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AUTHOR Good, Thomas; Brophy, Jere E.
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ABSTRACT

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BEHAVIORAL EXPRESSION OF TEACHER ATTITUDES[1]

Thomas L. Good

University of Missouri at Columbia

Jere E. Brophy[2]

University of Texas at Austin

ABSTRACT

In a replication and extension of work by Silberman (1969), differential teacher behavior toward different students was studied in relation to the attitudes teachers held toward those students. Using data on dyadic teacher-child interactions collected with the Brophy-Good system, contrasting patterns were noted in the ways teachers interacted with students toward whom they felt attachment, concern, indifference, or rejection. Four distinct patterns were observed. The data generally confirmed Silberman's earlier findings, even though the present study was done at a different grade level and involved 3 different types of student populations. Methodological differences which may explain the discrepancies which did occur are discussed, along with suggestions for related research.

Jackson, Silberman, and Wolfson (1969) have empirically demonstrated that teachers feel differently about different children in their classrooms. Silberman (1969) has shown such differential teacher attitudes to be associated with differential teacher behavior. Using a sample of 10 female third grade teachers who had taught in upper middle class suburban school systems for at least three years, he obtained responses to the following interview items:

1. Attachment. If you could keep one student another year for the sheer joy of it, whom would you pick?
2. Concern. If you could devote all your attention to a child who concerns you a great deal, whom would you pick?
3. Indifference. If a parent were to drop in unannounced for a conference, whose child would you be least prepared to talk about?
4. Rejection. If your class was to be reduced by one child, whom would you be relieved to have removed?

Following these interviews, 20 hours of observation data were collected in each class to see how teachers treated the students they nominated, and to see what the students were like. Profiles of the characteristics of the four types of students and of the teachers' behavior toward them are presented in the following paragraphs.

Attachment: Children in this group were seen as conforming, fulfilling the personal needs of the teachers (volunteering, answering questions correctly), and making few demands on their energies. Even though the teachers preferred these students, they did not interact with them or call on them more frequently than the others. However, the teachers did provide more praise to these students

and held them up as models to their classmates.

Concern: Children in this group made extensive but appropriate demands upon the teacher's time. Of the groups studied, these children received the most teacher attention. Teachers initiated frequent contact and placed few restrictions on these children, who were allowed to approach them freely in most circumstances. Teachers praised their work frequently and were careful to reward effort. However, at times the teachers did express their concern directly and openly, "I don't know what to do with you next."

Indifference: These children were seldom noticed by the teachers and had much less contact with them than other children. Other than infrequency and brevity of contacts, no differences in teacher behavior toward these children were observed.

Rejection: The teachers viewed these children as making illegitimate or overwhelming demands upon them. In contrast to the concern students, these children often received criticism when they approached the teacher; if concern students could do no wrong, rejection students could do nothing right. These children were under continual surveillance, and much teacher behavior directed at them involved attempts to control their behavior. However, the teachers had frequent contact with these children and frequently both praised and criticized their behavior in public. Interestingly, 8 of the 10 rejection students were asked to leave the room at least once when an observer was present.

Attitudes toward individual students significantly affected the teachers' behavior, although there were differences within the attitudes sampled. Teacher concern and indifference were more readily expressed than rejection and attachment. Silberman suggests that the teacher role may interact with teacher preferences to prevent the expression of rejection and attachment. Indifference and concern feelings present less role conflict, and therefore are easier attitudes for the teacher to express in the classroom.

Silberman's study is an important addition to the growing literature on intra-classroom differences in teacher-child interaction patterns (reviewed in Good and Brophy, 1971). His results have important implications for teacher education and training. However, certain aspects of his design suggest improvements. First, Silberman's attitude data were collected before observational measures were taken, so that knowledge of the relevant variables might have led teachers to distort their behavior during observation periods (mask favoritism toward preferred children, demonstrate concern for children described as objects of special concern, etc.). Second, Silberman used only one student in each classroom to represent an attitude group. Teachers may be attached to or concerned about a student for a variety of reasons, and may show their attitudes through various behaviors. Third, Silberman's teachers all worked in upper middle class suburban schools. It is possible that expression of teacher attitudes may vary with school or learner characteristics. For example, if much more negative affect is expressed by students in lower class schools, it may be easier for teachers to express rejection there than in middle class schools.

These considerations were incorporated into the present study, which was a replication and extension of Silberman's work.

