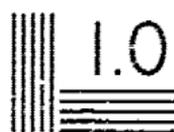
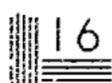
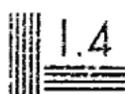
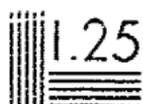


1-DJ



26

25



DOCUMENT RESUME

ED 153 200

CS 004 044

AUTHOR Barr, Rebecca; Duffy, Gerald
 TITLE Teacher Conceptions of Reading: The Evolution of a Research Study.
 PUB DATE Mar 78
 NOTE 20p.; Paper presented at the Annual Meeting of the American Educational Research Association (Toronto, Canada, March 27-31, 1978)

EDRS PRICE MF-\$0.83 HC-\$1.67 Plus Postage.
 DESCRIPTORS Elementary Education; *Reading Instruction; *Reading Research; Research Needs; Research Problems; Student Teacher Relationship; *Teacher Attitudes; *Teacher Behavior; Teacher Characteristics; Teaching Styles; *Teaching Techniques

ABSTRACT

The Conceptions of Reading project is examining the role of teacher beliefs and predispositions within the classroom, a complex task that has required modification of both conceptualization and research methodology. This paper discusses the original goals of the project, changes that have resulted from the first year of pilot studies, and proposed future work. Among the findings that resulted from initial case studies were that belief systems were more complex than initially hypothesized; that many teachers did not hold a set of beliefs about what constitutes good reading instruction for pupils in general, varying their views according to the learning rate of the child and the stage of reading acquisition; and that some teachers had predispositions toward certain groups of children, affecting both manner of supervision and allocation of instructional time. (AA)

 * Reproductions supplied by EDRS are the best that can be made *
 * from the original document. *

ED153200

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY.

TEACHER CONCEPTIONS OF READING:
THE EVOLUTION OF A RESEARCH STUDY

Rebecca Barr
University of Chicago

and

Gerald Duffy
Michigan State University

PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Rebecca Barr

Gerald Duffy

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC) AND
USERS OF THE ERIC SYSTEM

This paper was prepared for presentation to the Toronto Meetings of the American Educational Research Association, March, 1978. The work reported herein is sponsored by the Institute for Research on Teaching, College of Education, Michigan State University. The Institute for Research on Teaching is funded primarily by the Teaching Division of the National Institute of Education, United States Department of Health, Education, and Welfare. The opinions expressed in this publication do not necessarily reflect the position, policy, or endorsement of the National Institute of Education (Contract No. 400-76-0073). Printed in U.S.A.

004044

Traditional research studies comparing the relative effectiveness of various reading methodologies, approaches or materials have consistently failed to provide satisfactory explanations for differences in instructional effectiveness (6). Educational leaders, in attempting to explain these failures, have indicated that the crucial variable is not the approach or materials but the teacher (3) and more specifically, that it is the teacher's belief system or conceptual base which makes the difference (4,5).

The study described here is designed to determine whether teachers possess such belief systems or conceptions (particularly about reading) and, if they do, whether they influence instructional patterns and, ultimately, the reading growth of pupils. As such, like most of the studies being conducted at Michigan State University's Institute for Research on Teaching, it focuses on teacher decision-making within the environment of the classroom, with naturalistic studies being conducted to determine the crucial instructional elements which should be contrasted from teacher to teacher.

These classroom studies, however, have created an evolutionary change in the project. In effect, the reality of the classroom has caused the researchers to make significant conceptual shifts within the project. These shifts and the directions being taken as a result are the focus of this paper.

EARLY STAGES OF THE STUDY

The Conceptions of Reading Project is currently in its initial operational year in which procedures are being piloted and tentative data are being collected as a means for focusing the study in succeeding years. The project's progress to date can be described in two stages.

Stage One. The first stage, occurring during 1976-77, involved initial conceptualization of the purposes and parameters of the project. At that time, reading conceptions were viewed in terms of the theoretical models of reading espoused by various reading educators. Literature searches conducted in this stage substantiated that little research had been conducted regarding teacher conceptions of reading (2) and offered some support for the apparent existence of at least five major "conceptions" of reading (basal text, linear skills, natural language, interest-based and integrated curriculum models).

