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ABSTRACT

Teacher behavior and expectations and teacher-student communication patterns were investigated among urban and suburban teachers of educable mentally retarded and educationally handicapped (emotionally maladjusted and learning disabled) students. Classroom observers recorded teacher-student interaction using a version of the Brophy-Good observation system. The results indicated that both groups of teachers tend to maximize success by aiming low-level questions to specific students, use reinforcement and positive feedback, do not differ in their questioning behavior, and do not appear to exhibit differential communication to students with varying characteristics. (Author/DLS)

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TEACHER-STUDENT INTERACTION IN SPECIAL EDUCATION CLASSROOMS

Myron H. Dembo
University of Southern California

Roland K. Yoshida
Bureau of Education for the Handicapped

Tom Reilly
Jefferson County Public Schools, Colorado

Vera Reilly
Jefferson County Public Schools, Colorado

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Myron H. Dembo

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Abstract

This study investigated a) teacher-student communication patterns in special education classrooms, b) differences in behavior between EH and EMR teachers, and c) the teacher expectancy hypothesis that special education teachers will exhibit different behavior toward students who they perceive as differing in appropriate classroom behavior, achievement, and discipline. Classroom observers recorded teacher-student interaction using a version of the Brophy-Good observation system in five EMR and seven EH classes in an urban and suburban school district. The results indicated that EH and EMR teachers a) tend to maximize success by aiming low level questions to specific students and use reinforcement and positive feedback, b) do not differ in their questioning behavior and c) do not appear to exhibit differential communication to students with varying characteristics.

TEACHER-STUDENT INTERACTION IN SPECIAL EDUCATION CLASSROOMS

Although the literature on teacher behavior in regular classrooms has grown extensively in recent years, there are considerably less data on special education teachers. For example, we know that about 80% of the questions asked by regular teachers are either factual or procedural (Gall, 1970) and that many regular teachers fail to make extenisve use of reinforcement in class (Flanders, 1970). However, we know very little about these and other categories of teacher behavior pertaining to special education teachers.

Special education teachers instruct a wide range of handicapped students who are identified by different characteristics. For example, California has developed programs for the educationally handicapped (EH), a classification for learning disabled and emotionally maladjusted students. These students must have average or above-average intelligence and be seriously below expectancy in one or more academic areas. Seriousness of handicap is evident in that not more than two percent of a school district's enrollment can be assigned to the EH program. In contrast, the educable mentally retarded (EMR) are defined as not profiting from the regular classroom as well as performing significantly below average on an individualized intelligence test and demonstrating maladaptive behavior. Given such varying characteristics between EH and EMR students, we may expect their teachers to differ in their interactions with them. However, we know of no studies which have systematically observed EH and EMR teachers in their classroom treatment of handicapped students.

Similarly, the expectancy data in special education classrooms are extremely limited. Larsen (1975) completed a major review of research on

the influences of teacher expectation on the school performance of handicapped children. Unfortunately, all but a few studies originated in regular classrooms. Although the data support the fact that regular classroom teachers often react differently to individual students on the basis of their initial perception and expectations, we cannot be sure to what extent these studies can generalize to special education teachers. The fact that special education placement leads to labeling and lower student self-perceptions (Hobbs, 1975; Jones, 1972) does not necessarily mean that special education teachers communicate differential expectations to different students.

To date, teacher behavior research in special classes has produced mixed results. Salvia, Clark, and Ysseldyke (1973) reported that special education teachers had a tendency to retain stereotypes of "handicapping conditions" even when they were not present. Haskett (1969) found that teachers' perception of students was related to their school performance. However, when Gozali and Meyen (1970) tested the expectancy phenomenon in EMR classes, they found no influence on academic performance. Yoshida and Meyers (1975) also found no difference in regular and special education teachers' expectations for pupil success when a child was labeled "mentally retarded" or designated to be in a regular class. Lynch and Ames (1972) studied teacher behavior in both special and regular classrooms. They found that special education teachers did not favor the more able students while the regular teachers showed a definite bias toward more able students.

The researchers in the first three studies attempted to induce expectations by providing teachers with incorrect information about their students. This procedure follows the design of the early teacher expectancy studies in regular classrooms. The Yoshida and Meyers (1975) study was a laboratory

experiment designed to investigate the bias of the EMR label on teachers' expectancies as related to change in a student's performance. The last study by Lynch and Ames (1972) was a naturalistic investigation of teacher communication patterns with different students. Brophy and Good (1974) have pointed out the shortcomings of experimentally induced expectancy and studies have recommended greater use of naturalistic studies.