METHOD

Data Collection

Data were collected in 9 first grade classrooms which were already involved in a larger study of the relationships between teachers' performance expectations and their behavior toward different children (Brophy & Good, 1972, in press). There were 3 classes studied in each of 3 types of schools: upper middle class white, lower class white, and lower class black. Teachers were told

that the investigators were interested in observing differences in the classroom behavior of children who varied in achievement. In late September each teacher supplied a list, ranking her children in order according to the levels of achievement she expected from them. Other than this achievement rank and a seating chart, no information was requested from the teachers until all behavioral observation data were collected. This eliminated the possibility that knowledge of the relevant attitude variables could influence the behavioral data.

Sixteen 2 1/2 hour observations were made in each classroom with the Brophy-Good Dyadic Interaction observation system (Brophy & Good, 1970; Good & Brophy, 1970). This system yields a variety of measures of the quality and quantity of teacher-child interaction, separately recorded for each child in the class. The resulting data pool provided information on the teacher-child interaction patterns of 270 children, based on 40 hours of classroom observation taken on 16 different days during a three month period.

During September, pairs of observers worked in each classroom to establish reliability and to desensitize the teachers and children to their presence. After reliability was established (procedures are detailed in Brophy & Good, 1970), the observers began to work singly, making observations in October, November, and early December. Observers had not seen the teachers' achievement rankings, and did not know that attitude data would be collected.

In December, after all classroom observations had been completed, teacher attitude data were collected through a mailed questionnaire. The instructions were:

> When you answer these questions, please have the class roll in front of you so that the names of all the children are before you. Please try to name at least three children for each question. Children can be named for more than one question.

The four questions were the same as those used by Silberman, except that "If your class was to be reduced by a few children, which would you have removed?" was substituted for ". . .whom would you be relieved to have removed?" for the "rejection" item. This was done at the request of the school district administration. All 9 of the teachers responded as requested.

Data Analysis

The raw tabulations were first converted into measures designed to eliminate distortion due to absences and to allow direct comparison among children in the same room. Frequency counts were converted to means, dividing each child's totals by the number of observations for which he was present. Other measures were percentage scores compiled according to the procedures detailed in Brophy & Good (1970).

The data for each class were then standardized (mean = 0, standard deviation = 1) to set the 9 classes on a common scale and eliminate variance due to teacher or class differences. Two sets of analyses of variance were then obtained from these standardized scores distrubutions. First a series of one way analyses of variance were performed, in which the scores of each attitude group were compared with the scores of all other children. Thus, these analyses compared the scores of 25-30 children with those of the remaining 240-245. These results are summarized below.

The data also were subjected to a series of two-way analyses of variance, in which school as well as attitude was used as a classifying variable. Since Silberman's data came exclusively from upper middle class schools, and since the data in this research came from 3 quite different schools, the possibility that school effects would interact with attitude effects was investigated. These analyses produced some significant interactions. However, the number obtained

was no greater than that expected by chance. In addition, no observable pattern was found, and no reversals of main effects occurred in individual schools. It was concluded that the attitude effects were similar across the 3 schools, despite their contrasting populations.

RESULTS[3]

Data on the sex and achievement status of the children in the 4 attitude groups are given in Table I. Roughly equal numbers of boys and girls appear in

Insert Table I about here

the attachment, indifference, and concern groups, but the teachers nominated twice as many boys as girls to the rejection group. Achievement status was related to all four attitudes. The attachment group was composed mostly of high achieving students, while the other three groups were mostly low and average achievers. It appears that teachers get to know and like high achievers. Children in the middle range of achievement appear less salient to the teachers; they were mentioned frequently only on the indifference item. Low achievers appear mostly as objects of teacher concern(especially if they are girls) or rejection (especially if they are boys).

Results from analysis of variance comparing each of the 4 attitude groups (respectively) to all other children on the teacher-child interaction variables will now be presented. First, however, a few terms may require explanation (see Brophy & Good, 1970 for a detailed presentation of the entire system). The terms "process," "product," and "choice" refer to types of teacher questions. "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, primarily reporting

facts from memory. "Choice" questions merely require the child to select from among alternatives provided by the teacher (yes-no and either-or questions are included here). Generally, process questions are more demanding than product questions, and both of these are more demanding than choice questions. A fourth term, "self-reference," refers to questions about personal or procedural matters rather than curriculum matters.

