Silent Sixth-Grade Students: Characteristics, Achievement, and Teacher Expectations

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Abstract

This exploratory study examined student-teacher interactions in a team of 4 sixth-grade teachers and their 101 students in 1 middle school. Student-teacher interactions were recorded, and teachers' rankings of students' predicted achievement, as well as students' achievement test scores, were obtained. 32 "silent" students were identified and interviewed. Results indicated that silent students were not significantly different from other students with respect to gender, race, or achievement. Although teachers tended to distribute their questions equitably across all students, silent students attempted to avoid classroom interactions whenever possible. Silent students appeared to use their silence as a means to control the classroom environment and avoid taking risks.

Previous studies have shown that a few verbally active students tend to dominate classroom interactions. These "target" students are typically high-achieving white males (Jones, 1990; Tobin, 1988). In addition, nearly one-third of all students do not participate in whole-class interactions and are virtually silent (Jones, 1990; Sadker & Sadker, 1985; Tobin & Gallagher, 1987). There is evidence that verbally active students are high achievers, but what are the characteristics of "silent" or quiet students? Are these noninteracting students low achievers? These questions have yet to be examined. In the exploratory study reported in this article, we used qualitative and quantitative methods to examine characteristics of silent students, their achievement, teachers' expectations for these students' performance, and the relationship of academic subject to classroom interactions.

Background

During the last 25 years, increasing research has focused on the influence of student-teacher interactions on cognitive development. Student involvement in class discussions is a major component of effective instruction, and the benefits of interactions for students can be considerable. Instructional discourse not only provides students with information needed to be academically successful but also provides students with cognitive strategies they need to derive meaning from new information.

National reform efforts have focused on increased dialogue between students and teachers as a critical pedagogical strategy. The National Council of Teachers of Mathematics (1989), for example, called for increased instruction that involves students in problem-solving situations where they can discuss ideas to clarify, refine, and consolidate their thinking.

Research has shown that many types of classroom interactions can lead to higher achievement and more positive attitudes (Flanders, 1970). The relationship between classroom interactions and achievement is not typically a simple linear function but may be curvilinear and dependent on the type of lesson, the student's ability, and the emotional climate of the classroom (Brophy & Good, 1986; Soar, 1977; Soar & Soar, 1979).

Interactions and discussions can play a valuable role in providing students with feedback regarding the correctness of their beliefs and understandings. Discussions can promote the understanding of differing points of view and can accelerate the loss of egocentrism (Perret-Clermont, 1980). In addition, classroom interactions provide students with information they can use to assess their own academic and social capabilities (Stanworth, 1983).

Teachers also benefit from class discussions and interactions. Information about the effectiveness and structure of lessons can be gained from students' questions and comments. By observing interactions, teachers can determine how well their students understand and integrate the information they teach (Gall & Gillett, 1980). Classroom interactions enable teachers to pace their lessons and provide instruction at an appropriate level of difficulty (Tobin, 1988). A lesson that is too difficult or too easy becomes obvious to the teacher after a few selective questions.

There are other benefits from instructional discourse, such as the opportunity for students to compare themselves to others and discover their strengths and weaknesses. Whole-class interactions reveal which students can understand a concept quickly and which require more time. A socialization process occurs as students learn to function as members of a class and to work with others in achieving common goals and solving problems.

Although research has demonstrated the importance of interactions to learning, not all students participate equally in instructional processes. Typically, teachers select only a small percentage of students to participate in class discussions, and only a few students tend to initiate interactions. Teachers' expectations significantly influence which students teachers interact with.

The influence of teachers' expectations on student achievement was first demonstrated with the *Pygmalion in the Classroom* studies (Rosenthal, 1974; Rosenthal & Jacobson, 1968). These initial studies showed that, when randomly selected students were artificially described to their teachers as having potential for remarkable academic growth, these "labeled" students exhibited significant gains in IQ when compared to other students in the school. Other researchers have also documented similar effects (McDonald & Elias, 1976; Meichenbaum, Bowers, & Ross, 1969).

