DOCUMENT RESUME

ED 319 534 PS 018 839

AUTHOR Smith, Miriam W.; McCabe, Allyssa
TITLE Socrates versus the Drill Sergeant: Dimensions of Variation in Preschool Teachers' Discourse.
PUB DATE 90
NOTE 30p.; A version of this paper was presented at the American Educational Research Association Annual Meeting (Boston, MA, April 16-20, 1990).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *Classroom Communication; Classroom Research; *Classroom Techniques; Group Instruction; Play; Preschool Education; *Preschool Teachers; *Questioning Techniques; *Story Reading; Teacher Behavior
IDENTIFIERS Transition Time

ABSTRACT

This study of dimensions of variation in preschool teachers' classroom talk involved 10 white, middle-class, experienced teachers in developmental classes. Audio recordings and observations were made of 30 minutes of free play time, 5 minutes of transition time, and 25 minutes of group time. For 8 of the teachers, group time included 10 minutes of story reading, which was analyzed separately. Recordings were complemented by field notes. Transcripts of recordings were coded for eight types of questions, six types of controlling strategies, and five other speech acts. Time of day had a significant effect on the variables. Principal components analyses of the variables for free play, transition, group time, and story reading consistently produced two components that maximally differentiated teachers from each other: (1) a tendency to solicit, clarify, and echo children's responses; and (2) a controlling tendency involving direct and indirect commands and controlling questions. These two dimensions of variation are discussed in relation to Nelson's (1973) positive cognitive and negative social parental discourse styles. For story reading, the 2 dimensions are further related to Dickinson and Keebler's (1989) analysis of interactive versus performatory book reading styles. (Author/RH)

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

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☒ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy

ED319534

Socrates versus the drill sergeant: Dimensions of variation in preschool teachers' discourse

Miriam W. Smith

Clark University

Allyssa McCabe

Harvard Graduate School of Education

and

Tufts University

RUNNING HEAD: DIMENSIONS OF VARIATION

Correspondence:

Miriam W. Smith
Education Department
Clark University
950 Main St.
Worcester, MA. 01610
(508) 793-7221

A version of this paper was presented at the Annual Meeting of the American Educational Research Association, April 18, 1990.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Allyssa McCabe
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

PS 018839

Abstract

Ten white middle-class teachers with a minimum of four years teaching experience were observed and audio recorded in their developmental classrooms in four different preschool settings. Recordings and observations were made of 30 minutes of free play time, 5 minutes of transition time, and 25 minutes of group time. For eight of these teachers, group time included approximately ten minutes of story reading, which was analyzed separately due to specific interest in this activity. Recordings were complemented by field notes, and were subsequently transcribed. Transcripts were reliably coded for 8 types of questions. 6 types of controlling strategies, and 5 other speech acts. Time of day had a significant overall effect on these variables. Principal components analyses of these variables for free play, transition, group time, and story reading consistently produced two components that maximally differentiated teachers from each other: (1) a tendency to solicit children's responses as well as to clarify and echo their responses, and (2) a controlling tendency comprised of direct and indirect commands and controlling questions. These two dimensions of variation are discussed in relation to Nelson's (1973) positive cognitive and negative social parental discourse styles; for story reading, these dimensions are further related to Dickinson and Keebler's (1989) analysis of interactive versus performatory book reading styles. The positive cognitive style, in the case of parents, has been associated with earlier acquisition of vocabulary and longer sentences.

Socrates versus the Drill Sergeant:
Dimensions of Variation In Preschool Teachers' Discourse

As has repeatedly been demonstrated, teachers do a lot of talking in classrooms (Cazden, 1988; Bloom, 1956). Such talk has been characterized in a variety of ways. Teachers ask a lot of rhetorical questions (Cazden, 1988; Dillon, 1984, 1988). They spend a lot of time in classroom management (Stubbs, 1976). Teacher talk is not as cognitively engaging as talk between children and their parents at home (Tizard & Hughes, 1984). Teacher talk varies by context with the most extensive conversations occurring when teachers are stationary (Dickinson, in press; Tizard & Hughes, 1984). Of course there is also individual variation among teachers in the quality of talk and that is the point we want to develop here.

