. The principals were making observations for decision-making concerning contract renewal and the teachers may have felt that the principals would consider it important to draw out students' opinions during discussions.

Another possible conclusion not supported by research that may be drawn from this finding would be that teachers have a tendency to teach differently when different purposes for observations are made known to the teacher. Of the three observation conditions for this study; administrative decision-making, studying the instructional program, and an in-service experience, the latter was the only condition where the teacher or her instructional practices were not

being observed by an experienced educator. In the latter instance the teacher was demonstrating her skills to a less experienced person. Teachers may have a tendency to maintain more control and involve students less by seeking out their opinions when being observed by an individual less experienced than they.

It is interesting to compare the total number of questions asked by all teachers in each observation condition. Teachers observed under Condition I asked a total of 2,342 questions, teachers observed under Condition II asked a total of 2,399 questions, teachers observed under Condition III asked a total of 2,419 questions. The difference between the largest and smallest total is seventy-seven. A person may assume from this data that different observation conditions do not affect the number of questions teachers ask. This assumption was supported by the results obtained from the Analysis of Variance but the small differences among the total number of questions asked under each condition were interesting to note.

One may not assume that the problem of how the observer's presence affects the classroom behavior has been adequately answered from the results of this study. This study has served its purpose. It has answered the question of how an observer's presence affects the classroom in one aspect of the total classroom behavior; that of the questioning patterns of teachers under different observation

conditions. By having answered the specific questions asked in this study other studies may now be done to investigate the effects of the observer's presence on classroom behavior in other areas. The following section offers some possible studies.

Suggestions for Future Research

This study has investigated the effects of different observation conditions on an aspect of teachers' cognitive behavior; their questioning patterns. A replication of this study using an instrument to investigate the affective behavior in the classroom, such as the Flanders Interaction Analysis instrument, would offer a basis for comparison. The Flanders instrument would also have the advantage of describing aspects of pupil behavior as well as teacher behavior.

Due to the needs of this study teachers involved in the study were required to be in their second year of teaching in the Oklahoma City Public Schools. A study controlling the variable of years of experience, such as, group one may include teachers with one to five years experience, group two may include teachers with six to ten years of experience, etc. would be helpful. It would offer a comparison for the results of this study.

This study has shown that a significant difference existed in the number of questions asked at the different

category levels. The significance of an unequal distribution of questions across category levels has not been established. A study to establish a suggested percentage of questions to be asked at each category level should be made.

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APPENDIX A

TEACHER QUESTION INVENTORY

OBSERVATION INSTRUMENT

TEACHER QUESTION INVENTORY*

Teacher_____ Grade or level_____

Subject_____ Topic_____

Date_____Time_____ Observer_____

Question Types	Frequency	Total	PerCent
A. COGNITION			
1. Recognition--The student is presented with cues that require only the recognition of the correct option from two or more choices.			
2. Recall--The student is asked to recall one or more simple facts.			
3. Demonstration of skill--The question requires the application of knowledge in the performance of a skill, as in arithmetic, reading, or foreign language.			
4. Comprehension--The student is required to produce evidence that he understands simple relations among facts.			
5. Analysis--The student is asked to identify the relationships between elements in a situation or to explain a complex phenomenon.			
6. Synthesis--The question calls upon the student to combine or reorganize specifics so as to develop a new structure or generalization.			
B. AFFECTIVITY			
1. Opinion--The question requires a response involving expressions of feeling or personal point of view on comparatively simple matters other than facts.			
2. Attitudes or Values--The student is asked for a response involving deep-seated attitudes or values, and the teacher asks him to defend his position.			
TOTAL - All Types			

*Published in a book by Ben Harris and Wailand Bessent, In-Service Education, (New York: Prentice-Hall, 1969), p. 154.

