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## Methodology in Studying Teachers' Classroom Language<sup>1</sup>

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WHEN research reports are written, the methodology is often obscured by the presentation of the results. Generally the researcher and the reader have available the theoretical and synthesis data on a number of quasi-experimental and descriptive designs either to implement further research or to utilize completed research. By giving distinct attention to one design of a specific study it is hoped that more understanding of research methodology might result.

This article discusses the methodology of a study of second- and fifth-grade teachers' oral classroom language. The results and the rationale as well as the procedures are discussed elsewhere (Kean, 1967, 1968). Included here are a description of the sampling procedures, the data collection procedures, the descriptive language categories, analytical procedures, and a brief discussion of the limitations of such research.

The study sought to discover the possible applications of linguistic criteria in obtaining more complete information about the

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behaviors of teachers in the classroom. The major objective of the study was the "dimensioning" of teacher-spoken language according to its structure and the comparison of this structure among teachers at two different grade levels.

Hopefully the study would determine whether research along this front could provide useful information. The study was grounded in two suppositions: (a) teaching acts in the classroom primarily involve the use of language (Aschner, 1961); and (b) a linguistic description of the language of classrooms is prior, logically, to studies of the use, recognition, causation, and context of this language (Postal, 1964; Carroll, 1964).

### Subjects

Ten second-grade teachers and eleven fifth-grade teachers of a public school system in a suburb (1960 census pop. 47,922) of a middle-sized industrial city (pop. 290,351) in northeastern Ohio participated in the study. A suburban system was selected to obtain gross control over socioeconomic status of families of the children in the classes of the teachers involved, other "community" effects, and varying "school" effects. Teachers at second- and fifth-grade levels were chosen to maximize apparent differences in teachers' language possibly attributable to grade level and to avoid confounding

the study with the multitude of factors that affect the operation of the teachers working with children in school for the first time (as in first grade), or those working with children for the last time in elementary school (as in sixth grade), or those working with children in a more "subject-centered" program (as in high school).

To eliminate the influence of some relevant but possibly confounding variables, the subjects used in the study were to be women with at least a bachelor's degree earned in Ohio or a neighboring state, with a classroom free of extraordinary influences, and with at least one year of teaching experience. A list of teachers meeting the criteria was provided by the school system. These teachers were then approached first by an administrator and then by the investigator to solicit their cooperation.

Of the twenty-five teachers who met the criteria, three did not participate for personal reasons. Of the twenty-two who volunteered for the study, one was eliminated when it

was discovered, belatedly, that she was teaching a combined second-third grade class. The twenty-one teachers finally recruited were all Caucasian. Their average age was 41.2 years; experience 10.3 years; graduate semester hours completed 11.8. They represented nine schools in the system, constituted 34 percent of all second- and fifth-grade teachers in the system and 84 percent of the teachers who met the selection criteria.

### Data Collection

The data were collected during January, February, and March of 1965. Each teacher's oral classroom language was tape recorded for five 40-minute sessions of regular classroom activity. The first session served to familiarize teachers and their pupils with the procedures and to reduce heightened novelty effects due to the introduction of the recording equipment.

The tapes of the remaining four sessions were transcribed and the transcripts served

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as the basic data source for analysis in the study. The data were recorded by means of a wireless transmitter, worn by a teacher, to an FM tuner and tape recorder outside the classroom (see Herbert and Swayze, 1964). No observers were present in the classroom when the data were being collected.

### Language Categories

The categories selected for the description of the linguistic structure of teachers' classroom oral language were modifications of other linguistic schemes developed for the syntactic analysis of children's language (Loban, 1963; Strickland, 1962). They are limited in number and in no way can be construed to represent the variety of ways by which language might be categorized. They were used here primarily because they had been used successfully in studies of children's language and would facilitate comparisons.

The measures used included:

1. Segmentation of teacher talk; number of syntactic units (communication unit); number of tangled word groups not making semantic sense (maze); total word length of individual responses. For example, in the utterance "and [what did ah] was Jerry good at catching dogs?" the bracketed phase would be called a maze; the remainder of the utterance, a communication unit. Hunt (1964, p. 34) has defined the latter as the "shortest grammatically terminable units into which a connected discourse can be segmented without leaving any fragments as residue."

2. Structural patterns of main clauses; the frequency and variety of grammatically complete main clauses in the communication unit (e.g., subject-verb-inner complement-outer complement) and the incidence of grammatically incomplete main clauses (partials).

3. Component parts of the structural patterns: incidences of words, phrases, and clauses used as subjects, complements, and movable constructions within the main clauses.

4. Subordination index: a weighted scoring of all dependent clauses where each clause is assigned one point plus additional points if dependent upon another dependent clause and so on.

5. Vocabulary diversification index: a ratio of the number of different words (types) to the total number of words (tokens) in the sample. A 2,000 word sample for this index was obtained by selection of five 100-word units from random pages of five equally assigned divisions of each transcript.

In studies of children's languages, the total number of words, number of communication units, number of words in communication units, number of mazes, number of words in mazes, and vocabulary diversification have been called descriptors of language fluency (e.g., Loban, 1963, p. 29). The variety of patterns, manipulation of pattern components, and use of subordination have been considered estimates of language effectiveness. The description of language obtained in this study is assumed to result from interaction of the teachers with the children in an instructional situation and does not necessarily indicate the teachers' fluency or effectiveness in using the English language in other situations.