Previous examinations of stylistic differences in teachers' talk document a way of speaking that fosters learned helplessness versus one that encourages mastery styles of learning in children (Dweck, 1975; Dweck & Eliot, 1983). Another characterization categorizes teachers as being authoritarian versus authoritative (Baumrind, 1972). Such research has concerned teachers of school-aged children.

There has been some preliminary work on conversational dynamics in preschool classrooms. Preschool teachers adopt either a performance or an interactive style while reading to children

(Dickinson & Keebler, 1989). Furthermore, preschool teachers differ in the extent to which they adopt a responsive stance which encourages extended conversation with children (Dickinson, in press).

However, in general, there has been relatively little examination of stylistic differences in overall teacher talk in the preschool setting. Yet there are important developments in child language during this period and these have been studied with respect to maternal input (see Berko Gleason, 1989 for review). Along a continuum, mothers differ from each other in the extent to which they exhibit a positive-cognitive style of speaking versus a negative-social style (Nelson, 1973; Snow & Goldfield, 1983). The hallmark of the positive-cognitive style is asking many questions about topics that the child has focused upon. The hallmark of the negative-social style is giving children commands regarding their behavior. Compared to children whose mothers engage frequently in the negative-social style, children whose mothers engage frequently in the positive-cognitive style develop larger vocabularies, earlier use of genuinely complex phrases, and more intelligible prosody (Bretherton, McNew, Snyder, & Bates, 1983).

Our goal in this project was to document dimensions of variation among preschool teachers in terms of their overall classroom talk. Taking the research on teachers of school-aged children and on parents of younger children together, we anticipate finding a dimension of variation among preschool teachers that

would exemplify the kind of authoritative, positive-cognitive language that has been shown to facilitate children's language development during the preschool years and their style of learning at an older age. Similarly, we also anticipate finding a dimension that would exemplify the kind of authoritarian, negative-social style. In short, we expect to find teachers differing from each other in the extent to which they play the role of Socrates versus that of the drill sargeant.

Method.

Subjects. The sample for this research consisted of preschool teachers currently working with children in developmental preschool programs (as defined by Bredekamp, 1987) in the greater Boston area. Due to the preliminary nature of this research, it was important to control for as many of the possible variations between teachers as possible. At the same time, a representative sample was desired for the purposes of increasing the generalizability of results. Thus, the sample was limited to female teachers who were Office for Children qualified Head Teachers with a minimum of four years of preschool teaching experience. The sample was restricted to females because of possible gender differences in language style that might complicate the issues of the study (see Haas, 1979 for review).

The subjects for this investigation were eleven white female preschool teachers from four preschools in the greater Boston area. Teachers were contacted through the directors or research

coordinators of each of the schools. The mean number of years of teaching experience was 7.3 years (SD=3.4). One subject was dropped in the final analyses because the recorders did not record complete data for her.

Procedure. After teachers consented to participate in the research, they were contacted and a time for the observation and recording was arranged. Each teacher was recorded and observed (simultaneously) for a total of one hour on one day. Two tape recorders were placed in the classroom and the investigator acted as the observer. Extensive field notes were gathered through this procedure, and were used to aid the transcription process

A typical day in a preschool classroom consists of a number of distinct activity periods. It was suspected that the behaviors exhibited by both children and teachers vary with these different times. Thus, it was arranged so that the hour was divided into three sections; 30 minutes of free play (or open activity time), 25 minutes of group time, and a 5 minute transition period from activities to group. Within group time,, story reading was recorded in the eight classrooms in which it occurred, and was also analyzed separately. The average length of story reading was 7.4 minutes.

