

TEACHER'S INTERROGATIONS TO DEVELOPMENTALLY DISABLED  
AND NONDISABLED PRESCHOOL CHILDREN

by

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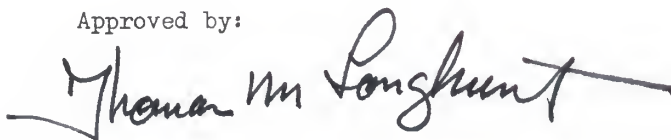
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Approved by:

A handwritten signature in dark ink, reading "Thomas M. Longhurst". The signature is written in a cursive style with a long horizontal stroke at the end.

Major Professor

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## INTRODUCTION

The majority of the literature and research related to interrogative development has addressed the topic of acquisition of questioning behavior in children's speech (Bellugi, 1965; Brown, 1968; McNeill, 1970; Slobin, 1971). Some investigators have developed various means of classifying adult questions (Holzman, 1971; Leach, 1972; Mittler, 1976), and others have analyzed the ability of children to answer questions (Ervin-Tripp, 1970; Hooper, 1971; Tyack, 1974). However, few investigators have analyzed the types of questions adults use in relationship to the ability of children to answer interrogative forms appropriately.

Toler and Bankson (1976) explored the efficacy and reliability of Leach's (1972) interrogative model as a means of studying parental questions and children's responses to various interrogative forms. This consideration is very important because in order for communication to be effective between an adult and child, the adult must monitor his communication to stay within the bounds of the comprehension abilities of the child.

In early work investigating adult speech modifications to low linguistic level or language deficient children Siegel (1967) reviewed a series of articles which indicated that normal adults in a variety of circumstances modified their verbal behavior as a function of whether they were interacting with a retarded child of low or relatively high linguistic level. It appeared from this review that adults not only discriminate between high and low linguistic level children, but also speak differently to these children.

The modification characteristics of mothers' speech to language learning normal children have been more extensively investigated.

The fact that mothers adjust their speech in accordance with children's differing linguistic levels has been documented (Broen, 1972; Longhurst and Stepanich, 1975; Phillips, 1973; Snow, 1972). Mothers' speech to children is simpler, more redundant and differs in vocabulary and syntax when compared to speech to another adult.

Although few investigations address the topic, speech modifications of adults in contact with children other than parents have become of interest. When considering the characteristics of teachers' speech to language learning children Granowsky and Krossner (1970) found that teachers used shorter sentences, more simple sentences and fragments, and fewer compound, complex, compound-complex, and elaborated sentences with children than in their speech to adults. Riedl (1972) found that teachers tended to use more questions and more common words in their speech to low linguistic level children.

There are several reasons why adult adjustment of interrogative forms is important. Moerk (1974) recognizes the possible importance of questions and answer interaction as an important tool in the course of language acquisition, as it helps the child to understand and exercise rules of transformation and Bee, Van Egeren, Streissguth, Nyman and Leckie (1969) add that questions provoke thought and verbal replies. Turnure (1976) investigated whether specific formats of interrogatives would be instrumental in inducing young children and mentally retarded children to generate verbal responses that function as effective verbal mediators in enhancing the acquisition and recall of paired associates and the results of that study supported his hypothesis. It would appear, that the manner and form of questions addressed to children of differing linguistic levels is important as interrogatives serve as an instructional tool and therefore should

be appropriate to the linguistic level of the child. Since interrogations have been recognized as an important interaction feature, the frequency of their occurrence also becomes noteworthy. Leach (1972) claimed that interrogations occurred at a high rate in adult-child interaction, and that this behavior could be reliably identified and recorded. Longhurst and Stepanich (1975) found that over 40 per cent of the utterances directed to one, two, and three year old children were questions. Thus, interrogation has been regarded as a prominent feature in language directed to children.