At this point, the project staff piloted two instruments to use in identifying teachers possessing various reading conceptions. The first, a Proposition Sort, ultimately evolved into a Likert scale instrument consisting of thirty-six statements reflecting the various reading conceptions. This instrument was the initial screening device for selecting teachers to be observed during 1977-78. A modification of George Kelly's Role Concept Repertory Test (7,8) was the second instrument used, being administered as a reliability check to those teachers identified on the Proposition Sort as having strong belief systems about reading.

In this first stage, the project was viewed as relatively uncomplicated. A linear relationship was presumed to exist between a teacher's conception of reading, the teacher's instructional practice and the impact on pupils, and, to test this hypothesis, the researchers expected that they would only

have to identify teachers possessing various conceptions, note their instructional practices and assess the pupil achievement level.

Stage Two. The second stage of the study involved initial data collection and analysis and encompassed the first half of the 1977-78 school year. During this time, seven teachers in Michigan, one in Chicago and two in Albany (each selected either by the above instruments or by nomination) were observed for ten days during the first six weeks of school and for five additional days during late November and early December. The methodology of the ethnographer was used, with researchers making heavy use of field notes during observations and conducting both pre- and post-observation interviews with the teachers.

These observational and interview data were the genesis for the conceptual shifts in the project since it quickly became apparent that the teachers' classroom behavior did not fit the researchers' preconceived notions regarding either reading conceptions or the relationship between reading conceptions and teacher practice. Consequently, what was a relatively simple study soon became a complicated undertaking.

While some of the findings which led to the conceptual shifts will be presented in greater detail later in the paper, a few brief examples will illustrate the point for now. First, while it had been supposed that the instruction of most teachers is guided by a conception of reading, it was found that some teachers do not have strong conceptions of reading and that some of those who do espouse a reading conception will abandon the principles of their conception when faced with a particular set of circumstances. Second, while it was assumed that a teacher's reading conception could be associated with one or another of the theoretical views of reading, it was found that teachers reflect combinations of views rather than a single one.

Third, while it was assumed that teachers made conscious and reflective decisions, it was found that such was not always the case. Finally, while a linear relationship had been assumed to exist between teacher conceptions and teacher behaviors, it was found that conditions outside the control of teachers often intervene between conceptions and practice, influencing teachers as much as (or, in some cases, more than) the reading conception.

In short, then, the research staff concluded that they had oversimplified the nature of conceptions and the nature of classroom operations. Consequently, conceptual shifts were made in order to match the project with the reality of the classrooms.

CONCEPTUAL SHIFTS IN THE PROJECT

These conceptual shifts fall into four categories: changes in the overall framework of the project, changes in definitions, changes in hypotheses and changes in methods of collecting and analyzing data.

Overall framework. The initial work of the project, in effect, attempted to impose the pre-conceived theories of reading instruction upon teachers and classrooms. Such a strategy overlooked the necessity of beginning with empirical examinations of the classroom activities of teachers themselves.

As Barr and Dreeben (1) have said:

At issue...is identifying the properties of classrooms and of instruction. It makes a difference, we found, if investigators begin with observations or if they begin with a commitment to a conceptual framework, an ideology or a reform. At stake is the description of classrooms and instruction -- the nature of the phenomena themselves -- and the determination of what is problematic about them.

In trying to impose theories of reading upon classroom instruction without first studying the nature of the classroom itself, we were missing the nature of the phenomenon itself. Consequently, the first conceptual shift in the project was to move from the pre-conceived scheme about co-

dified views of reading to an empirical study of classrooms. As such, our focus shifted from one of "imposing" patterns on teachers to that of "discovering" beliefs and activity patterns that teachers follow when solving the problematic issues arising in their work.

Definitions. Not surprisingly, the shift described above also caused the researchers to revise the definition of "teacher conceptions of reading." No longer could it be defined in terms of the five codified conceptions identified in the literature. Instead, a "conception of reading" is now seen as a set of principles which teachers use to make decisions in managing and conducting a reading program. These principles are observed dimensions which are apparently generic to each of the participating classrooms, although various teachers may manifest particular dimensions in different ways. To illustrate, one dimension is the way the teacher determines pupil reading success; all teachers apparently make these kinds of decisions but, along the continuum of this dimension, some teachers rely on skill-oriented measures while others rely on affective measures. Other dimensions have been tentatively identified and include: (1) criteria used in selecting instructional material, (2) criteria used in forming groups, (3) allocation of time to various reading activities, (4) allocation of time to pupils of various ability levels, (5) the instructional role played by the teacher and (6) favored prompts used.