Teachers often communicate differential expectations they hold for students through interaction patterns. Rosenthal and Rubin (1978) suggested that teachers' expectations are mediated through four factors: climate (social-emotional relationships), input

(teacher investment with special students), output (encouragement, opportunities to respond and ask questions), and feedback. Components of each factor can be communicated through classroom interactions.

Differential teacher expectations have not been limited to perceptions of student ability but also include differences based on gender and race. Eaves (1975) found that white teachers rated black male students as more deviant than white males. Rubovits and Maehr (1973) demonstrated that black students received significantly less attention and praise than white students. A number of studies have shown that teachers have different expectations and behave differently toward female and male students. Male students typically receive more overall interactions than females (Good, 1970; Good, Sikes, & Brophy, 1973; Jones & Wheatley, 1989, 1990; Sadker & Sadker, 1985). Specifically, male students tend to receive more praise (Jones & Wheatley, 1990; Meyer & Thompson, 1956; Simpson & Erickson, 1983), more criticism (Meyer & Thompson, 1956; Simpson & Erickson, 1983), and are asked more higher-order questions than females (Becker, 1982; Good et al., 1973; Smith & Farina, 1984). In a study of high school geometry classes, Becker (1982) found that male students received 70% of class interactions that were beneficial for student learning.

Additional data indicate that teacher-expectation effects are compounded when both sex and ability are considered. Good et al. (1973) found that teachers tended to interact most often with high-achieving males, whereas low-achieving females tended to receive the fewest interactions.

Studies have shown, however, that not all teachers communicate different expectations for students through classroom interactions. Moreover, students may encounter different expectations from teachers of various subjects, as well as from different teachers from one year to the next (Raudenbush, 1984). Teachers vary in their tendency to be proactive as well as overreactive toward students of different abilities, genders, and races (Good & Brophy, 1987). The context of interaction also appears to affect the degree to which differential treatment exerts an expectation influence on students (Cooper, 1979; Cooper & Good, 1983; Horn, 1984; Smith, 1980). In addition, students themselves reciprocally influence teachers through their own behavioral characteristics (Good & Brophy, 1990).

Several recent studies have shown that a few target students tend to dominate and monopolize classroom interactions (Jones, 1990; Sadker & Sadker, 1985; Tobin, 1988; Tobin & Garnett, 1987). These students tend to be white, high-achieving males (Jones, 1990; Tobin, 1988). According to Tobin (1988), target students tend to be risk takers, frequently raising their hands to volunteer answers during whole-class instruction. Tobin also found that target students tended to remain target students from one year to the next.

Silent Students

At the opposite end of the interaction continuum are those who do not interact at all during whole-class discussions. Sadker and Sadker (1985) first reported that nearly 25% of the fourth-, sixth-, and eighth-grade students they observed did not participate in any interactions. In a study of 56 secondary science classes, Jones (1990) found that nearly 30% of all students were completely silent. Little is known, however, about the characteristics of these students who, unlike target students, typically do not engage in classroom interactions.

Good (1981) proposed a student passivity model in which some students learn to become intellectually and verbally passive in classrooms because of differential teacher feedback. This model suggests that low achievers become less involved in classwork over time because teachers call on them less often, give them less wait time, give them terminal rather than sustaining feedback, and fail to praise their successes (Good, Slavings, Harel, & Emerson, 1987).

Low achievers may also experience more variable behavior from their teachers, and, when faced with these inconsistencies, low achievers may avoid initiating interactions and may become passive to cope with the diverse classroom contexts they encounter (Good & Brophy, 1987). Although some low achievers may be passive and elect not to interact, there is little evidence that the 20%–30% of silent students found in most classrooms are typically low-achieving or low-expectation students.