Cross (1977) did find that frequency of mothers use of Wh-questions decreased significantly with both children's age and mean length of utterance. Longhurst and Stepanich (1975) report that mothers of three year olds asked a higher percentage of information questions than did mothers of one and two year olds and that two year olds were asked the most questions for clarification. Many questions remain unanswered concerning adults use of specific interrogative forms to children of different linguistic levels. By analyzing the children's responses, we can judge whether the interrogatives are appropriate to the linguistic level of the child.

The purpose of the present investigation is to present a method of categorizing and analyzing interrogative interactions, stressing the function of the interrogatives. This method is one means of studying teacher questions and children's responses to various interrogative forms. The following specific questions were raised in this investigation:

- 1) What is the relative frequency of occurrence of the question types used by teachers during teacher-child interactions to children of different linguistic levels?

2) Are there specific patterns of interrogation adjustment which are typical when a teacher questions children of different linguistic levels?

3) What question types are responded to appropriately by the child subjects during the teacher-child interactions?

#### METHOD

##### Subjects

Eight children, four developmentally disabled and four non-disabled, served as child subjects for the investigation. Two teachers of a preschool for the developmentally disabled served as adult subjects. All subjects were native English speakers. Three males and one female, comprising the developmentally disabled group ranged in age from two years to four years seven months old, with a mean age of three years. In accordance with the children's age in this group, developmental language level was determined by performance on the Receptive-Expressive Emergent Language Inventory (Bzoch and League, 1971) or the Verbal Language Development Scale (Mecham, 1959). The developmentally disabled children scored language equivalents ranging from nine months to one year six months. Mean length of utterance scores for this group did not exceed 1.5 morphemes. The age range of the two males and two females comprising the non-disabled group was from two years to five years eight months, with a mean age of three years three months. From their performance on the Peabody Picture Vocabulary Test (Dunn, 1959) and judgements of the parents and teachers, they were found to be normal or slightly advanced in their language development. Mean length of utterance scores for this group ranged from 2.9 to 4.3 morphemes with a mean score of 3.6. Initially an attempt was made to obtain equivalent language



measures for both groups of children on some standardized test, however, a measure appropriate to both groups of children could not be established outside of obtaining language samples and figuring the childrens' mean length of utterance. The primary concern of the investigator was to establish that the children represented two distinct linguistic levels; the group of disabled children being language deficient and the nondisabled group being normal or slightly advanced in their language development. The two adult female subjects had educational backgrounds in early education and were full time teachers at the facility in which the data were collected. No attempt was made in the current investigation to control for sex of the subjects, nor for age and number of siblings.

#### Setting

All observations and recordings were collected at a preschool for developmentally disabled children. The facility consisted of an entrance vestibule, a small therapy room, a kitchen, and an open play area adjacent to tables used for pre-academic teaching.

#### Procedures

Effort was made to keep alterations of the environment of the preschool as minimal as possible. The four developmentally disabled children, and one child of the nondisabled group, were in regular attendance at the preschool. Prior to the beginning of the investigation written consent was obtained for the three additional nondisabled children to attend the preschool for a period of five weeks, four weeks during which observations and recordings were collected, and one prior week in order for the children to acquaint themselves with the teachers and setting. The teachers were informed that they would be participating in a study dealing with adult speech to children.

They were also told that the experimenter was interested in observing and recording the verbal interaction between themselves and the children. The specific details and purposes of the investigation were not disclosed to the teachers in order that they would perform as naturally as possible.