Hypotheses. At the outset of the project, the research questions being pursued were straightforward but narrow, focusing exclusively on whether a teacher's conception of reading affects the way the teacher teaches and what the pupil learns. While such questions continue to be of importance, the range of research questions has broadened into five

additional types of hypotheses.

The first type of hypothesis focuses on the nature of teacher conceptions of reading and includes questions ranging from whether teachers possess conceptions of reading to whether teachers hold conceptions of reading to various degrees or at varying levels of strength. The second type focuses on how teachers react when faced with various mandates or institutional constraints which conflict with their belief systems. Third, a set of research questions has been identified which focus on how a teacher's conception of reading affects pupils of various ability levels. The fourth type of working hypothesis pertains ^{to} the means by which conceptions are developed and modified through experience and training. Finally, a set of research questions focuses on how the observed patterns of teacher conceptions of reading can be meaningfully related to the codified views of reading commonly promoted in teacher education programs.

Data analysis. The broadening of the scope of the study, the definitions and the range of potential research questions have, in turn, influenced the gathering and analysis of data.

Once it became apparent that teacher conceptions of reading could not be limited to codified views of reading, three levels of data collection and analysis techniques were planned. At the first level, each classroom teacher would be intensively studied as an individual case to determine the instructional pattern employed and the rationale for decisions. The immediate test of the validity of these studies would be the ability to predict a particular teacher's decision-making pattern on any given day. As this goal was achieved, a second analysis could be applied to determine the common dimensions of decision-making employed by all ten teachers; these would then

become the common denominator for comparing the instructional pattern of one teacher with that of another. Finally, at the third level, these common dimensions and the teacher's relationship to them would be used to infer a teacher's conception of reading, which in turn would be used as a basis for revising the Proposition Sort.

To insure that data relevant to these tasks were collected, three types of post-observation analyses are now being used to reduce the data from the field notes. First, a chart is utilized to display the quantitative aspects of the classroom, including time allocation, time usage, the number of incidents and so on. Second, illustrative anecdotes are drawn from the field notes, coded and catalogued in a retrieval system in order to note qualitative differences from classroom to classroom. Finally, a form of "participant structures" is being used to describe the sequence and flow of interaction during the reading period.

Summary. While it is somewhat painful to concede that the research staff did not accurately perceive the complexity of the project or anticipate all the difficulties at the outset, we nevertheless realize that we now have a much more interesting study. Some of the most intriguing results are presented below.

SOME RESULTS FROM THE CASE STUDIES

On the basis of our work to date, certain tentative conclusions have begun to emerge which will become hypotheses to be tested during next year's study. These can be discussed in three general categories: (1) the complexity of teacher beliefs, (2) teacher beliefs and classroom practice and (3) influences which mediate teacher beliefs.

The complexity of teacher beliefs. As was stated earlier in this paper,

belief systems are more complex than we initially realized. This complexity is manifested in at least two ways.

The first focuses on determining a teacher's beliefs. The Proposition Sort, our major instrument for detecting teacher beliefs, tapped the teacher's assumptions about the most viable form of reading instruction. Items were keyed into the five positions described earlier and also a sixth position indicating teacher confusion; however, only the two structured positions and the three less structured positions were found to be independent statistically.

Further, evidence from teacher interviews suggests that teacher beliefs are multidimensional. That is, a teacher's belief about useful instructional materials and methods may not predict the teacher's views on testing or motivation. In order to test for the independence of underlying dimensions, we need to modify the Proposition Sort so that aspects of teacher beliefs are measured independently. Some teachers then may be found to be consistent across dimensions while others who are described as eclectic on the current Proposition Sort will have a dimensional profile detailing the characteristics of their eclecticism.

Teacher beliefs are more complex than we expected in a second respect: There are at least three areas of beliefs which are not being tapped by the current Proposition Sort but which are observed in classrooms. First, teachers differ in the degree to which they believe that the teacher's guide accompanying reading materials must be followed. On the basis of interview data, three of the ten teachers felt quite free to adapt and modify instructions and to omit or change the order of reading selections. The remaining teachers followed directions and the order of selections without modification.