### Analytical Procedures

Because of time commitments, the teachers were put into two groups for analysis of the data. The procedure for division of the total group into two subgroups for analysis was arbitrary. An attempt was made in Group I to provide equivalency of age and experience. Group II comprised all teachers remaining after this division. The data for Group I were analyzed in 1965; for Group II, in 1966.

Since the study was exploratory, the investigator primarily desired to examine and describe the verbal behavior. Descriptive statistics were reported for all measures. Intercorrelations of major criterion measures were computed. Some probabilities were computed to strengthen the inferences about second- and fifth-grade teachers' language.

Consistency in coding the transcripts of the teachers' language was good. Reliability of coding among three coders was .89 to .99 for all measures finally used in the study. However, a considerable amount of modification of linguistic categories as defined in

other studies was necessary in order to make use of them in this study.

### Limitations

The study was limited generally by the constraints placed on the characteristics of the teachers who were asked to participate and by the nature of the criterion measures. It is possible that replication of this study in another school system or another state would produce different results. It is equally plausible that the results obtained pertain only to the teachers of the two grades involved. However, in light of the similarities and overlap noted for the two grade levels actually involved in the study, a hypothesis could be made that the results of this study can be interpolated to cover third- and fourth-grade teachers similarly selected from the same school system.

Extensions of the study to elementary teachers at all grade levels, and indeed, to high school teachers, would provide information over a range of teachers that an exploratory study like this one could not handle. One such study has already been completed by Lemire (1968). One dealing with the language of high school teachers is in progress at the University of Texas; another dealing with the language of teachers and children at nursery school, second-, fifth-, and eighth-grade levels is in progress under the direction of the present investigator.

Unfortunate, too, is the lack of information available from this study on the relationship of the content of the classroom discussions to the linguistic structures employed by teachers. The influence of content on teachers' language, confounded in this study, deserves specific attention.

The language measures themselves represent another major limitation to this study. The full complexity of the English language could not possibly be explored in a study of this type. It was necessary to limit the criteria to previously developed, if perhaps weak, descriptors of fluency, and language effectiveness and control. The language coding categories are not defined as exclusively as the investigator would have liked. The measures

used have already been challenged by more involved analytical procedures as derived from generative grammar (see Hunt, 1964; O'Donnell, Griffin, and Norris, 1967).

As a result of the imperfect nature of the classifying measures, this study may be difficult to replicate in its entirety. However, the investigator does feel that procedures given were as clearly defined in the directions given to the coders as was necessary to train them to analyze the transcripts consistently. Some degree of personal bias in classifying was present in the study. If some categories' boundaries are warped, they are so for all teachers in the study and to the same degree.

Another serious limitation to this study and to other studies concerned with teaching is the complete lack of knowledge concerning the relationship of the teachers' language inside the classroom to their language outside the classroom. For instance, one does not know how the teachers in this study would instruct an adult friend, or converse with children outside the classroom, or lecture at their service clubs, or question a legislator. Although on the surface this knowledge would seem to have little to do with the actual classroom instructional processes, the investigator asserts that this kind of information is needed before studies are undertaken and/or prescriptions advanced concerning which language elements can, and which cannot, consciously be manipulated by the teacher or be taught in teacher preparation programs.

Additionally, in spite of the effort to reduce its effects, no comparisons are available to make assertions about the reactive effects of the experimental arrangements and possible teacher selection biases on the outcomes of the study.

### References

Mary J. McCue Aschner. "The Language of Teaching." *Language and Concepts in Education*. B. O. Smith and Robert H. Ernis, editors. Chicago: Rand McNally & Company, 1961. pp. 112-26.

John B. Carroll. "Linguistics and the Psychology of Language." *Review of Educational Research* 34: 119-26; April 1964.

John Herbert and John Swayze. *Wireless Ob-*

ervation. New York: Bureau of Publications, Teachers College, Columbia University, 1964. 34 pp.

Kellogg W. Hunt. *Differences in Grammatical Structures Written at Three Grade Levels*. U.S.O.E. Cooperative Research Project No. 1998. Tallahassee: Florida State University, 1964. 152 pp.

John M. Kean. *Linguistic Structure of Second and Fifth Grade Teachers' Oral Classroom Language*. U.S. Office of Education Cooperative Research Project No. S-331. Madison: University of Wisconsin, 1967. 145 pp.

John M. Kean. "Linguistic Structure of Second and Fifth Grade Teachers' Oral Classroom Language." *American Educational Research Journal*. In press, expected publication, November 1968.

Antoinette Lemire, S.A.S.V. *La Structure Linguistique de la Langue Orale d'Enseignement Utilisée par des Institutrices de 5e Année*. Doctor's thesis. Ottawa, Canada: Université d'Ottawa, 1968. 131 pp.

Walter D. Loban. *The Language of Elementary School Children*. National Council of Teachers of English, Research Report No. 1. Champaign, Illinois: the Council, 1963. 92 pp.

Roy C. O'Donald, William J. Griffin, and Raymond C. Norris. *Syntax of Kindergarten and Elementary School Children: A Transformational Analysis*. National Council of Teachers of English, Research Report No. 8. Champaign, Illinois: the Council, 1967. 115 pp.

Paul M. Postal. "Underlying and Superficial Linguistic Structure." *Harvard Educational Review* 34: 246-66; Spring 1964.

Ruth C. Strickland. "The Language of Elementary School Children: Its Relationship to the Language of Reading Textbooks and the Quality of Reading of Selected Children." *Indiana University School of Education Bulletin* 38: 1-131; July 1962.

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