After the observations and recordings were complete, verbatim transcripts were made from the data using the CHAT Transcription Coding System of the Child Language Data Exchange System (MacWhinney and Snow, 1985). The transcripts were then coded with the original Question and Control Statement Coding System designed

for this investigation. Reliability was estimated using two trained coders. Coders were trained by the experimenter on 10% of the data. After training, 10% more of the data were coded. Disagreements were resolved through discussion of specific cases. Overall reliability was estimated at 89%. Reliability per category is included Appendix 1.

Data Coding System. Although researchers have sought to separately categorize the types of questions and control statements found in classrooms, these variables have not frequently been investigated simultaneously. The present research systematically looked at actual examples of preschool teacher's language with these variables in mind. The instrument designed for this investigation represents the synthesis of a number of different taxonomies that exist for categorizing questions and control statements. (See Appendix 1 for reliability per category.)

The coding system is divided into four parts; questions, control strategies, other speech acts, and direct quotes from written texts (for story reading only). The questions are divided into five different types. Cognitive-memory questions require the child to recall facts and information. This category includes yes/no questions, and questions to which the teacher knows the correct answer. Convergent questions require the child to explore different options before generating a correct answer. Multiple choice questions fall into this category. Divergent questions have no correct answer. Instead, they require the child to consider

alternatives and brainstorm for solutions. Evaluative questions ask the child to consider the motivations and feelings associated with certain actions. Clarifying questions are asked by a teacher in response to something unclear said by a child.

The second part of the coding system addresses the control strategies used by teachers. Two types of commands were coded: direct commands ("put that away") and indirect commands ("please come over here"). Commands using such strategies as politeness markers or passive phrasing were considered indirect. Controlling questions are designed to gain the attention or elicit the cooperation of children; they are often rhetorical in nature ("could you put those away please?"). Corrections were also included in this section and were separated into corrections of fact ("that's not a bug, it's a spider") and corrections of behavior ("you're sitting in the wrong spot").

A number of other speech act codes were used to help assess language that was not questioning or controlling. These codes (from Dickinson, in press) were: statements that extend dialogue, statements that initiate dialogue, direct echoing of previous remarks, remarks that show attentiveness, and remarks that serve no function.

Results and Discussion.

General Description. Overall, as is shown in Table 1, preschool teachers most often engaged in talk which extended their own topics of conversation, regardless of the type of activity that

the class was engaged in. What Cazden (1988) documented for school-aged children was also true for preschool children, they were asked many cognitive-memory questions to which the teacher knew the answer. Three control variables were also used quite frequently, namely controlling questions, direct and indirect commands.

TABLE 1 ABOUT HERE

The most important finding with respect to time of day was that transition times were characterized by a higher proportion of control language than during any other time of the day. 78% of all teacher talk during transition times was comprised of controlling questions, direct and indirect commands, and corrections of behavior, compared to 44% for free play times, and 60% for meeting times.

Dimensions o Variation. To test the hypothesis that there were predictable dimensions of variation in preschool teacher talk, principal components analyses were performed for each of the three times of day as well as for story reading, a substantial component of meeting times in eight of the ten classrooms. As is shown in Table 2, ten of twelve variables consistently loaded onto one component or the other (see Appendix 2 for explanation of the two variables that were not consistent). The first component can be characterized as a cognitively engaging dimension of teacher talk, as predicted. Such variables were: divergent questions, clarifying questions that echo children's talk, direct echoes,

cognitive-memory questions, and convergent questions. A different set of variables consistently loaded onto a dimension best characterized as controlling talk: direct and indirect commands, controlling questions, demonstrations of attention, and statements teachers made extending their own topics of conversation.

TABLE 2 ABOUT HERE

Examples of Contrastive Dimensions. Examples of these dimensions are worth a thousand statistics. Consider the following cognitively engaging sample from meeting time; where the teacher talks extensively about the topic of interest to a number of children, namely seating management:

TEACH: now [!] Mary/ Allie it's a listening time (INDC)/ Mary you seem to have a bit of a sad face. (STI)

CHILD: (be)cause she wants to sit next to Kim.

TEACH: Mary wants to sit next to Kim. (ECH)

CHILD: and I do too.