The terms "open" and "direct" concern the way teachers select children to respond to questions. An "open" question is coded when the teacher calls on a student with his hand up who actively wishes to respond. A "direct" question is coded if the teacher names the respondent without waiting for a show of hands, or if he calls on a student who does not have his hand raised. "Call outs" are coded when the respondent calls out the answer without waiting for teacher recognition.

The terms "process" and "product" are also used in coding teacher feedback to children. "Process" feedback is coded when the teacher reviews or explains the steps involved in reaching the correct solution or response. "Product" feedback is coded when he gives the correct answer, but does not explain the process.

When a child gives a wrong answer or fails to respond, the teacher is coded for whether or not he "stays with" the child and provides a second response opportunity. He can do this either by repeating the question or by giving help (rephrasing or giving a clue). In contrast to "staying with" the child, the teacher may end the interaction by giving the answer or calling on someone else.

Attachment

Attachment students possess certain qualities which may endear them to teachers. These students actively seek out the teacher, and they typically initiate contacts about work assignments rather than merely procedural matters.

Although attachment students are active in the classroom they do not call out answers significantly more often than other students. It appears that teachers like students who are bright and active, but able to control their intellectual curiosity and avoid violating classroom norms by calling out answers.

In comparison with their classmates, these students provide substantially more correct answers per response opportunity, and they make fewer reading errors per reading turn. They also give more right answers in reading group question-answer periods. In addition, when these students don't know an answer they are more likely to try to respond rather than to make no response. More evidence that attachment students conform to institutional norms can be seen in their ratio of behavioral contacts to work related contacts. These students had many fewer contacts with the teachers over behavioral issues than did their classmates.

It is easy to see why these children would be appealing to many teachers. They appear to be bright, hard-working, no nonsense students. How, then, did their teachers respond to them? Did they treat them differently? Apparently the teachers did not treat these children in grossly favorable ways. Although there were a number of measures that show differences, many of these are attributable to child behavior, not teacher behavior. For example, attachment students receive much more total praise for their academic work. They also receive less criticism and more praise in teacher-initiated work contacts. However, they are not praised significantly more often per correct answer than their classmates. Thus, the higher total praise given to these students may simply reflect the fact that they do perform more capably in the classroom.

There is some evidence that teachers try to minimize their contacts with attachment students. They show trends toward seeking them out less often to discuss their work, and toward calling on them directly less often. However, the teachers show that in certain ways they do favor the attachment students.

These students receive more reading turns and a greater percentage of process questions. They also receive less process feedback, apparently because the teachers feel that they understand the work and don't need it.

Concern

Although not as active as the attachment students, the concern students show a trend toward initiating more contacts with their teachers than most of their classmates do. However, their scores on performance quality indicators are much lower. They provide fewer correct answers per response opportunity than other students, and make more errors per reading turn. When they don't know the correct answer they are more likely to take a guess than to remain silent.

The data clearly show that concern students receive different teacher treatment. They receive more opportunities to answer questions, both in general class activities and in reading groups. Teachers also seek out concern children for more private contacts, both procedural and work related.

In addition to seeking these children out more often, the teachers respond to their failures more favorably than they respond to the failures of other students. For example, these students received a greater proportion of process feedback in teacher-initiated work contacts, indicating remediation efforts by the teachers. Also, the teachers are more likely to stay with these students when they commit reading errors, and they show trends toward more frequently asking them new questions in reading group after they answer initial questions correctly and toward less frequently failing to give feedback after their answers. In addition, when these students fail to answer reading group questions correctly, the teachers are more likely to repeat the question than to give help. In sum, the teachers were carefully monitoring the performance of concern students during reading groups, and were pushing them to do their best.

The trends seen in the reading group data for concern students also appear in the data from general class activities, but they are weaker and usually not statistically significant.

Although the teachers seek out concern students for more contact and stay with them longer following both success and failure, they do not praise or criticize these students significantly more than their classmates. There is a trend (with some reversals) toward more frequent praise per success and less frequent criticism per failure, but none of the differences reach statistical significance. In general, then, the teachers' treatment of concern students reflects concern with their learning progress (not their behavior). This concern is seen in evidence of attempts to get the most out of these students during discussion and recitation and to remediate their deficiencies during individual contacts with them.