APPENDIX B

RAW DATA

CONDITION I

Teachers	Category Level 1	2	3	4	5	6	7	8
1	12	0	0	22	1	0	3	0
2	6	11	31	9	0	0	0	0
3	34	8	21	32	0	0	0	0
4	9	7	69	29	0	0	0	0
5	6	25	27	7	0	0	0	0
6	14	15	40	3	0	0	7	0
7	47	40	20	11	1	0	3	0
8	25	18	17	7	0	0	0	0
9	24	32	19	7	0	0	9	0
10	16	35	27	20	0	0	2	0
11	35	38	35	33	1	0	0	0
12	22	16	24	0	0	0	0	0
13	16	9	17	6	0	0	2	0
14	8	14	22	3	0	0	0	0
15	24	10	15	11	0	0	0	0
16	10	8	43	0	0	0	0	0
17	26	24	33	1	0	0	0	0
18	12	21	29	0	0	0	0	0
19	7	14	26	18	0	0	0	0
20	25	25	4	16	6	0	3	0
21	10	17	29	45	0	0	0	0
22	16	11	31	0	0	0	1	0
23	14	21	11	4	1	0	10	3
24	22	21	46	8	0	0	0	0
25	27	6	30	6	0	0	0	0
26	15	28	38	24	1	0	2	0
27	8	13	14	17	2	0	5	0
28	13	15	18	3	1	0	3	0
29	21	48	0	17	1	0	2	0
30	20	50	13	1	0	0	4	0

CONDITION II

Teachers	Category Level 1	2	3	4	5	6	7	8
1	25	13	64	19	0	0	4	0
2	16	20	17	5	0	0	3	0
3	11	13	35	16	0	0	0	0
4	35	39	17	12	0	0	2	0
5	15	5	28	6	0	0	0	0
6	15	16	1	41	5	0	4	0
7	14	4	35	0	0	0	0	0
8	9	7	14	23	0	0	0	0
9	9	24	35	29	0	0	0	0
10	17	10	44	3	0	0	4	0
11	12	26	12	9	0	0	0	0
12	20	22	3	23	13	7	12	4
13	39	15	43	8	0	0	0	0
14	26	10	21	21	6	0	0	0
15	11	11	11	19	1	0	1	0
16	27	13	59	1	0	1	3	0
17	23	11	11	24	0	0	0	0
18	24	22	15	22	1	0	1	0
19	15	31	48	1	0	0	3	0
20	13	14	28	8	4	0	4	3
21	10	11	36	13	0	0	0	0
22	32	31	8	28	5	0	2	0
23	8	9	24	1	0	0	0	0
24	27	6	49	33	0	0	0	0
25	26	23	27	6	0	0	0	0
26	21	13	22	2	0	0	1	0
27	28	14	78	20	0	0	2	0
28	10	4	28	7	0	0	0	0
29	11	15	6	9	0	0	5	0
30	16	8	31	12	0	0	2	0

CONDITION III

Teachers	Category Level 1	2	3	4	5	6	7	8
1	20	22	22	20	0	0	0	0
2	33	11	10	25	0	0	0	0
3	17	22	28	9	0	0	0	0
4	11	7	20	14	0	0	5	0
5	6	14	27	3	0	0	0	0
6	42	30	34	8	0	0	0	0
7	10	19	12	11	0	0	0	0
8	16	24	21	8	0	0	1	0
9	19	25	1	38	11	0	2	0
10	12	22	30	14	0	0	0	0
11	8	10	34	0	0	0	0	0
12	30	17	2	19	0	0	0	0
13	18	17	24	1	0	0	0	0
14	40	52	54	2	0	0	0	0
15	19	63	18	7	0	0	0	0
16	11	11	27	13	2	0	0	0
17	24	5	48	7	0	0	0	0
18	5	7	39	14	0	0	0	0
19	12	23	27	14	3	0	2	0
20	21	28	62	28	0	0	0	0
21	16	14	35	19	0	0	1	0
22	17	20	55	39	1	0	0	0
23	15	31	29	10	1	0	0	0
24	12	11	14	4	0	0	0	0
25	17	7	60	2	0	0	1	0
26	11	12	16	6	0	0	5	0
27	20	35	57	2	0	0	0	0
28	22	23	31	12	0	0	0	0
29	16	19	32	0	0	0	0	0
30	7	4	3	21	4	2	4	0

APPENDIX C

LETTER OF PERMISSION TO CONDUCT THE RESEARCH IN OKLAHOMA CITY PUBLIC SCHOOLS

Oklahoma City Public Schools
900 North Klein
Oklahoma City, Oklahoma 73106

February 27, 1970

Mr. Morris L. Lamb
1616 Alameda
Apartment J-7
Norman, Oklahoma

Dear Mr. Lamb:

The Research Committee has approved your request to conduct research in the Oklahoma City Public Schools according to the application you recently submitted.

We request that you coordinate the activities in connection with the study with Dr. John Brothers, Director of Elementary Education.

We would appreciate receiving a copy of the completed study for our files.

Sincerely yours,

William L Shell

William L. Shell
Director
Research and Statistics

WLS/ys