TEACH: Allie wants to sit next to Kim. (ECH)

CHILD: you are. you're sitting right here.

TEACH: that's right. (STE)

CHILD: she wants to sit next to Kim.

TEACH: Harold it's a listening time. (INDC) Mary?

TEACH: now. Mary wants to sit next to Kim, Allie wants to sit next to Kim, and June it looks like you want to sit next to Kim. (STE)

CHILD: she is.

TEACH: raise your hand if you have an idea how Mary can maybe be maybe feel a little bit better. (DIRC)

TEACH: oh lots of children have ideas to help you Mary. (STE)

TEACH: Harold, do you have an idea that could help Mary feel less sad? (CMQ)

CHILD: well, they could sit across from each other.

TEACH: so you're saying that Mary could sit near Kim. (STE)

CHILD: yeah. near and across.

TEACH: near and across.(ECH) so she could be like very near to Kim but not right next to her.(STE)

TEACH: okay that's one possible solution.(STE)

TEACH: David, how can we make Mary feel a little less sad about not getting a turn to sit next to Kim?(LDQ)

CHILD: June could move.

TEACH: June could move. (ECH) so that's the second solution.(STE)

TEACH: so we have Mary could sit across from and near Kim and number two June could move.(STE)

The teacher and children stay on this topic for fifty more turns and the entire sequence takes approximately fifteen minutes of the full group meeting time.

In the following example, a different teacher deals with the same issue, seating management, in a directly controlling manner:

TEACH: you know what? (CONC) I've decided it's too hard for you

two to be together so I'm going to have Sean sit on my lap. (INDC) right there or the blue bench, it's your choice (DIRC).

CHILD: I want to sit in your lap.

TEACH: well I brought a new song today. (STI) I thought we could learn. (STE) Because on Sunday/(STE)

CHILD: I can't see.

TEACH: would you like to sit right next to Ellen? (CONQ)

CHILD: no.

TEACH: well we can't go back to where you were. (DIRC)

CHILD: I'm gonna sit right here.

TEACH: okay, that's a good choice. (STE) On Sunday it was a new holiday. (STI) would anyone like to raise their hand and tell me what holiday started? (CONQ) Ellen?

CHILD: uh, Hannu/

CHILD: Christmas!

TEACH: people need to raise their hands, like Ellen. (INDC)

In this process, note that the teacher switches topics rapidly and frequently even within the brief segment.

Here are two examples from story reading times. The first demonstrates a cognitively engaging style of discourse, similar to Dickinson and Keebler's (1989) interactive style of story-book reading.

Title: I Want To Be An Astronaut

TEACH: I want to be an astronaut. (TXT)

CHILD: I want to be an astronaut. (ECH)

TEACH: a member of the crew, and fly on the shuttle into outer space.

CHILD: there.

TEACH: think they're inside our shuttle? (CMQ)

TEACH: here is a part of the picture of the planet earth. (STE) here's part of it and it's blasting off into space. (STE)

CHILD: I have that one.

TEACH: do you have that book at home? (CMQ)

CHILD: [shakes head]

TEACH: no? (CLQ) maybe we could get it out of the library. (STE)

TEACH: I want to be up there on a space mission/ (TXT)

CHILD: now they're up there, aren't they?

TEACH: now they're up there. (ECH)

TEACH: and have "ready to eat" meals. (TXT)

TEACH: what does it look like they're eating? (LDQ) what do you think they're eating? (LDQ) what do you think these might be? (LDQ)

ALL: peas, cucumbers, coo coo.

TEACH: and sleep in zero gravity. (TXT)

CHILD: he's upside down!

TEACH: one of them is upside down. (ECH)

CHILD: why upside down?

EACH: remember yesterday when we were talking about there's something about our planet Earth that we live on called

gravity? (CMQ) it's what keeps us from flying away. (STE) when you drop something it lands right on the floor. (STE) well, up in outer space, there's not any gravity so things just kind of float around and things turn upside down and people turn upside down. (STE) sort of like they're floating. (STE)

CHILD: I don't turn upside down.