Teacher speech was monitored and recorded by the use of a FM telemetry system. A dual channel cassette tape recorder (Wollensak, Model 2516 AV) and two receivers (Vega, Model 58) were operated from the entrance vestibule of the preschool. The experimenter and teacher being observed wore vests equipped with concealed condenser microphones (Sony, ECM-16) and transmitters (Vega, Model 77). On one channel of the stereo system teacher speech was recorded. The teachers were not given special instructions, except that they were to continue with the daily routines as prior to the investigation. The experimenter observed the interactions and on the second channel, recorded contextual cues from the environment and any non-verbal responses from the children. For example, by observing the interactions of the teachers, the experimenter recorded to which child the teacher was speaking if it was not evident by her speech, any non-verbal cues the teacher was giving the child such as pointing, and any instances of non-verbal compliance by the child to teacher requests. Each of the teachers were observed and recorded one hour each day, four days a week, for four weeks. The observations were made during the first two hours of each three hour morning session of the preschool. The order in which the teachers were recorded was reversed each day. Once the hour long recording was begun it was not interrupted, regardless of the activities engaged in by the teacher. Those activities most often occurring included a morning greeting in which the children were interacted with

individually, freeplay with some teacher supervision, teaching of pre-academic skills, a discussion time during which all children were present, and snack time.

#### Protocol Preparation and Segmentation

At the conclusion of all the sessions a trained typist made a verbatim typewritten transcription of both the adults' and children's speech from channel 1 of the tape recordings. She used slightly modified instructions outlined by Siegel (1963). The experimenter then segmented the transcriptions into sentences while listening to the recordings and using procedures described by Miner (1969). Segmentation was performed according to "thought unit sentences" rather than the traditional "per breath utterances." These procedures were chosen for analysis because the interaction behaviors under investigation often were not self contained within "per breath unit" segmented utterances. An utterance was defined as an interrogation when it would have a question mark in normal English orthogrpahy.

While listening to the tape recordings, the experimenter made notations about context beside the utterance from channel 2 of the recordings. These included from which teacher it came, to whom it was addressed, and whether it was addressed to an individual or group. Also any additional contextual cues recorded by the experimenter were noted. Finally the corrected and segmented protocols were retyped and speech directed to children by teachers was typed on clean transcripts. Therefore, there were two sets of daily transcripts addressed to each child, one from each teacher. Reliability for transcript preparation and segmentation was established by having a second experienced typist retype and resegment four of the hour long tapes. Reliability for protocol preparation was 90, 93, 95 and 97 percent and for segmentation

89, 91, 94, and 95 percent.

### Performance Measures

When the final transcripts were typed, the experimenter retrieved the interrogations from each teacher to each child. Interrogations were drawn from the entire protocols for further analysis. By comparing the collections of teacher interrogations to the original protocols, the experimenter was able to note what child or adult behaviors or utterances, if any, preceeded and followed the interrogations. These procedures not only put the teacher interrogations within a contextual framework, but also allowed for the analysis of child responses to the interrogations.

Interrogations were classified into predetermined categories according to function and informational level requested from the child. The categories, slightly modified as outlined by Mittler (1976), and the definitions and examples of each type are presented in Table 1.

As the questions were classified into the defined categories, it was also noted whether each was an exact repetition or a rephrased repetition of the previous question. A question was categorized as a rephrased repetition only if the vocabulary or a portion of the word order of the previous question was maintained. The response to each question was also classified. The responses to clarification questions were not classified. The definitions of response classifications were as follows:

Teacher Answered: A response was classified as teacher answered when the teacher answered her own question. A teacher may ask "Where is he?" and then answer "There he is." This category was used only if the child made no response to the question. Therefore, a

Table 1  
Definitions and Examples of Each Question Type Category

Question Type	Definition	Examples
Behavior Request	Behavior request given in interrogative form. No verbal response required, only compliance.	"Would you open the door?"
Yes/No Question	Demand simply a yes/no response of head nod. Tag questions were included if they could not be classified as behavior request.	"Do you like kittens?" "He's small, isn't he?"
Noun/Noun Phrase	No information beyond a noun or noun phrase label is required.	"What's that?"
Verb/Verb Phrase	No information beyond a verb or verb phrase label is required.	"What are you doing?"
Alternative Questions	Gives the child a choice of responses. Alternative questions subsume noun and verb phrase label questions.	"Was she happy or sad?"
Informational Questions	Request information that may be beyond the noun or verb phrase label. More open ended and provide various degrees of choice.	"Why is he doing that?"
Maintenance Questions	Remarks encourage the child to go on talking. Subsume all other categories.	"Did he really say that?"
Clarification Questions	Speaker not sure he heard correctly, or did not understand what was meant. Also included repetitions of all or part of child's previous utterance said in rising inflection.	"What?" "Huh?"

teachers' affirmation or repetition of a child's response was not included in the teacher answered response category.