Second, many of the case study teachers do not hold a set of beliefs about what constitutes good reading instruction for pupils in general; rather they hold views that are differentiated according to the learning rate of the child and the stage of reading acquisition. Most striking in this respect is a Michigan teacher whose Proposition Sort profile indicates a strong belief that reading materials should reflect natural language patterns of children and that instruction should emphasize comprehension and enjoyment. However, in the classroom she emphasizes systematic development of basic reading skills, a contradiction she explains by saying that most of her past experience has been in the intermediate grades but that she has been teaching a second grade this year and feels that children of this age need a systematic program to develop basic word attack skills. Similarly, the majority of other case study teachers report during interviews that children who acquire reading skills more slowly should receive a structured reading program, whereas faster learning children thrive with less structure.

Finally, some teachers appear to have predispositions toward certain groups of pupils, particularly slow-learning versus fast-learning children. Biases can be observed in the manner in which time and teacher supervision are allocated to different groups of students during the course of the day. For example, one teacher consistently meets with the able readers first thing in the morning during prime instructional time, followed by the average group, and then the group experiencing most difficulty at the time late in the morning when the incidence of disruptive events increased. The time in the small group instructional setting reflects the size of the group and since the less advanced group is about half the size of the other groups, they take half the time. In addition, the teacher follows the

policy of bumping the slower learning group from the schedule entirely on those days when special events occur. Further, she has just removed herself entirely from the slow group by making her new practice teacher responsible "because if you can teach the low group, you can teach anyone to read." By contrast, a Michigan first grade teacher represents the opposite extreme in resource allocation within the classroom; in her class, the slower-learning readers receive a lion's share of small group instruction during prime time and are never bumped off the daily schedule.

It can be seen, then, that teacher beliefs are quite complex. Not only are the conceptions difficult to determine because of the overlapping of conceptions and because of the multi-dimensional nature of conceptions, but observation reveals that the conceptions of certain teachers will apparently change according to the grade level or the ability level of the group being taught. Other teachers, however, tend not to change at all; still others follow the teacher's guide exclusively and seem to abdicate responsibility for decision-making.

Beliefs and classroom practices. While the issue of teacher beliefs is complex, our data nevertheless suggest that teacher beliefs do affect aspects of classroom practice. For all but two of the ten teachers studied, their beliefs are manifested in practice in one of two areas or both; in their selection of instructional materials and/or in the way they gave pupils help during reading.

The degree to which beliefs determine material selection depends on two sets of constraints operating within the school: whether principals mandated specific materials and the availability of materials. For example, the Chicago teacher believes strongly in the advantage of using a highly

structured decoding program. But as a teacher new to the school, she found only two basal series available. She expressed a preference for Distar materials which she had used successfully in her previous school; her new principal obtained the materials for her from another school. By contrast, one teacher in the Albany sample believes in the efficacy of an unstructured, natural language program. However, she is required to phonics program specified by her principal. As a consequence, in addition to the required material, she surreptitiously uses materials she believes to be more appropriate in terms of interest and language patterns.

Descriptive evidence of the way teachers give help to pupils during instruction suggests that belief systems are often manifested in the kinds of prompts teachers use during instruction. Those committed to skill development emphasize decoding and sight word mastery; those teachers committed to reading as a process of communication emphasize comprehension questions and enjoyment. For instance, one Michigan teacher who reflects a belief in linear skill programs spends almost all her instructional time helping her first graders with problems of decoding while spending virtually no instructional time on comprehension. In contrast, a fourth grade Michigan teacher committed to the concepts of pupil self-selection spends almost all his time conferencing with pupils about the content of the books they chose to read; he devotes virtually no instructional time to helping children identify words.

However, beliefs do not always get applied to practice. Two deviant teacher cases are of interest in this regard. Both teachers expressed beliefs which reflected interest in general language development and comprehension but both focused mainly on skill development in classroom practice.

The first, who was cited earlier, explains the deviation as reflecting the basic skill needs of her second grade pupils. The second teacher is a passive member of a team of teachers; her instructional strategies reflect the belief system of the dominant member of the team.