This investigation attempted to answer the following questions: What are the teacher-student interaction patterns in special education classrooms?. Are there differences between EMR and EH teachers in their interaction in schools comprised of predominantly high or low SES students? Do special education teachers exhibit the expectancy effect by behaving differently towards select students within a classroom in terms of the type and level of questions and type of feedback given to students? More specifically, do special education teachers behave differently towards students they perceive as: exhibiting the most appropriate classroom behavior, exhibiting the worst discipline problem, profiting most and least from the class, and achieving at the highest and lowest academic levels.

Method

Data Collection

The data were collected in randomly selected self-contained special education classrooms: three EMR and four EH classes from an urban school district and two EMR and three EH classes from a suburban district. The urban district comprised students from predominantly lower-socioeconomic backgrounds while the suburban district comprised students from predominantly middle-class backgrounds. The urban district had considerably more EMR

classes than EH classes. This rate was almost reversed for the suburban district.

The teachers were told that the investigators were interested in observing differences in the classroom behavior of students. They were not informed that their behavior was the principal focus of the investigation.

Six coders using a version of the Brophy-Good Interaction Observation System (Brophy and Good, 1970), observed each teacher for a minimum of ten hours of codable interaction time. The coders spent three weeks practicing coding in laboratory and school situations until they reached an 85% agreement on all coding categories.

Teacher-Student Interaction Variables

The type of dyadic interactions coded were teacher-afforded response opportunities and other types of interaction initiated by the children separately as to whether they were discipline questions used to encourage better attention, open questions directed to the class as a whole, or direct questions aimed at a particular child. Call outs were coded when the respondent called out the answer without waiting for teacher recognition.

In addition, various types of teacher questions were categorized--process, product, choice, and self. Process questions require an explanation of a complex phenomenon or of the thinking or problem-solving strategies used in arriving at a conclusion. Product questions require a single word or short answer, previously reporting fact from memory. Self-reference questions ask the student to provide his opinion or personal experience. Choice questions provide the student with a list of alternative answers from which he must select the correct response.

Coders also noted the quality of the child's response (correct, incomplete, or partially correct, incorrect or no response) and the type of feedback given by the teacher (praise, criticism, supplying the answer, repeating the question, rephrasing the question or giving a clue, or giving no feedback at all).

After all observations were completed, the teachers were asked to complete a questionnaire regarding various aspects of their program. Included in the questionnaire were three questions which asked the teachers to select two students in their class for the following categories, students who displayed: a) the worst discipline problems, b) the best behavior, c) profited most from the special education program, e) performed at the highest academic level, and f) performed at the lowest academic level. A student could be selected for more than one category.

Data Analysis

Teacher behavior was measured by identifying the percentage of the type and level of questions asked and the feedback given to correct and incorrect (wrong) responses. Certain categories in the observation system were combined because of limited responses. For example, the percentage of answers responded partially correct, incorrect, or don't know by the students was analyzed between students' programs (EH vs. EMR) within the urban and suburban districts and between students selected for the specified behavior achievement and profit categories identified above across all classrooms. Feedback given to don't know responses were not included because of the low frequency of occurance. There were only 23 cases in the urban district and 11 cases in the suburban district where a student could not give any answer to a question. The following were the various feedback reactions observed in the study:

Percent answers-Correct: The percentage of answers responded correctly by S

Percent Correct-Praise, Affrt: Percentage of correct answers given praise or affirm right feedback

Percent Correct-No feedback: Percentage of correct answers given no feedback

Percent Correct-New questions: Percentage of correct answers given a new question

Percent Wrg-No feedback: Percentage of wrong answers given no feedback

Percent Wrg-NW-Crit: Percentage of wrong answers followed by negate wrong or criticism

Percent Wrg-Sustain: Percentage of wrong answers given process, repetition or rephrase of question

Percent Wrg-Give Ans., Ask, Call-Percentage of wrong answers followed by giving answers, ask other, call other

Percent Wrg-New Q: Percentage of wrong answers followed by new questions

RESULTS AND DISCUSSION

Teacher-Student Communication Patterns

Table 1 presents the mean percentage of EMR and EH teachers' level of questioning and feedback to the students within each school district. The sample size for the students in each district indicates the number of subjects involved in the different combinations of behavior.

INSERT TABLE 1 ABOUT HERE

The predominant method of questioning students was product questions aimed at particular students. The range in the mean percentage of direct questions was 68%-91%. In all other response categories the percentage

did not exceed 18%. The level of questions was primarily product (52%-81%). Other than the 19% use of process questions in the EMR class in the suburban district, the teachers rarely used process questioning in which the student is required to explain something. This questioning strategy closely resembles the behavior of regular teachers (Gall, 1970).