Brophy and Evertson (1981) described other noninteracting students, termed "invisible." These students had low rates of behavioral contacts and response opportunities with teachers. Invisible students were passive in whole-class, as well as in small-group, activities. Brophy and Evertson suggested that these students avoided teachers except when they needed help and were typically inactive, passive, and detached.

Silberman (1969) and Good and Brophy (1972) examined differential teacher behavior toward students and identified a category of students they called "indifferent." These students were seldom noticed by teachers and were typically passive in class. Good and Brophy (1972) reported that these students initiated few responses with teachers, and when they "[did] not know an answer to a question, they [were] more likely to remain silent than to offer a guess" (p. 621). Although teachers asked indifferent students just as many direct questions as other students, indifferent students avoided contacts with the teachers. Indifferent students were identified by teachers' reports, and the researchers did not examine the underlying reasons for the reticence of these students.

It is not apparent from examining prior research whether silent students are merely passive or are uninvolved. Fong (1987) suggested that, although most educators hold it as a truth, the notion that silent students are uninvolved learners is false. According to Fong (1987, p. 29), teachers believe that "silence is . . . a mark of apathy, an inability or unwillingness to participate, a dereliction of civic duty. Silence is a stigma." Although Fong suggested that this perspective of silent students may be incorrect, he provides no data to support his supposition.

The purpose of the present study was to investigate the academic and personal characteristics of silent students and to examine how these students interact across different classes, subjects, and teachers. The following questions were investigated: (1) What are the characteristics of silent students? (2) Do silent students tend to be silent in all of their classes, or do classroom interactions change with different subjects? (3) Are silent students low achievers? (4) Do teachers hold low expectations for silent students?

Method

In this study, we used qualitative and quantitative methods to examine classroom interaction patterns and characteristics of students who tend to interact infrequently in class. Observations were made of a middle-school team consisting of four content-area teachers and the 101 students whom they shared. Quantitative data included interaction patterns, California Achievement Test (CAT) scores, and teachers' ranks of student achievement. Qualitative data on personal and academic characteristics of silent students were collected through observations and interviews.

Subjects

The study focused on a single sixth-grade middle school team consisting of four teachers, one from each of four content areas (science, mathematics, language arts, and social studies), from a large middle school located in a mixed urban community in North Carolina. The racial composition of the school included 65% white, 29% black, and 6% other races. Three of the teachers were female and one was male. The teachers volunteered to participate in the study. They were told that we were examining interaction patterns of students

and how interactions varied in different classes.

Each teacher taught four classes of a single subject, and the four teachers taught the same 101 students. The classes were grouped by ability for language arts and mathematics but were grouped heterogeneously for science and social studies.

Procedure

The study began early in the spring semester with 5 consecutive days of observation of the four science classes. The four social studies, language arts, and mathematics classes each were then observed for 3 consecutive days. The result was a total of 14 observations of each student, which included repeated observations in each subject. Interactions were recorded with the Brophy-Good Teacher-Child Dyadic Observation Instrument (Brophy & Good, 1969). This instrument was selected because it allows the observer to record not only the quantity but also the quality and sequencing of interactions. Dyadic interactions that occurred between individual students and the teacher were coded into 43 categories. We used the categories of direct questions, open questions, and student-initiated interactions to examine differences between students' interactions.

The first and last 5 minutes of each 40-minute class were not used in the observation, and observations were not made if testing was planned. Student sex and race were indicated on seating charts by means of a numbering system. All observations were made by the first author. Intercoder reliability between the investigator and another researcher experienced in using the instrument was determined at the beginning (.82) and end (.80) of the study by computation of the ratio of exact agreement of the coders to the combined total of exact agreements, plus omissions and disagreements, for each category, as described by Brophy and Good (1969).