Indifference

The indifference students as a group are quite passive in the classroom. They initiate fewer work and procedure contacts with their teachers, and they seldom call out responses in general class activities or reading groups. When they do not know an answer, they are more likely to remain silent than to offer a guess. These students respond adequately when they do answer a question, being correct about as frequently as the rest of the students. They also seem to be about average in frequency of discipline contacts. Thus, passivity is the primary observable trait shown by these children.

There are some observable teacher differences in interactions with the indifference group. These students receive fewer response opportunities than their classmates, but this is due to their failure to seek response opportunities rather than to teacher discrimination. The teachers ask these students direct questions as often as they ask other students.

However, the teachers initiate individual contacts less frequently with this group. Their tendency to avoid these children is not as great as the children's tendency to avoid them, but it is observable in the data. This is especially true for procedural contacts, although a slight trend exists in work contacts also. There is also a trend for these children to be selected to run errands or perform classroom management and maintenance tasks less often.

The teachers behave favorably toward these students when they do have individual work contacts with them. They provide high rates of process feedback and low rates of criticism, suggesting a low affect, high problem-solving approach. Low affect is also seen in the data for total praise and criticism of academic performance. The indifference students are lower on both of these measures than their classmates.

In summary, students in the indifference group are generally passive and tend to avoid contact with the teachers, who in turn respond to them in much the same way. There is no evidence of teacher attempts to "go after" these students in compensation for their tendency to avoid contact. The teachers respond appropriately (although with little affect) when they do contact these students, but they show no particular concern about them. In many ways their treatment of these students is in sharp contrast to their treatment of the concern group, underscoring the accuracy of the teachers' perceptions of their feelings about both groups.

Rejection

These children are very active in the classroom. They create many more procedure and work contacts with the teachers, and they call out a lot of answers in reading group (but not in general class activity). They are similar to their classmates in rates of reading errors and percent of questions answered correctly in general class activities. There is a trend for them to answer

reading group questions incorrectly a higher percent of the time, however.

In addition to being active in academic situations, these high saliency students have an extreme number of behavioral contacts with their teachers. Thus, these children are placing frequent demands upon the teachers. How, then, do the teachers react?

To begin with, these children have many fewer public response opportunities than their classmates. However, they call out more answers than the others, and the teachers ask them just as many direct questions. Thus, the difference in total response opportunities is due to the low frequencies of open questions being answered by these children. This could be attributable either to the children (they don't raise their hands) or to the teachers (they don't call on these children when they volunteer). Unfortunately, the data do not tell us which situation is the true description.

There is some evidence from other measures that the teachers tend to avoid rejection children in public situations. For example, these children receive fewer reading turns. Furthermore, the teachers frequently fail to give feedback to these students after their reading turns and after they respond to questions, suggesting that the teachers may want to move on quickly to someone else.

The teachers do initiate more individual contacts with rejection students. Perhaps they prefer to deal with them in private situations when possible. However, rejection children are more likely than their classmates to be criticized when they seek out the teachers for private work contacts, and they are generally criticized more for their classroom behavior and work.

Thus, several measures show teachers to be rejecting and avoiding this group.

DISCUSSION

Although the data in this study were drawn from first grade classrooms and from schools representing three distinct socio-economic levels, they parallel the data obtained by Silberman in most aspects. Particularly, teacher treatment of the indifference and the concern students was quite similar in both studies. The data support Silberman's conclusion that teachers' attitudes toward children do correlate with differential teacher behavior; however, the present data also suggest that all four teacher attitudes lead to differential teacher behavior. Silberman reported differential teacher behavior toward concern and indifference students, but found little evidence that teachers differentially treated students they felt attached to or that they rejected.

Teachers in this study did interact in distinct ways with their attachment students. Although there was no gross favoritism, these teachers provided attachment students with additional support in subtle ways.

The findings for the concern students parallel Silberman's, and the data for indifference students confirm, but extend somewhat, his conclusions. Specifically, both studies found that indifference students do not approach the teacher, nor does the teacher approach them. However, it was noted in the present study that these children were seldom praised or criticized in academic work situations, even though their performance was similar to other students. Thus, these children have little contact with the teacher, and when they do have contact, it seldom results in strong evaluative comment.