**Nonverbal:** Nonverbal child responses were defined as compliance with a request for behavior or a nonverbal signal that the child comprehended the question asked. No verbal answer was given to the teacher's interrogations, but the child complied with the behavioral or informational request.

**Appropriate:** An appropriate, but not necessarily correct, child response to any interrogation category. An appropriate child response exhibits that the child understands the question form, although he may not know the correct answer. For example, if a teacher asks "Where is the ball?" and the child responds "In the toy box." this response is scored as appropriate, whether or not the ball is in the box.

**Inappropriate:** An inappropriate, but not necessarily incorrect, child response to any interrogation category. A response was inappropriate if it did not address the topic or form of the teacher's interrogation.

**No Response:** The child made no response to the interrogation.

The interrogations had been divided into routines previous to the classification of each question into the individual question type categories. A routine was defined by the purpose of the teacher questions. Any number of questions or child responses could be included within one routine, so long as the purpose or the intention of the interrogations remained constant. After all interrogations were individually classified, interrogation patterns could be classified within the routines marked as defined above. Requests for behavior and yes/no questions require minimal language from the child and were

therefore labeled "low" level questions. Noun/noun phrase labels, verb/verb phrase labels and alternative questions require a higher degree of information from the child and were labeled "mid" level questions. Information questions and maintenance questions required the highest degree of information in this classification and were therefore labeled "high" level questions. Clarification questions were not included in routine analysis. Patterns of questions within the routines were categorized into routine types. The definitions of these routine types were as follows:

Upward: The teacher begins the routine with a low, or mid question and progresses through the routine to use mid or high questions. The starting level of the routine is lower than the level of the routine end.

Downward: The teacher begins the routine with high or mid interrogations and progresses through the routine to use mid or low interrogations. The starting level of the routine is higher than the level of the routine end.

Neutral: The level of questioning within the routine does not change. These routine types were further classified into neutral high, neutral mid and neutral low.

Mixed: There was no particular questioning pattern as previously defined within the routine. For example, the teacher may have begun the routine with mid questions, progressed to low questions and ended with high questions.

Reliability for application of all the performance measures was established by having an experienced experimental assistant re-categorize protocols. Of 164 total daily protocols, one was chosen from each teacher to each child, randomly across the four week period.



Therefore, 16 daily protocols were recategorized. Reliability for categorization of routine types ranged from 85 to 100 per cent, for categorization of teacher interrogations and repetitions from 91 to 100 per cent and for categorization of responses from 92 to 100 per cent.

## RESULTS

The data was analyzed according to the total number of sentences produced by each teacher and the percentage of occurrence of all categories of teacher and child behaviors as previously defined. The total number of sentences uttered by Teacher 1 to individual children of the disabled group ranged from 206 to 941 with a mean of 493, while the range for the nondisabled children was from 519 to 1793 with a mean of 940. Teacher 2 uttered from 332 to 1404 total sentences to children of the disabled group, with a mean of 818, and the range for the nondisabled children was from 369 to 1745 with a mean of 871. The percentage of questions directed to the disabled children from Teacher 1 ranged from 15.5 to 22.5 and from 19.0 to 25.5 to the nondisabled children. Percentage of total questions from Teacher 2 ranged from 13.2 to 40.2 to the disabled children and from 34.8 to 48.6 to the nondisabled children.