Students were labeled as silent if their mean number of initiated interactions with the teachers was fewer than one (across all the days of observation for that class) for three of their four academic subjects and if they had an overall mean of fewer than one initiated interaction for the 14 classes observed. Teacher-initiated interactions, such as direct questions, were not used to determine student silence, since the student has no control of the interaction sequence. Categories of interactions examined to define silence were: (1) open questions, in which the student raises a hand to volunteer a response to a question; (2) student-initiated interactions, in which the student raises a hand to initiate a comment or question; or (3) responses, in which a student calls out a response without waiting to be called on by the teacher. According to this operational definition, a student was classified as silent even if he or she volunteered to interact in one of the four subject-area classes, so long as the student averaged less than one student-initiated interaction overall. Only one student initiated no interaction in any of the 14 observations.

California Achievement Test scores were obtained from students' records. All students had taken the CAT approximately 10 months before the study. The scores were coded into quartiles corresponding to the quartiles achieved by the school system.

To assess teachers' expectations, we asked the four teachers individually to rank the 101 students from highest to lowest on predicted achievement for that school year. A set of cards with students' names was used for the ranking task. Each student received a ranking for mathematics, science, language arts, and social studies. After the classroom observations, we interviewed teachers and asked them to describe each silent student identified in the study. The interviews were audiotaped and transcribed for analysis.

We conducted semistructured interviews individually with 30 of the silent students. Students were asked in a standard, written question format, about interests and hobbies, their teachers, and their partici-

TABLE 1. Gender, Race, and Achievement of Silent and Nonsilent Students

Variable	Students	
	Silent	Nonsilent
Gender:		
Female	21	41
Male	11	28
Race:		
White	19	55
Black	10	11
Other	3	3
Achievement Test Scores (Quartiles):[a]		
0%–25%	12	29
26%–50%	5	22
51%–75%	10	9
76%–100%	5	9

NOTE.—Chi-square nonsignificant for gender, race, and achievement.

[a]Quartiles are based on achievement levels of the school system.

pation in their classes (see Appendix). The interviews were audiotaped and transcribed.

Analyses

Frequencies of the Brophy-Good interaction categories of student-initiated interactions, direct questions, and open questions were obtained for each class in the four content areas. In order to examine student interactions across different classes, the frequencies of each type of interaction were converted to a standard score that represented the percentage of interactions that each student in the class contributed for that class. This scoring procedure allowed the comparison of contributions of individual students (and groups of students) across different types of lessons and different teachers' classes. These adjusted scores were analyzed by analysis of variance (ANOVA). Differences between silent and nonsilent students' race, gender, and achievement were analyzed by means of a chi-square test.

The student and teacher interview transcripts were cut up according to question type, and categories of answers were grouped as described by Erickson (1986). We examined the transcripts for evidence of student characteristics such as solitary or group interests and hobbies, as well as of students' views about participating in class. Response types were counted and subgrouped into themes and patterns of responses. We also examined student interview transcripts within and across students. As categories were created, responses were compared and contrasted across students and questions (Miles & Huberman, 1984). We compared conclusions with data from the classroom observations, teacher rankings, teacher interviews, and student achievement scores. The student interview data must be interpreted in light of the fact that we interviewed only silent students. It is not possible to determine the degree to which the interview responses are unique to silent students or whether their responses are characteristic of students in this middle school.

Results

Silent Students

Thirty-two students (31.7%) were identified as silent students (21 female and 11 male). Nearly 60% of the silent students were white, 31% were black, and 9% were other races. There were no significant differences for silent versus nonsilent students for gender, $\chi^2(1, N = 101) = 0.35$, N.S., or for race $\chi^2(2, N = 101) = 4.46$ (see Table 1).

Achievement scores for silent and nonsilent students are also shown in Table 1. There were no significant differences in the proportion of silent and nonsilent students at each achievement level, $\chi^2(3, N = 101) = 6.23$, N.S. The data from this study thus fail to support the assumption that silent students are disproportionately low achievers.