The findings for the rejected students differ somewhat from the data reported by Silberman. He reported that teachers had similar contact frequencies with rejected students as with others, but that they both praised and criticized them more frequently. However, in this study the teachers avoided initiating contacts with these children. Also, they often failed to provide these students

with feedback about their work, and when they did provide feedback, it was much more likely to involve criticism than feedback given to other children. Perhaps this discrepancy between findings is due to the fact that Silberman's behavioral data were collected after attitude information was obtained from the teachers. Also, this research distinguished among work, procedure, and behavior contacts, while Silberman lumped them together. In any case, it is clear that teachers in this study rejected and avoided rejection students.

The two-way analyses of variance indicate that the school environment has little effect upon how the different attitude groups are treated in the classroom. To the extent that teachers do differentiate in their behavior toward attachment, concern, indifference and rejection children, similar results will occur in dissimilar schools. The number of schools and teachers studied here was small, but the extensive observational data taken in the classrooms argue strongly that the obtained differences in this sample do characterize the real behavior of these teachers. In combination with Silberman's, the data suggest that the attitudes teachers hold toward students do influence the ways in which they interact with those students. These data show, as Jackson and Lahaderne (1967) have previously reported, that classroom life is an uneven affair, with some students receiving much more teacher contact than others. Teachers' attitudes toward students will affect the quality and quantity of contacts they have with students. More studies in this area are needed, particularly at the secondary level, to achieve clearer understanding of how teacher attitudes structure teacher-child interaction.

Teacher attitudes can change, of course, especially in response to disconfirming student behavior. Studies of student attributes that influence the formation and change of teacher attitudes are also needed to complement the present line of research. Feshbach's (1969) work, for example, showed that student teachers prefer conforming and passive students. To date, the behavioral

characteristics of concern and rejection students are largely unexplored. These groups appeared similar in the present study, yet certain unknown characteristics caused the teachers to become concerned about and work harder with the first group, but to reject and avoid the second group.

Studies of other child characteristics that may systematically affect teachers' attitudes would also be useful. For example, how do teachers respond to the child who asks endless but relevant questions, or to the very dependent child, or to the class clown? Such children may provoke predictable teacher attitudes and behavior.

Studies of stability in teacher attitudes are also needed. This includes stability in the attitudes of a single teacher over the course of a school year, as well as agreement across teachers in attitudes toward particular students. Where the same child is viewed the same way by several successive teachers, it is likely that self-fulfilling prophecy effects and cumulative effects of systematic differential treatment would appear. The authors are presently conducting a follow-up study of these same children, now in second grade, to provide some data on stability across teachers in attitudes toward the same children.

Table 1. Sex and achievement status of children in the four attitude groups

	Attachment	Indifference	Concern	Rejection
Sex:				
% Boys	44	58	46	68
Achievement Rank:				
% in top third	75	0	11	8
% in middle third	21	50	14	29
% in bottom third	4	50	75	63

FOOTNOTES

[1]This research was supported in part by a grant from the National Institutes of Health, United States Public Health Service (MH 19316-01), Thomas L. Good, principal investigator. The authors gratefully acknowledge the coding assistance of Candy Chazanow, Suzi Good, Teresa Harris, and Sue Jones, and acknowledge Susan Florence for typing the manuscript.

[2]Requests for reprints should be addressed to Dr. Jere Brophy, Department of Educational Psychology, The University of Texas, Austin, Texas 78712.

[3]Due to space limitations, an extended table summarizing the analysis of variance data could not be included in this article. This table is in the more extended report that will be sent upon request. The findings reported in this article were significant at the .05 level or better, except for a few (labeled in the text as "trends") where the level of significance was between .05 and .10.

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Table 2. Analysis of variance data comparing standardized score means of students in each attitude group with means for students not in the group.

	Attachment			Concern			Indifference			Rejection		
	1	2	p	1	2	p	1	2	p	1	2	p
A. Student Performance Indicators												
A1 Correct answers/Total answers	-.0603	.4837	.0087	.0842	-.7111	.0003	-.0028	.0122	.9505	.0122	-.1404	.5248
*A2 (R.G.) Correct answers/ Total answers	-.0457	.4745	.0107	.0576	-.3717	.0342	.0230	-.1433	.5088	.0442	-.3590	.0832
A3 Errors per reading turn	.0383	-.4695	.0121	-.0669	.3762	.0278	-.0356	.2046	.6713	.0001	-.2354	.3157
A4 Wrong answers/Wrong + no response	-.0662	.4981	.0105	.0621	.4413	.0142	.0075	-.1449	.5799	-.0126	.0691	.7608
*A5 (R.G.) Wrong answer/ Wrong + no response	-.0349	.2470	.1691	-.0141	.0855	.6364	.0359	-.5340	.0272	-.0134	.0921	.6609
B. Frequencies of each type of teacher-student interaction												
B1 Response Opportunities (direct, open, call-outs)	-.0306	.3070	.0903	-.0368	.3586	.0469	.0552	-.5171	.0092	.0490	-.5005	.0104
*B2 (R.G.) Called on by teacher	.0160	-.1796	.6588	-.0818	.6347	.0007	.0111	-.1824	.5970	-.0053	-.0037	.9903