TEACH: not on Earth, you don't turn upside down. (CORF)

CHILD: not me.

TEACH: on Earth we have gravity. (STE)

In the second example, the teacher limits children's involvement and focuses mainly on behavior management. At the same time, she insists on reading the story herself, squelching the emerging reading of her students. This pattern of interaction has been characterized as performatory by Dickinson and Keebler (1989).

Title: In A Dark, Dark, Wood

TEACH: the title. (STI) what's a title? (CMQ)

ALL: the name

TEACH: exactly.(STE) the title of the story is "In a Dark Dark Wood". (STI)

CHILD: I have this one.

TEACH: my voice is still feeling rather loud so I'm gonna turn it down. (STE) make sure your ears (DIRC)/ you might wanna warm them a second (STE)/ make sure they're really

listening cause I'm gonna put my voice down. (DIRC)

CHILD: my listener ears are turned on.

CHILD: I turned my listening ears on too.

TEACH: for the rest of group my voice is going to be very soft so here we go. (STE)

TEACH: and it's my turn right now. (INDC)

%act: story reading.

TEACH: (pp) in a dark dark wood. (TXT)

TEACH: (pp) there was a dark dark path. (TXT)

TEACH: (pp) and up that dark dark path. (TXT)

TEACH: (ppp) there was a dark dark house. (TXT)

TEACH: (pppp) and in that dark dark house there was a dark dark st/ what d'ya/ stair (with children) (TXT)/ good reading guys. (STE)

CHILD: it's a rhyming book.

TEACH: mmm some of these big books are rhyming aren't they? (CMQ) but this isn't, this is one that repeats itself a lot (CORF). you're right, dark dark dark dark dark (STE). you hear that often and often a lot of repetition. (STE)

CHILD: and up that dark dark stair.

TEACH: and up that dark dark stair (TXT)/ you know what guys? (CONQ) let's make a deal, you'll get to read it after group. (STE) I'll give it to whoever would like to read it over at group area but let me read it this time. (INDC) it's half the fun of being a teacher. (STE) let

me have the chance. (INDC)

Consistency. The question remains as to what extent preschool teachers consistently use cognitively engaging versus controlling talk. As is shown in Table 3, most teachers adapt their speaking style to suit the particular occasion. For example, in one classroom, a teacher who was strongly positive-cognitive during meeting time and story reading was very controlling during free play time. This disparity resulted from the particular activity that she was orchestrating during the free play time, namely taping up a very large cardboard box with a group of children (who mostly wanted to climb into it). However, the two teachers who were consistent were consistently controlling.

TABLE 3 ABOUT HERE

Two Caveats. While it was not an issue in the present study, the dimensions of variation in preschool teachers' discourse may vary in teachers from different cultural backgrounds (see Delpit 1986, 1988 for a discussion of this issue). Furthermore, we have contrasted a cognitively engaging with a controlling style of preschool teachers' talk to children. In a way, this could be misleading because teachers who are cognitively engaging children are also controlling them, albeit in an indirect manner. This manner of speaking to young children is more likely to result in language development as well as classroom harmony.

In summary, in the present study we combined approaches to classroom discourse in elementary school settings with approaches

used to investigate mothers' speech to very young children. We hypothesized that there are regular dimensions of variation in preschool teachers' speech to young children, similar to the continuum of variation that has been established for maternal input to very young children. One end of this continuum is associated with optimal language development. As hypothesized, preschool teachers' speech to young children differed in the extent to which it engaged children cognitively, in a way likely to facilitate further language development. Another dimension of variation in preschool classroom discourse reflects an agenda of control and concern for children's behavior. Most teachers adapted their pattern of discourse to suit the occasion, with the exception of transition times when teachers were most likely to be controlling. Only two of the ten teachers were consistent across all times of the day, and these teachers always spoke in a directly controlling manner. In short, most teachers find a way to play Socrates instead of the drill sargeant, except during transition times.

References

Baumrind, D. (1972). From each according to her ability. School Review, 80, 161-197.