The percentage of questions answered correctly is extremely high in the sampled classes. Although the EH students in the urban district answered only 58% of their questions correctly, the average for the remaining classes were 82%, 87%, and 88%. This finding is not surprising when we consider the low level of questioning.

Let us now consider the type of teacher feedback after students respond correctly or incorrectly to a question. After a correct response the teachers had a tendency to praise or affirm that the student's response was correct or acceptable. The only difference was that the EMR teachers in the urban district tended to use less praise or affirmation (75%) and used less feedback (23%). In about 20% of the cases, the teachers asked students who answered a question correctly another question. There was a significant difference in the use of this strategy in the suburban district where the EMR teachers were more likely to use this strategy.

The frequency of incorrect responses was very low. When a question was answered incorrectly, the student was told so or criticized on an average ranging from 83 to 86% of the time. In about half of the situations the teachers used some sustaining feedback (52% - 64%) such as repeating or rephrasing the question or giving a clue.

One of the basic strategies in special classrooms was the teachers' attempt to maximize success and minimize failure. This was done by aiming product questions to particular students and reinforcing any positive

response. However, there has been some criticism in what is called errorless learning. Dweck (1975) studied the question of whether the most effective way of ocercoming negative reactions to failure is to eliminate it from the situation or teach the child how to deal with it. She worked with subjects who were failure-oriented and found that when they were taught to attribute failure during training to insufficient effort, they were able to persist after failure in a test situation. Students in a success only group did not show any improvement of performance following failure. Dweck concludes that instructional programs should include procedures dealing with failure rather that to attempt to skirt the issue by trying to ensure success. Gold (1975) questions the strategy of reinforcing any little positive behavior in most programs for the retarded. The assumption underlying the reinforcement strategy is that retarded students have little ability, and therefore, any response must represent considerable effort. He suggests that "reward given for low levels of success could result in support for low self-concept (p. 11)." That is to say, if a student is reinforced for success in a task that he perceives as simple, he may come to believe that his teacher perceives him as having low ability. These papers have important implications for the findings of the present study. Although the teacher may believe that low level questions, correct answers, and liberal use of reinforcements leads to success and positive self-concepts, the strategy does little to deal constructively with failure. It may also reinforce negative self-concepts.

Behavior of EH vs. EMR Teachers

In order to test whether behavior differed by type of teacher, a X^2 test was used to analyze the data. The distributions of percentages from both the EMR and EH groups within each school district were pooled and the

median percentage was determined for each pooled distribution. The teacher-student interaction percentages for each variable were assigned to one of two categories, either above or below the median percentage. This procedure created a 2 X 2 X^2 table with teacher type (EMR versus EH) as one factor and frequency above or below the median as the second factor. Table 1 presents the frequency of percentages above the median for each handicapped category within a school district and the derived X^2 value. Thus, for % correct-praise, AFFrt, 18 EMR and 26 EH students were above the median. The X^2 value was 5.17 which was significant at .05. This means that in the urban district the EH students were more likely to be given praise or told they were right after a correct answer than the EMR students. The mean percentage for the EMR students was 74.6% while the mean percentage for the EH students was 96.4%.

The results of all comparisons of special education teachers yielded 7 of 34 differences in the quantity or quality of teacher behavior. Inspection of Table 1 revealed no distinct patterns of differential interaction towards students between the EH and EMR teachers.

INSERT TABLE 2 ABOUT HERE

Several possibilities for the few number of significant differences between EH and EMR teachers' behavior can be identified. First, special education teachers may similarly approach EH and EMR students because they perceive their students as school failures. From an instructional standpoint, it may make little difference that the students have been

classified as EH or EMR. Rather, the same strategies may be used to reduce failure such as presenting questions which special learners are able to correctly answer. These responses are usually followed by praise. Second, the organization of both EH and EMR classes such as the low teacher-student ratios increase the probabilities of the teacher using small group or one-to-one interaction between the teacher and student. The availability of these instructional alternatives may result in similar teacher behavior. Thus, both student and organizational characteristics of special education programs may be homogeneous enough to result in similar practices for EH and EMR teachers observed in this study.

Teacher Expectancy Behavior

Although the behavior of EH and EMR teachers toward all students was similar, the teachers could exhibit differential behavior toward specific students in class. This concern raises the expectancy issue regarding special education teachers.

Table 2 presents the observation data combining EH and EMR classes separately from both districts on teacher behavior toward students identified in the questionnaire in terms of behavior, achievement, and success in class. Only the means are presented because there were no significant differences in teacher behavior.