Table 2. (continued)

*B3	(R.G.) Called out answer	-.0105	-.0019	.9654	-.0329	.1846	.2879	.0288	-.4312	.0413	-.0751	.6914	.0009
B4	Reading turns	-.0915	.8633	<.0001	.0252	-.1089	.5126	.0510	-.4311	.0298	.0764	-.6498	.0013
B5	Work recitations	-.0100	.0697	.6852	.0186	-.1694	.6651	-.0026	.0107	.9489	-.0343	.3185	.0871
B6	Self-reference questions	-.0087	.0698	.6989	-.0144	.1174	.5201	.0280	-.2981	.1349	-.0267	.2307	.2322
*B7	(R.G.) Self-reference questions	.0086	-.0902	.6352	-.0052	.0244	.8799	.0164	-.2038	.6623	-.0003	-.0490	.8229
B8	Self-reference recitations	.0115	-.0544	.6765	.0157	-.0892	.5086	-.0270	.3351	.0313	-.0111	.2398	.1256
B9	Total teacher initiated procedure contacts	-.0322	.1710	.6808	-.0778	.5527	.0022	.0245	-.3783	.0669	-.0342	.2171	.2500
B10	Total student initiated procedure contacts	-.0470	.2313	.1499	-.0086	-.0903	.6792	.0217	-.4264	.0334	-.0792	.5514	.0028
B11	Total teacher initiated work contacts	.0169	-.3189	.0905	-.1332	.9375	<.0001	-.0058	-.1565	.5015	-.0481	.2576	.1538
B12	Total student initiated work contacts	-.0598	.4168	.0156	-.0456	.2982	.0803	.0445	-.5699	.0049	-.0575	.4322	.0205
B13	Total behavioral contacts/ Total work contacts	.0418	-.3490	.0514	-.0036	.0312	.8587	-.0153	.1618	.5661	-.0853	.8627	.0001

Table 2. (continued)

C. Teacher vs. student initiation of contacts

C1 Direct questions/ Direct + open questions	.0484	-.2348	.1627	-.0189	.3141	.0994	-.0028	.2605	.2716	-.0023	.2330	.3175
C2 Direct questions/ Response opportunities	.0587	-.3187	.0657	.0022	.1489	.5115	.0090	.1297	.6294	.0135	.0766	.7844
C3 Open questions/ Response opportunities	-.0595	.2040	.1826	-.0061	-.2373	.2442	-.0236	-.1233	.6756	.0069	-.4398	.0433
C4 Call-outs/Response opportunities	-.0452	.1305	.6262	-.0193	-.0840	.7411	.0061	-.4274	.0571	-.0449	.1766	.3173
*C5 (R.G.) Call-outs/Total response opportunities	-.0217	.1105	.5266	-.0008	-.0610	.7668	.0356	-.5556	.0151	-.0727	.7630	.0006
C6 Total student initiated contacts (work and procedure)	-.0548	.3543	.0348	-.0337	.1772	.2840	.0479	-.6313	.0019	-.0687	.5101	.0060
C7 Total teacher-initiated contacts (work and procedure)	.0077	-.2119	.2773	-.1264	.9105	<.0001	.0129	-.3165	.1329	-.0581	.3766	.0424

Table 2. (continued)