Bloom, B. S., ed. (1956). Taxonomy of education objectives: Cognitive domain. New York: Longman.

Bredekamp, S. (Ed.), (1987). Developmentally appropriate practice in early childhood programs serving children from birth through age 8. Washington D.C.: National Association for the Education of Young Children.

Bretherton, I., McNew, S., Snyder, L., & Bates, E. (1983). Individual differences at 20 months: Analytic and holistic strategies in language acquisition. Journal of Child Language, 10(2), 293-320.

Cazden, C. C. (1988). Classroom discourse. New York: Heinemann.

Delpit, L.D. (1986). Skills and other dilemmas of a progressive black educator. Harvard Educational Review, 56(4), 379-385.

Delpit, L.D. (1988). The silenced dialogue: Power and pedagogy in educating other people's children. Harvard Educational Review, 58(3), 280-298.

Dickinson, D.K. (in press). Teacher agenda and setting: Constraints on conversation in preschools. In A. McCabe & C. Peterson (Eds.), Developing narrative structure, New Jersey: Lawrence Erlbaum Associates.

Dickinson, D.K. & Keebler, R. (1989). Variation in preschool teachers' styles of reading books. Discourse Processes.

Dillon, J.T. (1984). Research on questioning and discussion. Educational Leadership, 42(3), 50-56.

Dillon, J.T. (1988). Questioning and teaching: A manual of practice. New York: Teacher's College Press.

Dweck, C. S. (1975). The role of expectations and attributions in the alleviation of learned helplessness. Journal of Personality and Social Psychology, 31(4), 674-685.

Dweck, C. S. & Elliot, E. S. (1983). Achievement motivation. In E. M. Hetherington (Ed.), Handbook of Child Psychology (pp. 671-681). New York: John Riley & Sons.

Gleason, J. Berko (1989). The development of language. Columbus, OH: Charles E. Merril Publishing Co.

Haas. A. (1979). Male and female spoken language differences: Stereotypes and evidence. Psychological Bulletin, 86, 616-626.

MacWhinney, B. & Snow, C. (1985). Child Language Data Exchange System: CHAT and CLAN manuals. Pittsburgh, PA.:Carnegie Mellon University.

Nelson, K. (1973). Structure and strategy in learning to talk. Monographs of the Society for Research in Child Development, 38(1,2).

Snow, C.E. (1983). Literacy and language: Relationships during the preschool years. Harvard Educational Review, 53, 165-189.

Snow, C.E. & Ferguson, C.A. (Eds.), (1977). Talking to children.

Cambridge: Cambridge University Press.

Snow, C.E. & Goldfield, B.A. (1983). Turn the page please: situation specific language acquisition. Journal of Child Language, 10, 551-570.

Stubbs, M. (1976). Language, schools, and classrooms. London: Methuen & Co.

Tizard, B., & Hughes, M. (1984). Young children learning. Cambridge, MA.: Harvard University Press.

Appendix 1

Coding reliability per category:

CORB	100%
CORF	100%
ECH	100%
NOF	100%
STI	100%
STE	94.89%
LCQ	91.67%
CLQE	85.71%
CONQ	83.72%
LDQ	83.33%
DIRC	81.82%
CMQ	73.68%
CLQ	71.43%
EVQ	66.67%
INDC	65.28%
SAT	50%

Appendix 2

Clarifying questions and statements introducing topics.

The issue of simple clarifying questions and statements introducing new topics is somewhat more complicated than for other coding categories. Clarifying questions were genuinely cognitively engaging during meeting times, especially during story reading. An example of this was in response to a child's question about giraffes:

CHILD: what those things are that they need to get taller than their necks?

TEACH: what do you mean?

CHILD: like when they put those things at Christmas on the telephone poles.

TEACH: oh, I see.

Teachers wanted to know what children were saying at these times. However, during free play, such questions became rhetorical and more controlling. The following example is from an exchange in which the teacher has entered an area where children are arguing:

%act: children arguing about blocks and vehicles

CHILD: all vehicles, all vehicles

TEACH: what's happening? (CLQ)

CHILD: nothing, we're making a road.