Subject Interactions

The ANOVA revealed significant differences between silent and nonsilent students for student-initiated interactions for all sub-

TABLE 2. Student Interaction Behaviors

Subject	Students: Silent $\bar{X}$	Silent SE	Nonsilent $\bar{X}$	Nonsilent SE	F	p
Student-initiated interactions in:						
Science	.96	1.13	5.03	.75	4.19	.04*
Social studies	.75	1.13	5.45	.75	6.52	.01*
Mathematics	.60	1.28	5.37	.63	4.80	.03*
Language arts	.39	.85	5.88	.56	20.66	.00***
Direct questions:						
Science[a]	1.91	1.06	4.62	.69	2.16	.14
Social studies	4.38	1.04	3.40	3.40	.16	.68
Mathematics	3.61	.93	4.05	.61	1.30	.25
Language arts	4.07	.81	3.69	.53	.38	.54
Open questions:						
Science	1.54	1.54	5.06	.35	25.18	.00***
Social studies	1.54	.58	4.93	.38	14.56	.00***
Mathematics	2.53	.60	4.67	.39	5.84	.02*
Language arts	3.27	.98	4.13	.64	.30	.58

[a]The partial sum of squares was not significant. The sequential sum of squares was significant, which indicates that the silent variable may be colinear with some of the higher-order interactions.

*$p < .05$
***$p < .001$

jects (Table 2). Overall, nonsilent students initiated over seven times as many interactions with the teacher as did silent students.

There were no significant differences for teachers' direct questions for silent and nonsilent students for any of the four subjects (Table 2). This category includes interactions in which the teacher calls on students directly without waiting for students to raise their hands or otherwise indicate a desire to participate in the discussion. The four teachers in this study distributed their direct questions proportionately across all the students regardless of student initiation.

Open questions are those in which the teacher asks a question and then waits for students to raise their hands, which indicates interest in answering the question. There were significant differences in the frequencies of responses to open questions between silent and nonsilent students for science, mathematics, and social studies (Table 2). Although nonsilent students in language arts volunteered to answer more open questions than silent students, this difference was not significant.

The ANOVA revealed no significant two-way statistical interactions between silent and nonsilent students by achievement for direct questions or open questions. In general, silent and nonsilent student interactions for open questions and direct questions did not significantly differ across the four achievement levels. However, one significant statistical interaction occurred for achievement by silent-student status for student-initiated interactions in language arts. High-achieving silent students (those in the top quartile) had a mean of zero initiated interactions with their teacher across the 3 days of observation. These language arts classes were ability grouped, and the class discussions were particularly fast paced and competitive. The competitive atmosphere may have contributed to silent students' decision not to participate in class discussions.

There were no significant two-way interactions between student gender and si-

TABLE 3. Mean Teacher Ranking by Achievement Level

Achievement Quartile	Silent Students		Nonsilent			
	$\bar{X}$	SE	$\bar{X}$	SE	F	p
4	91.6	6.8	83.5	5.0	.06	.98
3	85.1	4.7	73.4	5.0		
2	59.8	6.8	51.7	3.2		
1	33.4	4.4	24.8	2.6		

NOTE.—California Achievement Test scores were used as a measure of achievement.

lent-student status for any of the classroom interaction variables. Thus, the frequencies of interactions were similar for male and female silent students.

Teachers' Expectations

The relationship between teachers' rankings of predicted achievement (a measure of teacher expectations) and actual achievement (CAT scores) of the silent and nonsilent students was analyzed by means of ANOVA (Table 3). The interaction between teacher rank and achievement was not significantly different for silent and nonsilent students. This suggests that teachers did not perceive the silent students' achievement as different from their actual achievement.

Silent Students' Profiles

Interviews with 30 of the silent students revealed that these students shared a set of common characteristics. They typically described themselves as shy (72%). One silent student said: "I don't talk much in class discussions. I really don't want to share myself. I just keep to myself what I think because I'm shy. I think I don't know things well." Another student stated, "I'm shy because we move a lot, and every time we move I have to start over with making friends, and I just get tired of it."