C8 Student-initiated work contacts/Total student-initiated contacts	.0017	.1035	.6241	-.0133	.2213	.2483	-.0076	.2538	.2728	.0435	-.2943	.1267
C9 Teacher initiated work contacts/Total teacher-initiated contacts	.0445	-.3094	.0758	-.0154	.1897	.3115	-.0306	.3954	.0508	.0091	-.0142	.9112
C10 Student initiated work contacts/Total work contacts	-.0736	.5894	.0012	.0048	-.0639	.7330	.0617	-.6748	.0011	-.0214	.1371	.5295
C11 Student initiated procedure contacts/Total procedure contacts	-.0347	.2296	.1908	.0200	-.2316	.2058	.0255	-3458	.0859	-.0477	.3652	.0513
D. Type of teacher questions												
D1 Process questions/Total questions	-.0556	.4963	.0048	-.0140	.1568	.6131	.0265	-.2565	.2140	.0220	.2124	.2959
*D2 (R.G.) Process questions/ Total questions	-.0037	.0203	.8965	-.0788	..6347	.0004	.0046	-.0748	.7323	-.0058	.0524	.7890
D3 Choice questions/Total questions	.0400	-.3452	.0550	-.0125	.0825	.6469	-.0055	.0395	.8447	.0311	-.3793	.0748

Table 2. (continued)

*D4 (R.G.) Choice questions/												
Total questions	-.0152	.2534	.1868	.0258	-.0825	.6042	-.0041	.2453	..3120	-.0023	.2075	.6244
D5 Self-reference questions/												
Total response opportunities	.0062	-.0530	.7694	.0085	-.0743	.6934	.0016	-.0223	.9172	-.0404	.4291	.0374
*D6 (R.G.) Self-reference questions/												
Total response opportunities	.0104	-.0384	.8078	.0457	-.3274	.0654	.0214	-.2041	.6360	.0289	-.3133	.1415
E. Teacher praise and criticism												
E1 Praise after correct answers/												
Total correct answers	-.0171	.1564	.5937	-.0245	.2255	.2321	-.0103	.1581	.5048	-.0062	.0383	.8452
*E2 (R.G.) Praise after correct answers/												
Total correct answers	-.0064	.1203	.5451	-.0153	.1926	.3126	.0319	-.3038	.1698	.0020	.0458	.8503
E3 Praise after reading turn/												
Total reading turns	-.0011	.1473	.5238	.0168	.0028	.9437	.0209	-.0553	.7554	.0418	-.3215	.1170
E4 Praise in student initiated work contacts/Total student initiated work contacts	.0016	.0719	.7353	.0005	.0899	.6862	.0029	.0921	.7212	.0121	.0053	.9752

Table 2. (continued)

E5 Praise in teacher initiated work contacts/Total teacher initiated work contacts	-.0849	.7600	.0001	.0116	-.0350	.8190	.0107	-.0345	.8357	.0302	-.2068	.2853
E6 Total praise of academic work	-.0747	.8203	.0001	-.0138	.3103	.1077	.0595	-.3855	.0433	.0317	-.1638	.6259
E7 Total behavioral praise	.0127	-.1332	.5792	-.0211	.1492	.6564	-.0250	.2290	.1921	.0023	-.0462	.7972
E8 Criticism after wrong answers/ Total wrong answers	.0279	-.1306	.2918	.0137	-.0718	.6697	.0116	-.1052	.6520	-.0132	.2365	.2935
*E9 (R.G.) Criticism after wrong answer/Total wrong answers	.0333	-.1757	.2969	-.0056	.1071	.5747	.0231	-.2237	.6286	.0095	.0149	.9796
E10 Criticism following no response/Total no response	.0117	-.1168	.5012	.0229	-.1018	.6440	-.0115	.1663	.6342	.0127	-.1169	.5158
*E11 (R.G.) Criticism after no response/Total no response	.0111	-.0493	.7957	.0412	-.2421	.1732	-.0041	.1252	.6242	-.0100	.1656	.5309

Table 2. (continued)

E12 Criticism at end of reading turn/												
Total reading turns	-.0015	-.0889	.6284	-.0017	-.0872	.6357	.0019	-.1745	.5873	.0051	-.1828	.6417
E13 Criticism in student initiated work contacts/Total student initiated work contacts	.0058	.0267	.9168	-.0208	.2505	.2127	-.0142	.2653	.2608	-.0510	.6003	.0050
E14 Criticism in teacher initiated work contacts/Total teacher initiated work contacts	.0545	-.3424	.0505	.0199	-.0608	.7026	.0520	-.4072	.0389	.0165	.0123	.9822
E15 Criticism after reading errors/ Total reading errors	.0012	.0442	.8229	.0139	-.0634	.6833	.0181	-.1622	.5629	-.0140	.2926	.1913
E16 Total criticism of academic work	.0511	-.2839	.0991	-.0168	.2842	.1395	.0726	-.5858	.0036	-.0317	.5199	.0118
E17 Total behavioral criticism	.0188	-.1956	.2855	-.0330	.2377	.1737	.0506	-.5785	.0043	-.0634	.6110	.0020
E18 Warning/Warning + criticism	.0233	-.1380	.5465	.0233	-.1264	.5279	-.0132	.2574	.2833	.0286	-.2348	.2292