The observation data in Table 2 of teacher behavior toward students identified as exhibiting good or bad behavior, profiting most or least from the class, and achieving at a higher or lower academic level appear to resemble the same interaction found with the total population. There is no evidence from this data that the teachers were likely to ask cer-

tain students higher level questions, reinforce them more often, or use more sustaining feedback.

Some Methodological Concerns

Although there was no evidence of differential teacher communication in the particular dyadic interaction system used in this study, researchers should investigate other teacher behaviors in special classes that might contribute to the communication of low expectations. For example, since there are often one or more aides working with special education teachers, students might be assigned to either the aide or teacher according to various student characteristics such as achievement or motivation. This assignment may also influence the length of time these school personnel instruct students.

Let us consider for a moment a few methodological problems thay may limit the usefulness of this evaluation tool. First, there may be more than one teacher in the classroom. Indeed, this possibility is very likely in special education classes. It may even be usual to find a teacher aide assisting the teacher in such classes. What criteria does the coder use to decide which teaching agent to measure? Moreover, if the coder decides to always measure the teacher can he be sure that the students have not been differently selected? It's possible, for example, that the teacher works with more problem students than the other teaching agent. Thus, these students are less likely to answer the teacher questions correctly and be given affirmative feedback state-

ments from the teacher.

Second, it is possible that some of the students may not be present in the class for the whole period. For example, the older students may leave the classroom to take part in a woodshop or sewing program. Thus, the older students may not be available for response questioning during some parts of the school day. In a similar vein, even if these students come back to the classroom before the coder leaves there is reason to worry that the students will be given special tasks to work on while the teacher finishes his questioning of the other students. Indeed, if the older students are given independent assignments then there are only a few viable response categories the coder can use to measure their interaction with the teacher.

Third, sometimes the teacher systematically allows certain students to leave class for various procedural matters (i.e. carry note to office). If the teacher tends to send more problem students than achieving students out of the classroom on errands then the coder may get less opportunity to measure these students on some of the content categories.

Fourth, sometimes the teacher can limit the full range of student responses and his own feedback to that response by asking self-referenced questions. For example, if a student is asked his opinion about a television personality it is unlikely that the teacher will challenge his answer or give the student a critical feedback. Thus, the self-referenced question precludes the possibility of negative student answers and negative teacher feedback. Moreover, it is certainly possible that special education classes may give more time to student opinion questions and thus reduce the range of the measuring instrument.

Fifth, the teacher may limit some of the categories by using small group activities in the classroom. The teacher may use the rephrase or ask other category more because of the size of the group. Also some students may need special attention from the teacher (tutorial) and thus work for longer periods of time in the small groups. Finally, some categories may be used more because of the physical distance of the students to each other and to the teacher. The coder can pick up more non-verbal cues and thus need different decisions about borderline categories (e.g. praise versus affirmation).

The above limitations in the observation system may have led us away from less salient forms of teacher expectancy. Thus, to fully explain the expectancy phenomenon in special classrooms, it may be necessary to focus on other types of teacher-student interaction than the question-response-feedback dimensions in the Good and Brophy system.

Summary

This study was an initial effort to investigate: a) teacher-student communication patterns in special education classrooms, b) differences in behavior between EH and EMR teachers and c) the teacher expectancy hypothesis that special education teachers will exhibit different behavior toward students who they perceived as differing in appropriate classroom behavior, achievement, and discipline. The findings suggest that:

(1) Special education teachers tend to maximize success by aiming low level questions to specific students and use reinforcement and positive feedback.

(2) There are few differences in the questioning behaviors of EH and EMR teachers within school districts comprising of students of different SES levels.

(3) Special education teachers do not appear to exhibit differential communication to students with varying characteristics.

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TABLE 1

Percentages, Frequency of Percentages Above Median and
Chi-square Values for EMR and EH Teaching Behavior by District