Nearly 40% of the silent students indicated that they had few or no friends. They tended to have solitary hobbies such as watching television, collecting coins, or reading.

When asked to describe how they differed from other students in the class, half of the silent students indicated that they liked to work alone, and many thought they were more cautious than other students. Specifically, they did not like to follow the crowd in thought or action. For example, one student said, "I don't like to do what everyone else does. Some people like to do drugs, and I don't do drugs or drink. Some people like to stay in a lot of trouble."

A large proportion of the silent students interviewed (67%) indicated that they were serious about their schoolwork and wanted to do well. Their comments included: "I like to listen to the teacher," "I really care about my grades," "I pay attention to my work more than I talk," "I don't talk much in class," and "I talk only a little in class because you have to learn and listen."

The cultural background of three of the Asian silent students set them apart from the other students in the class. These students typically did not raise their hands to volunteer answers in class, nor did they engage other students in dialogue.

A common theme that emerged throughout the interviews was the silent students' lack of self-confidence (50%). They frequently stated that they did not like to risk being wrong in front of their peers or the teacher. Tina, a black silent student, stated: "I [only] talk a little [in class] because I'm shy in talking to groups of people. They sort of stare at me and just look hard at me." Another white silent student said he did not like to join in class discussions because "I

say stupid stuff." Students repeatedly stated that they were afraid of being laughed at or embarrassed in front of others. A white silent student, Carol, stated this: "I am scared when the teacher asks me a question, because 80% of the time I don't know the answer. Sometimes I do, but I start blushing, and I am scared that my friends might make fun of me or something." Another black student, Shelletta, stated that she felt nervous when the teacher called on her, "because everyone is looking at you like you are weird or something."

The prevailing concern about what peers would think about them during class discussions was sometimes based on painful prior experiences (19%). Karen, the only student who was completely silent across all 14 observations, said: "I talk just a little in class. I'm afraid that what I say, someone won't like. When I was in the second grade, we were going to have a Thanksgiving dinner thing and students were going to be Pilgrims. I raised my hand and said I would like to be an Indian and would wear my hair in braids. Nobody said anything, and the teacher just went 'Um hum,' and it was embarrassing." Four years later, Karen remembers this experience and does not volunteer to participate in class.

Jason, another silent student, discussed this experience: "I'm nervous and afraid in front of an audience. I'm afraid that they are going to make fun of me and stuff behind my back. Once, in social studies, I was in front of the class and I drew a not-good-looking picture, and the class was pointing at it and laughing." Silent students like these dealt with their desire to avoid being the center of attention by choosing not to interact in class. This allowed them to exercise some control over the classroom dynamics.

A subset of the 30 silent students interviewed (19%) were bright students who tended to daydream during class. This was evident not only during the classroom observations but also during the interviews. One student described himself this way: "I usually daydream in class. I like to think about a lot of things, like what I am going to be when I grow up." The tendency to daydream did not appear to interfere with keeping up with classroom activities. When they were called on, these silent students could typically respond appropriately.

Silent students held two very different views of their peers who interacted frequently in class discussions. Over half of the silent students found verbally active students annoying. They described these talkative peers as "jabbermouths," "nerds," and "smartypants." This group of silent students felt that the more talkative students were trying to get attention and were not allowing others to "have a turn." In contrast, the other silent students interpreted their peers' class participation as a sign that the talkative students were smart and spoke up because they knew the answers. This group of silent students (of all achievement levels) seemed to admire students who participated in class frequently. For example, according to one student: "Some of the other students aren't shy to answer questions and get them wrong in front of people. If they don't care about that, I do, because if I get it wrong sometimes they laugh and point their finger at me and stuff. Other [students] are not afraid to get up in front of the class and talk."