Table 2. (continued)

F. Teacher persistence in eliciting responses

F1 New questions following right answers/Total right answers	.0262	-.2095	.2517	-.0220	.1870	.6804	-.0095	.1227	.6003	.0005	-.0283	.8986
*F2 (R.G.) New question after right answer/Total right answers	-.0065	-.2350	.2495	-.0684	.2701	.0846	-.0122	-.2763	.2683	-.0361	.0041	.8578
F3 % stays with student following failure	.0176	-.1903	.6494	-.0399	.2234	.1997	-.0301	.3095	.2030	-.0352	.2745	.2459
*F4 (R.G.) % stays with student following failure	-.0028	-.0304	.8883	-.0271	.1582	.6293	-.0340	.3798	.1072	.0210	-.3058	.1611
F5 % stays with student following reading errors	-.0117	.0472	.7898	-.0499	.3472	.0577	.0140	-.2682	.2771	-.0148	.0634	.7680
F6 Repeats question/Repeats + gives help (failure situations)	-.0410	.2542	.3116	.0113	-.1471	.5052	-.0248	.1020	.6785	-.0493	.3418	.1934
*F7 (R.G.) Repeats question/ repeats + gives help (failure situations)	.0181	.0056	.9606	-.0414	.3782	.0551	.0049	.1639	.5929	.0104	.0412	.9127

Table 2. (continued)

F8 Repeats question/Repeats + gives help (after reading errors	-.0125	.2309	.6476	.0418	-.1971	.6628	.0370	-.3817	.2268	.0271	-.0841	.7372
G. Level of feedback given to the student												
G1 Process feedback/Response opportunities	.0133	-.2779	.1487	-.0716	.4249	.0137	.0105	-.3726	.1065	-.0328	.1303	.5150
G2 Process feedback/Product feedback	-.0061	-.2404	.6768	-.0916	.3184	.0392	-.0002	-.4027	.1377	-.0431	.1275	.5416
*G3 (R.G.) Process feedback/Total response opportunities	.0432	-.3253	.0688	-.0378	.3377	.0635	-.0017	.0641	.7861	-.0220	.1915	.6354
*G4 (R.G.) Process feedback/Product feedback	.0486	-.3434	.0879	-.0160	.2146	.2941	.0010	.1369	.6340	-.0177	.3477	.1508
G5 Process feedback after reading errors/Product feedback after reading errors	.0055	-.1177	.6126	-.0049	-.0150	.9630	-.0061	-.0055	.9935	.0222	-.4292	.1127
G6 Process feedback at end of reading turn/Total reading turns	.0225	-.2371	.1720	-.0052	-.0147	.9594	.0141	-.2618	.2283	.0174	-.2561	.2105

Table 2. (continued)

G7 Process feedback in student initiated work contacts/Total student initiated work contacts	.0372	-.1949	.2631	-.0022	.1045	.6320	-.0197	.3406	.1434	-.0095	.1994	.6269
G8 Process feedback in teacher initiated work contacts/Total teacher initiated work contacts	.0551	-.4037	.0240	-.0400	.3946	.0354	-.0558	.6363	.0024	-.0422	.3014	.1059
G9 Total process feedback	.0616	-.5107	.0052	-.0958	.8064	.0001	-.0023	.0297	.8821	-.0221	.1568	.5789
G10 % of responses in which teacher gives no feedback	-.0029	.0474	.8032	.0234	-.1671	.6414	.0205	-.2123	.6629	-.0334	.3887	.0701
*G11 (R.G.) % no feedback/ Total response	.0135	-.0512	.7528	.0435	-.2967	.0949	.0016	.0684	.7842	.0308	-.2668	.2057
G12 No feedback after reading turn/Total reading turns	.0278	-.2193	.2289	-.0150	.1250	.5049	-.0076	.1020	.6628	-.0313	.3483	.1039