By dividing the total number of questions by the number of total routines, it was possible to compute the mean routine length teachers used when addressing the children. Routines were previously defined as the period of interrogation during which the purpose or intention of the questions remained constant. The mean length of routines addressed to the disabled group was 1.4 compared to 1.6 to the nondisabled group. Table 2 presents the percentage of occurrence of each routine type uttered by teachers to the two groups of children.



Table 2  
Percentage of Occurrence of Each Routine  
Type for Two Groups of Children

Routine Type	Disabled Group	Nondisabled Group
Downward	6.1	5.0
Neutral Low	73.9	57.9
Neutral Mid	8.7	15.6
Neutral High	8.3	16.5
Upward	2.4	4.5
Mixed	.3	1.5

In examining Table 2, it appears that the most frequently occurring routine directed to both groups of children is neutral low although there is higher occurrence for neutral mid and neutral high routine types for the nondisabled children.

The percentage of occurrence of each interrogation category for each child is presented in Table 3. The percentages were computed by dividing the total occurrences in each category by the total number of questions addressed to each child. The most frequently occurring question type addressed to the disabled children was requests for behavior, yes/no questions being the second most frequently occurring, with noun phrase questions and information questions accounting for the majority of the remaining interrogations. Yes/no questions are addressed to the nondisabled children most frequently. Upon further inspection it appears that requests for behavior, noun phrase, informational and clarification questions occurred at approximately the same rate across the nondisabled children. Table 3 also presents the percentage of occurrence of interrogation categories to the two groups of children. By compiling the individual child data into group data it appears that the disabled group received more requests for behavior in the interrogative form than the nondisabled group, while the nondisabled group were asked more noun phrase, informational and clarification questions than the disabled group. It can also be noted that verb phrase, alternative and maintenance questions occur infrequently to both groups.

The categories of responses and the percentage of occurrence of each in regard to the question type the response followed is presented in Table 4. Upon inspection of the table it becomes apparent that the disabled children did not respond the majority of the time to any

Table 3  
Per centage of Occurrence of Each Interrogation Category to Each Child and the Two Groups

	Behavior Request	Yes/No Question	Noun Phrase Question	Verb Phrase Question	Alternative Question	Information Question	Maintenance Question	Clarification Question
Disabled Children								
1	40.5	32.6	11.0	2.7	.1	9.3	0	3.4
2	33.3	31.0	12.4	5.4	0	6.2	0	1.5
3	39.8	39.0	5.6	.4	.4	8.1	0	6.5
4	47.6	35.5	5.0	.8	0	10.0	0	.8
<u>Disabled Group</u>	<u>37.8</u>	<u>36.8</u>	<u>8.9</u>	<u>2.1</u>	<u>.1</u>	<u>10.6</u>	<u>0</u>	<u>3.3</u>
Nondisabled Children								
1	14.4	38.4	14.2	1.3	1.4	19.8	.2	9.8
2	25.8	36.9	12.3	1.0	.7	11.6	.1	11.1
3	19.3	33.2	15.0	.8	1.8	15.2	1.6	12.8
4	17.8	38.6	14.8	0	1.0	18.0	1.2	10.0
<u>Nondisabled Group</u>	<u>17.8</u>	<u>38.5</u>	<u>12.2</u>	<u>.9</u>	<u>1.3</u>	<u>17.4</u>	<u>.6</u>	<u>10.9</u>

Table 4

Percentage of Occurrence of Each Response Category in Regard  
to Interrogation Category by Disabled and Nondisabled Groups