Behavior	Urban District					Suburban District				
	EMR (n=46)		EH (n=41)			EMR (n=32)		EH (n=30)		
	Percentage	Frequency Above Median	Percentage	Frequency Above Median	X^2	Percentage	Frequency Above Median	Percentage	Frequency Above Median	X^2
% Discipline Questions	0.2	3	2.1	3	<1	0.7	4	0.2	1	<1
% Direct Questions	68.4	19	82.5	24	1.93	92.6	16	91.2	15	<1
% Open Questions	17.6	25	8.1	19	<1	5.7	15	7.4	15	<1
% Call Out Questions	5.1	15	2.5	17	<1	1.1	6	1.2	5	<1
% Process Questions	2.2	1	5.9	19	21.5 **	18.8	24	0.1	1	30.1**
% Product Questions	77.6	26	80.7	17	1.4	52.0	10	74.9	21	7.8**
% Choice Questions	4.2	20	3.6	19	<1	13.1	19	11.8	12	1.6
% Self Questions	7.3	22	5.0	22	<1	16.1	18	13.2	13	<1
% Answers-Correct	82.6	34	57.6	9	21.3 **	86.9	14	88.3	17	<1
% Correct-Praise, AFFRt	74.6	18	96.4	26	5.2 *	88.9	15	92.4	20	1.7
% Correct-No Feedback	23.3	23	2.9	8	7.8 **	6.5	15	6.0	9	1.2
% Correct-New Question	22.6	17	17.9	17	<1	36.6	20	10.9	7	8.1**
	EMR (n=12)		EH (n=28)			EMR (n=17)		EH (n=13)		
% Wrong-No Feedback	16.7	2	6.0	7	<1	18.7	2	11.5	2	1.3
% Wrong-Neg.Wr., Criticism	83.3	10	85.6	18	<1	81.3	10	80.8	10	<1
% Wrong-Sustain	52.1	6	58.1	14	<1	64.1	9	56.9	6	<1
% Wrong-Give Answer, Ask, Call	75.0	7	42.1	8	<1	46.7	10	13.8	4	1.3
% Wrong-New Question	32.3	5	18.6	12	<1	15.0	4	9.2	2	<1

Note: Sample size for each handicapped category and behavior combination varied due to frequency of occurance.

*p<.05

**p<.01

TABLE 2

EMR and EH Teacher Behavior Toward Students
With Different Characteristics

Behavior	Discipline				Achievement				Profit			
	EMR		EH		EMR		EH		EMR		EH	
	Good (n=12)	Bad (n=12)	Good (n=9)	Bad (n=10)	High (n=13)	Low (n=8)	High (n=9)	Low (n=7)	Most (n=12)	Least (n=12)	Most (n=10)	Least (n=10)
% Discipline Questions	0.4	0.2	0.0	0.0	0.8	0.0	0.0	0.0	0.2	0.3	0.0	0.0
% Direct Questions	81.7	87.7	85.5	89.7	78.3	84.5	92.8	91.1	71.2	85.9	85.7	90.4
% Open Questions	15.3	10.2	10.0	7.8	14.3	12.5	5.8	6.1	21.0	11.3	4.1	6.8
% Call Out Questions	2.6	1.9	4.8	2.5	6.6	3.0	1.4	2.8	7.6	2.4	1.2	2.9
% Process Questions	6.9	6.7	9.3	5.2	14.1	4.3	6.7	7.3	14.7	6.4	3.6	7.9
% Product Questions	75.3	73.9	83.0	82.8	61.2	81.1	83.6	82.1	65.7	75.0	79.4	83.6
% Choice Questions	7.7	8.3	2.3	6.8	12.1	7.0	6.1	3.7	8.2	8.7	15.0	5.1
% Self Questions	10.2	11.1	5.4	5.2	12.6	7.7	3.6	8.9	11.3	10.0	1.9	3.4
% Correct-Praise, Accept	91.6	84.7	91.8	96.3	82.6	90.7	94.4	92.1	74.2	83.8	95.0	95.7
% Correct-No feedback	7.6	15.3	2.5	3.7	17.0	8.3	5.6	0.2	18.3	10.6	5.0	4.1
% Correct-New Question	32.5	33.4	18.5	13.2	39.5	22.4	27.7	12.7	32.8	23.2	12.9	16.4
	Good (n=2)	Bad (n=6)	Good (n=7)	Bad (n=4)	High (n=5)	Low (n=3)	High (n=4)	Low (n=4)	Most (n= 6)	Least (n=4)	Most (n=7)	Least (n=6)
% Wrong-No feedback	25.0	9.4	0.0	0.0	26.7	25.9	18.8	0.0	38.0	16.7	7.1	0.0
% Wrong-Neg Wr, Criticism	75.0	90.6	81.0	87.5	73.3	74.1	68.8	75.0	62.0	83.3	92.9	77.8
% Wrong-Sustain	50.0	53.9	53.6	65.0	80.0	66.7	45.0	91.7	61.2	45.8	54.3	66.9
% Wrong-Give Answer, Ask, Call	25.0	63.9	48.3	48.3	66.7	42.6	30.0	41.7	38.0	45.8	52.9	35.8
% Wrong-New Question	50.0	16.7	23.8	16.7	40.0	18.5	23.7	25.0	17.1	12.5	2.9	27.8

Note: Sample size for each student category and behavior combination varied due to frequency of occurance.