TEACH: so you're using up most of the pieces, huh? (CLQ)

CHILD: [continues building, no response to teacher]

Similarly, statements initiating topics were cognitively engaging during free play time when teachers circulated around their rooms and described the activities of the children they approached. For example, one teacher commented to a child " we're looking at some pictures here. Cheri was doing some cutting." This teacher introduced a few topics and eventually got the child interested in joining the activity. However, during meeting times, statements initiating topics were used to regain the floor, as in the meeting time example where the teacher initiated a number of topics in a short amount of time, moving rapidly from behavior management to a song to behavior management to a new holiday to behavior management.

Appendix 3

Coding Manual with examples, see attached.

CATEGORIES OF QUESTIONS AND CONTROL STATEMENTS

QUESTION CATEGORIES (From Cunningham, 1987, Gallagher, 1963, Bloom, 1956). All examples from data collected by Miriam W. Smith

1. CMQ Cognitive-memory or factual recall questions.
   a. do you know what letter this is?
   b. do you want this to be part of the train track?

Function: Recall of facts, tapping rote memory. Includes yes/no questions and known answer questions.

2. LCQ Low-level convergent questions.
   a. I'm wondering where you're going to build the house?
   b. what's that chimney gonna do?

Function: Selection of relevant facts, attributes, organizing information, encouraging reasoning, exploring cause and effect, finding important elements, components, and evidence.

(Note: HCQ or high-level convergent questions did not occur frequently enough to include in analysis.)

3. LDQ Low-level divergent questions.
   a. how could you make that part stay up?
   b. what will happen if you add water?

Function: Considering alternatives, synthesizing different elements, beginning problem solving, brainstorming, encouraging elaboration. speculation and prediction. Demonstrating respect for students' ideas.

(Note: HDQ or high-level divergent questions did not occur and were not included in analyses.)

4. EQ Evaluative questions.
   a. how's the bears in the cave?
   b. do you think it will be fun?

Function: Allowing respondent to evaluate feelings, motives, and effects of actions.

5. CLQ Clarifying questions.
   a. you wanna close it this way?
   b. her elbow does that?

Function: To clarify or understand what somewhat has said.

6. CLQE Clarifying questions that echo previous remark.
   a. Child: I celebrate Easter.
      Teacher: you celebrate Easter?
   b. Child: no it isn't.
      Teacher: no it isn't?

Function: Clarification of previous remark. encouraging child to continue speaking.

CONTROL STRATEGIES
All examples from data collected by Miriam Smith.

1. DIRC Direct commands.
   a. you need to find a new spot to play.
   b. color it all grey.

2. INDC Indirect commands.
   a. I'm sorry but you'll need to put it away.
   b. I'm gonna ask you not to bang the crayon because the crayon might break.

3. CONQ Controlling questions.
   a. can you put them all back in there?
   b. is this hard not to play in?

4. CORF Corrections of fact.
   a. no, those are not triangles.
   b. you weren't here that day.

5. CORB Corrections of behavior.
   a. I'm calling on children who have their hand up.
   b. you've had a turn with that one.

OTHER CONVERSATIONAL STRATEGIES (from Dickinson, in press)
All examples from data collected by Miriam W. Smith

1. STE Statements to extend discourse.
   a. there are pictures of maps on them.
   b. that's a nice safe place for your baby.

2. STI Statements introducing a topic.
   a. I'm looking at my song list to see which one you guys are gonna read today.
   b. on Sunday it was a new holiday.

3. ECH Direct echoing of previous remarks, not phrased as a question.
   a. Child: I went on my swingset.
      Teacher: You went on your swingset.
   b. Child: I can't dance in the climber.
      Teacher: no, can't dance in the climber.