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<u>Disabled Group</u>					
Behavior Request	2.5	8.6	2.2	0	86.5
Yes/No Questions	7.7	.2	1.6	0	90.3
Noun Phrase Quest.	23.0	0	.9	0	75.9
Verb Phrase Quest.	8.0	0	0	0	92.0
Alternative Quest.	0	0	0	0	100.0
Information Quest.	5.6	0	.8	0	93.4
Maintenance Quest.	0	0	0	0	0
<u>Per. of Occ. Across</u> <u>all Categories</u>	<u>6.7</u>	<u>3.3</u>	<u>1.7</u>	<u>0</u>	<u>88.1</u>
<u>Nondisabled Group</u>					
Behavior Request	.9	33.9	18.6	.7	45.6
Yes/No Questions	1.7	.4	45.0	2.8	50.0
Noun Phrase Quest.	2.3	.3	64.8	3.5	29.0
Verb Phrase Quest.	0	0	47.8	4.3	47.8
Alternative Quest.	3.2	0	67.7	6.4	22.5
Information Quest.	.7	.7	53.4	4.2	40.8
Maintenance Quest.	0	0	46.6	6.6	46.6
<u>Per. of Occ. Across</u> <u>all Categories</u>	<u>1.4</u>	<u>6.9</u>	<u>45.3</u>	<u>2.9</u>	<u>43.3</u>

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question type. The highest appropriate response rate was the 8.6 per cent of the time the disabled children responded nonverbally to the teachers requests for behavior. The appropriate response rate for the nondisabled children is higher, with alternative, noun phrase and informational questions being responded to appropriately over 50 per cent of the time. The response rate for requests for behavior was also over 50 per cent correct when considering the child nonverbal responses to these requests as appropriate. The no response rate for the nondisabled children ranged from 50 per cent of the time following yes/no questions to 22.5 per cent of the time following alternative questions. When considering the response data in Table 4, it is helpful to reconsider the percentage of occurrence of the interrogation categories to the two groups of children as presented in Table 3. Table 4 also compiles the response data across question types. These figures were computed by totaling all responses by the group in each category and dividing these totals by the total of all responses. By inspection of the table it appears that the teachers answered more questions for the disabled group. The nondisabled group complied nonverbally, and answered appropriately and inappropriately more frequently than the disabled children while the disabled group did not respond more frequently than the nondisabled children.

When considering the percentage of occurrence of exact and rephrased repetitions to the two groups of children, it was found that teachers used exact repetitions 3.9 per cent of the time and rephrased repetitions 7.9 per cent of the time to the disabled group compared to exact repetitions 1.6 per cent of the time and 3.2 per cent occurrence of rephrased repetitions to the nondisabled group.

## DISCUSSION

The present investigation did not reveal differences of total teacher input to children of different linguistic levels when the total number of sentences and frequency of occurrence of questions to the two groups were compared. Teacher 1 asked fewer questions of both the disabled and nondisabled groups than Teacher 2. However, previous investigations (Holzman, 1972, Conn and Richardson, 1976) have placed the range of frequency of occurrence of total questions between 11 and 33 per cent and the percentage of questions from Teacher 1 to both groups falls within this range. It appears, however, that Teacher 2 asked an unusually high percentage of questions to both groups. This probably can be accounted for by attributing the high percentage of questions to Teacher 2's personal instructional style. Siegel and Harkins (1963) and Spradlin and Rosenberg (1964) found no significant differences for total occurrence of questions to groups of low or relatively high linguistic level retarded children and those results are supported by the present investigation.

The routine lengths to the two groups do not vary appreciably. It was our hypothesis that routines may have been considerably longer when addressed to the disabled children. Since the disabled group does not respond frequently, it was believed that the teachers may continue addressing questions to the disabled children that have the same purpose or intention. However, that was not the case. As the investigator divided the protocols into routines, it was observed that when addressing the disabled children, the teacher would not pursue a response to a given question. It appeared, instead, that the teacher would ask the question once, perhaps rephrase the question a second time, and if the child did not respond, go on to a new topic. This may

be due to the fact that the teachers knew the disabled children very well and did not expect an answer, knowing perhaps that the child would not respond to the question. If this was the case, it would appear that most of the teacher questions were rhetorical in nature. This would not be a particularly efficient teaching device with this level of child.