Influences which mediate beliefs. While teacher beliefs are often apparent in their practices, it is also clear that the manner in which teacher beliefs affect practice is conditioned by institutional and classroom characteristics. Four such conditioning influences were identified: the time schedule, required testing, class composition and constraints on materials.

When school begins, certain events are already scheduled and others quickly are fixed within a time slot. The beginning and end of the school day and the lunch hour is established, as are extra classroom activities such as library, music, gym and art. Recess, laboratory, and special instructional times for learning disabled pupils, EMH children, disabled readers, and bilingual children are quickly established. Obviously, these fixed events limit the time available for the classroom reading program and other classroom activities. Teachers differ in how rigidly they schedule their class-time. Our observation revealed that one of the Albany teachers in an open classroom is most controlled by the clock because to keep students involved in a discussion is to encroach upon another teacher's scheduled time; by contrast, teachers in a self-contained class feel free to deviate from their self-imposed schedule periodically when special events intervene or when a discussion is lively.

In five of the case study classes, periodic testing of pupil learning of reading skills is required by the principal or is an integral part of the reading program. In all these classes, teachers administer the tests as di-

rected. Those who value the test information make use of the results, whereas the others simply record pupil responses and deposit the results with the principal or reading supervisor. Mandated testing has at least two observable consequences for the reading program. First, time required for testing usurps time that might be used for reading instruction. For example, in the Chicago class, mastery testing occurs in lieu of instruction once every two or three weeks. Second, the occurrence of mandated testing has consequences for the selection and use of curricular tasks; this effect appears to be more obvious for intermediate than primary grade classes.

The effect of the ability and interest composition of the class on the form of its reading instruction is difficult to disentangle from teacher and other influences during a single case study year. Fortunately, we had observed the instructional program of the Chicago teacher the year before the current one with a first grade class from a low income area where children scored very low on indices of reading readiness. The teacher found the Distar reading program to be successful in helping her pupils learn to read. Thus, when she transferred to an integrated, middle income school, as previously mentioned, she requested that the principal secure Distar materials. However, during the first month of instruction, she realized that the program was inappropriate for her group of fast learners because most already knew what the program was introducing. Therefore, she shifted to an available basal series because she felt that these pupils were ready for contextual reading. Soon after, the middle group was transferred to the basal materials, partly at their request and partly because she judged them to be ready for contextual reading. And, finally, the week before the Christmas break, members of the slower paced reading group were allowed to read from the basal

as well as from the Distar materials.

In addition to this direct evidence, indirect evidence for the influence of class aptitude composition on reading program comes from the different beliefs that teachers hold concerning what constitutes successful reading instruction for slower learning versus faster learning children, as was described earlier in the paper.

Finally, the nature of instructional materials influences classroom reading instruction. The way in which mandated instructional materials modify the reading program of the Albany teacher committed to an unstructured reading approach has already been mentioned; the resulting program is a compromise between what she believes in and what the principal desires.

In an even more direct case, materials constrain what goes on during instruction. For example, when the Chicago teacher used the Distar materials at the beginning of the year, the length of small group instructional time was determined by the Distar script and accordingly each group received a similar amount of instructional time. As directed by the Distar guide, the teacher spoke to the group as a whole and pupils responded for the most part in unison. By contrast, since the teacher has shifted to the basal materials, the length of small group instructional time is a function of how long it takes each pupil to read a section orally. Because the slower-paced groups have less than half the members of the faster-paced groups, the slower-paced groups receive less than half the amount of small group instructional time. Similarly, the nature of the materials changes the nature of the group interaction: with Distar the teacher talked directly to the group followed by group unison response; by contrast, with the basal material, teacher directions and prompts are directed to a pupil while the pupil is reading

orally, while the remainder of the group is "following along" silently.

Summary. Despite the exploratory nature of the study at this stage, it can be seen that several provocative findings have emerged. For instance, it has been interesting to observe that teachers do indeed follow administrative mandates, even those which conflict with their beliefs about how instruction should be managed. But in spite of administrative constraints, teachers typically find room to use instructional procedures consistent with their beliefs. Whether the resulting hybrids, produced when a teacher is in basic disagreement with administrative policy, have implications for pupil outcomes is a question that we have not investigated during the current year. We suspect that consistency between teacher beliefs and administrative policy leads to greater teacher and pupil satisfaction and learning than inconsistency; we intend to test this hypothesis next year as well as several others which have been suggested by our tentative findings.