4. SAT Showing attentiveness.
   a. mm hmm.
   b. I see.

5. NOF Comments that serve no function, sound effects.
   a. eek!
   b. hmmm...

TABLE 1

MEANS AND STANDARD DEVIATIONS

	AGGREGATED		MEETINGS		FREE PLAY		TRANSITIONS		STORIES*	
VAR	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD	MEAN	SD
STE	31.13	21.25	38.30	19.89	45.10	15.42	10.00	7.22	13.37	6.27
CMQ	8.66	8.25	8.50	6.57	15.60	8.14	1.90	2.37	3.50	4.14
LCQ	2.23	3.37	3.20	4.34	3.10	3.34	.40	.96	.75	1.16
LDQ	1.20	2.05	.50	.97	3.00	2.66	.10	.31	.50	1.41
EVQ	.53	1.04	.40	.96	1.00	1.41	.20	.42	NA	NA
CONQ	6.60	3.78	7.60	4.32	7.40	3.74	4.80	2.82	2.75	2.43
CLQ	2.33	3.24	1.70	2.16	5.00	4.00	.30	.48	.50	.75
CLQE	2.73	3.59	1.70	2.00	6.30	3.86	.20	.42	.50	.75**
DIRC	6.60	5.19	9.40	5.03	7.30	5.59	3.10	2.72	2.25	1.90
INDC	7.63	5.24	9.70	5.98	8.80	5.28	4.40	2.67	2.87	3.09
CORF	.43	.62	.70	.67	.40	.69	.20	.42	NA	NA
CORB	.56	1.86	.60	.84	1.10	3.14	.00	.00	NA	NA
STI	2.60	3.33	3.30	1.82	4.00	4.92	.50	.85	.50	.53
SAT	1.20	2.65	.30	.48	3.10	4.01	.20	.63	1.00	.92
ECH	3.43	4.89	5.50	6.91	4.20	3.85	.60	.51	.25	.46
NOF	.80	1.24	.90	1.19	1.00	1.33	.50	1.26	.87	.64

Notes:

*N=8: N=10 for all other conditions. Story reading was a subset of meeting times.

**CLQEs were significantly more frequent during free play times than during meeting times ($F(1,18)=9.14$, $p<.01$). Other variables did not differ significantly between these two conditions.

TABLE 2

PRINCIPAL COMPONENTS ANALYSES

	MEETINGS		FREE PLAY		TRANSITION		STORY READING	
VAR	COMP1	COMP2	COMP1	COMP2	COMP1	COMP2	COMP1	COMP2
LDQ	.896	.027	.980	.009	NA	NA	.912	.157
CLQE	.901	-.077	.668	-.171	NA	NA	.783	.264
ECH	.911	-.064	.721	-.076	NA	NA	.016	-.917
CMQ	.653	.277	.073	.100	.030	-.813	-.027	.076
LCQ	.056	.277	.854	-.117	NA	NA	-.076	.066
CLQ	.761	.153	.002	.896	NA	NA	.863	-.415
STI	-.081	.667	.714	-.051	NA	NA	.347	.781
CONG	-.172	.679	.279	.209	.281	.849	-.459	.651
SAT	.148	.011	-.146	.937	NA	NA	-.624	.038
STE	.282	.716	.597	.634	.766	.507	.112	.781
DIRC	-.311	.757	-.089	.581	.859	.124	-.605	.748
INDC	.189	.858	-.405	.712	.693	-.014	-.343	.720

Note: N.A. indicates that the frequency for this category was < 5.

TABLE 3

QUALITATIVE ASSESSMENT OF TEACHER CONSISTENCY

TEACHER	MEETINGS	STORIES	FREE PLAY
1	Cog. Eng.	N/A	Control
2	Control	Control	Control
3	Control	Cog. Eng.	Cog. Eng.
4	Control	N/A	Cog. Eng.
5	Cog. Eng.	Cog. Eng.	Control
6	Control	Control	Cog. Eng.
7	Control	Cog. Eng.	Control
8	Control	Cog. Eng.	Cog. Eng.
9	Cog. Eng.	Control	Cog. Eng.
10	Control	Control	Control