The routine type categories were devised as a method of quantifying teacher interrogation adjustments within routines to children of the two groups. Since the routine lengths were shorter than expected, this form of adjustment is not reflected in the percentage of routine types as hoped. Since the routines averaged only 1.4 and 1.6 questions in length, there is very little chance for adjustment in interrogative form within the routine. However, the percentages did reveal that teachers asked more questions of the "neutral mid" and "neutral high" categories of the nondisabled group, as would be expected. The disabled group were asked "neutral low" questions almost exclusively. The idea of classifying routines and routine types to attempt to show interrogation adjustments was borne as the investigator initially examined the protocols of teacher speech to individual children. It was noted that upon occasion the teacher might for example ask "Do you know how to say hi?", reform the question to "Say hi?", and finally model the response "Hi." The ways in which teachers adjust interrogative forms to different linguistic levels of children is an important concern. Perhaps future investigations redefining routines and routine types can be more reflective of teachers adjustments during interrogation.

Upon examining the percentage of occurrence of each interrogation category to each child it appears that among the two groups, the rates

of the categories remain somewhat stable. The interchild variability among the groups appears small, as expected, and allows us to make generalizations about "group" data rather than addressing individual child data. Because of this, the relationship of group data of frequency of occurrence of each interrogation type to frequency of occurrence of each response type can be discussed.

The disabled children were given requests for behavior most frequently, and more often than the nondisabled group. This is understandable as the behaviors of this group are usually in more need of control. The teachers may be more concerned with controlling those behaviors than requesting verbal replies from this group. This may be appropriate for this group as behavioral requests are easier to respond to than requests for verbal replies. But is it appropriate for the teachers to give behavioral commands in the form of interrogations? Holzman (1974) states that verbalizations containing implicit directions rather than direct commands assume that the child can fill in, on the basis of experience and knowledge, the missing links. However, Shatz (1974) investigated whether normal two year olds could understand directive utterances that have the syntactic form of questions rather than imperatives and found no differences in responding rates. From these data we can surmise that it is appropriate for teachers to give the nondisabled group requests for behavior in the interrogative form, but perhaps more appropriate to give requests for behavior in the imperative form to disabled children. The response rates for these requests for behaviors substantiate that conclusion.

Questions requiring only a yes or no reply were the most frequent interrogative form addressed to the nondisabled children and occurred at approximately the same rate to the disabled children. Longhurst



and Stepanich (1975) found that mothers of three year olds asked more yes/no questions than mothers of one and two year olds. However, Cross (1977) states that yes/no questions showed no sensitivity to listener maturity between the ages of 19 and 32 months. In the present investigation, not only did the disabled group not respond to yes/no questions 90.3 per cent of the time, but the nondisabled group had the highest no response rate for this category (50.0 per cent). In a discussion of questions used as probes Conn and Richardson (1976) relate that 54 out of 85 questions used by a teacher require a yes/no response and hardly count as effective probes for comprehension. One explanation of the high no response rate to yes/no questions may be that these interrogations do not always seem to require a response, especially in the case of tag questions. When a teacher asks, "Johnny is at school, isn't he?" it may not appear to the child that a reply is required. At any rate, all yes/no questions directed to either group cannot be called inappropriate until the question forms and responses are further defined and analyzed. We can only state that in the present investigation, under the definition used for classification of yes/no questions, these interrogation forms appear to be inappropriate on the part of the teachers due to the children's lack of response.

Questions requesting information were the next most frequently occurring interrogation category for both groups. Although the nondisabled group answered appropriately 53.4 per cent of the time, the disabled group responded appropriately only .8 per cent of the time. Therefore although these questions are appropriate when addressed to the nondisabled group, they do not appear appropriate for the disabled group. It was expected that the nondisabled group would be asked more questions of this type. Longhurst and Stepanich (1975) report that of questions

mothers ask normal three year olds, 50.67 per cent were questions for information. However, since those authors used a different method of question classification, a direct comparison across studies is not possible.