WHERE DO WE GO FROM HERE?

During the remainder of the Spring, we will use the current group of teachers with whom we are familiar to revise and validate the Proposition Sort and to refine our system for describing what occurs during reading instruction. The term "pilot year" presumes that full scale investigation is to follow. Although we feel that we have uncovered the parameters of the phenomenon during this pilot year, we are not sure that the evidence upon which we base our current convictions is convincing to others. Thus, we plan to select a limited set of contrast cases to test the generalizability of our conclusions.

Finding appropriate test cases for next year's replicatory investigation will not be easy. We will begin by selecting target schools which are defined

both by SES (as an index for class composition) and by mandated materials (as an index for institutional constraints). Only one age group will be studied because belief systems seem to be related to the stage of reading acquisition; we have selected the primary rather than the intermediate level because the greater temporal emphasis on reading instruction should make it easier for us to detect effects when such exist.

Elementary schools will be identified which are roughly comparable in size but which vary in SES and administrative treatment of primary level reading materials. The revised Proposition Sort will be administered to a large number of first and second grade teachers and, from this array, contrastive teacher cases who differ in interesting respects in their pattern of beliefs toward reading instruction will be selected. Age, sex, and years of experience will also be considered in this matching.

Based on the relationships between beliefs, practice, and institutional constraints that have been observed this year, we will predict how each pair of teachers will differ in practice within comparable schools and across schools. For example, given two teachers who differ in preferred instructional materials, we will predict that they will select materials in accord with their beliefs when such are available and permitted. If, however, the latter conditions do not hold, we predict that available or mandated materials will be used, that they will be supplemented with preferred materials when the teacher's conformity score is low, and that their instruction accompanying the materials will reflect their beliefs. As a second example, given two teachers who differ in the pupils they prefer, we predict that they will allocate instructional time so that preferred students are favored in one or more of the following respects: more total work time, instruction

during prime time, work in smaller supervised groups; daily instruction, and instruction by the teacher not the assistant. As a third example, given a teacher who holds different instructional beliefs for subgroups within his or her class vs. one who believes in using the same reading approach for all pupils, we predict that they will differ accordingly in the methods and materials they use, unless constraining conditions interfere. In this manner, the next year of the study will be a "confirmation" year in which the hypotheses generated during the exploratory stages of the study will be tested.

SUMMARY

The Conceptions of Reading Project is considering the role of teacher beliefs and predispositions within the classroom. As such, it has been found to be a complex task which has required adjustment of both conceptualization and methodology during the exploratory year. However, because it is the teacher in the classroom who mediates the priorities and means of the instruction and determines which pupils will receive which resources, it is extremely important to understand how these decisions are made and how teacher beliefs and predispositions influence these decisions.

References

- Barr, Rebecca and Dreeben, Robert. Instruction in Classrooms. Review of Research in Education 5. Itasca, Illinois: E.E. Peacock Publishers, Inc., in press.
- Belli, Gabriella; Blom, Gaston and Reiser, Ann. Teacher's concerns and conceptions of reading and teaching of reading: a literature review. Occasional paper, Institute for Research on Teaching, Michigan State University, March, 1977.
- Bond, Guy and Dykstra, Robert. The cooperative research program in first grade reading instruction. Reading Research Quarterly, 1967, 2, (4), 4-126.
- Brophy, Jere and Good, Thomas. Teacher-student relationships: causes and consequences. New York: Holt, Rinehart and Winston, 1974.
- Carroll, John B. and Chall, Jeanne S. Toward a Literate Society: The Report of the Committee on Reading of the National Academy of Education. New York: McGraw-Hill, 1975.
- Early, Margaret. Improving research in reading and writing, Phi Delta Kappan, January, 1976, 57 (5), 298-301.
- Johnston, Michelle. A descriptive analysis of teacher's conceptions of reading using a variation of the Kelly role concept repertory test. Unpublished doctoral dissertation, Michigan State University, 1977.
- Kelly, George. The Psychology of Personal Constructs, Vol. I. New York: W.W. Norton, 1955. Chapter 5.