Of the noun phrase questions, 12.2 per cent were addressed to the nondisabled children and 8.9 per cent were addressed to the disabled children. Again, as with the informational questions and as substantiated by the response rates, these questions were appropriate to the non-disabled group and were not appropriate to the disabled group.

Clarification questions comprised 10.9 per cent of the total questions directed to the nondisabled group. This figure is expectedly higher than that of the disabled group obviously because the nondisabled children spoke more, there were more instances of teacher misunderstanding and need for clarification.

Verb phrase, alternative and maintenance questions were directed very infrequently to both groups. Although the response data for the nondisabled group reflects that these interrogative types may be appropriate to that group, the highest inappropriate response rates are noted for alternative and maintenance questions. Alternative and maintenance questions are clearly inappropriate addressed to the disabled children.

When summarizing the child response data, it becomes apparent that the majority of the teacher questions to the disabled children are not appropriate to their competence level. The children do not respond 88.1 per cent of the time. Teacher answers to questions occur 6.7 per cent of the time. They follow noun phrase questions 23.0 per cent of the time and are highly appropriate as they serve as a direct model for the child for the correct response. The nondisabled

children respond appropriately 45.3 per cent of the time and it appears that any of the defined question types are appropriate when addressed to this group of children. Teachers answer their questions less frequently when compared to the disabled group. The fact that these children do respond inappropriately reflects that even when this group of children misunderstands the question form asked, they are willing to try a sometimes inappropriate response.

The fact that teachers address more exact and rephrased repetitions to the disabled group when compared to the nondisabled group was also expected. In an attempt to clarify the question and elicit a response, the teacher may be more apt to repeat an interrogation to a child who is not responding.

This investigation has revealed that although there are differences in teacher interrogations to disabled and nondisabled children, interrogative styles to both groups of children could be further adjusted to more appropriately address the language capabilities of the children. By analysis of children's responses to specific adult input, it is possible to recognize what types of adjustment should occur. Not only does such a method of analysis of adult-child interaction have diagnostic implications, but also delineates specific areas which may require intervention.

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TEACHER'S INTERROGATIONS TO DEVELOPMENTALLY DISABLED  
AND NONDISABLED PRESCHOOL CHILDREN

by

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## ABSTRACT

Over the last several years there has been a tremendous increase of interest in adult's speech to children. This input has been recognized for the large role it plays in children's language development. From previous studies we have learned how parents speak to children and how they adjust their communicative style. However, little research has been conducted concerning how other adults, namely teachers, adjust their verbalizations to children of different linguistic levels. The purpose of the current study was to describe interrogations addressed to developmentally disabled and nondisabled preschool children by teachers. The subjects included four disabled children, four nondisabled children and two teachers of a preschool for developmentally disabled children. Developmental language level for the two groups of children was determined in order to establish that the children represented two distinct linguistic levels. Data were recorded on a dual channel cassette tape recorder over four weeks. Both the teacher being observed and the investigator wore vests equipped with concealed microphones and transmitters. While teacher speech was recorded on one channel of the tape, the investigator recorded any contextual cues received by the child on the second channel. After the interrogations were drawn from the protocols, they were classified into eight predetermined question type categories. These categories stressed the language level response requested from the child. The children's responses were also classified into five categories. Thus, the teacher's questions were regarded as appropriate or inappropriate to the linguistic level of the children based on the response rate and type of response by the children. The investigation revealed that there were relatively small differences in teacher



interrogations to disabled and nondisabled children. Interrogative styles to both groups of children could be further adjusted to more appropriately address the language capabilities of the children. By analyzing children's responses to specific adult input, it is possible to recognize what types of adjustment should occur. Direct intervention targets concerning adult's linguistic input to children are readily identifiable.