When asked, "When at school do you feel the most comfortable?" a strong pattern emerged. Many of the silent students (41%) preferred to work in small groups with friends. They frequently cited a preference for laboratory work and small-group discussions. Each of the four subject-area classes was cited by different students as a place "where I feel comfortable" (science 12%, mathematics 19%, social studies 41%, other 12%). The reasons given for their being comfortable related to their not being singled out by the teacher. They liked one class because "I don't have to answer that many questions," and another because the teacher "doesn't put you on the spot." One student specifically named the advisor-advisee time as the class in which he felt

the most comfortable because "part of the rules is that everything that is said in class stays in class. It doesn't go outside." Being in a safe and accepting environment where they felt that they had some control over how they participated was important to these students. This expressed need appeared to contradict the school and team climate. The four teachers on the team were exceptionally warm and caring to their students. Although they used primarily direct instruction, there was flexibility in class management. The classes were typically interesting and challenging without being overwhelming to the majority of students.

Discussion

The results of this study demonstrate that, for this sample, silent students as a group are not atypical from other students with respect to race, sex, achievement, or teacher expectations. When the characteristics of the infrequently interacting silent students are compared to the very verbal target students, the pattern that emerges is not as clear as one would expect.

Target students tend to be high-achieving white males who are risk takers (Tobin, 1988). Silent students, however, are of mixed abilities, include proportionate numbers by gender and race, and are not risk takers. Target students frequently use classroom dialogue as a way to gain recognition rather than as an opportunity to learn (Tobin, 1988). In contrast, many silent students view classroom dialogue as an opportunity to listen, to think, and to learn from others. Whereas target students tend to seek opportunities to answer the most difficult questions in class (Tobin, 1988), silent students prefer not to answer questions and avoid answering questions for which they are unsure of the answers. Silent students expressed strong concern about giving an incorrect answer in class, whereas target students were not particularly worried about providing incorrect responses (Tobin, 1988).

The silent students in this study were not inert or uninvolved (Fong, 1987) but instead chose not to participate in class. The decision to be silent came from the students, not from their teacher. The teachers in this study evenly distributed their direct questions across all students. However, the reticent behavior silent students exhibited may have been shaped by their previous teachers and classroom experiences. This finding is consistent with Good's (1981) passivity model, which suggests that some students avoid taking risks in class discussions as a result of prior experiences.

Finn and Cox (1992) suggested that students who do not have successful classroom experiences in the early grades may engage in "failure-avoiding" behavior in later years, and that successful participation in lower grades leads to a sense of identification with the school and a valuing of learning outcomes. Finn and Cox also maintained that this increase in positive affect as a result of successful class experiences perpetuates a cycle of participation in class activities over many years.

Silence is a cultural phenomenon for a small percentage of students. For this group, silence is a way of showing respect for the teacher and peers. Dumont (1972) described student silence for Sioux and Cherokee students, who use silence not as a sign of respect but as a tool to control classroom activities. According to Dumont (1972, pp. 344–346): "We have found that student silence characterizes much of what goes on in the formal schooling of American Indian children. When singled out to read or answer questions they could not avoid, they did so with hesitancy, constraint and sometimes fear. Nonetheless, silence governed teaching and learning, representing a student-developed and -controlled tactic."

For most of the silent students in the present study, silence was the result of their lack of self-confidence and their desire not to take risks. These students did not want to be put on the spot or to be the center of attention. This desire to avoid public interactions appeared to arise from prior experience in which they felt as if they had been made fun

of by their peers. Silent students were anxious about and afraid of public discourse.

The desire to avoid being the center of attention could be a developmental phenomenon characteristic of early adolescents. In a study of question asking in kindergarten through grade 12, Good et al. (1987) found a distinct drop in on-task attention-getting questions at the seventh grade. They interpreted this drop to mean that these students did not wish to call attention to themselves. Early adolescents have been characterized as possessing the "imaginary audience phenomenon" (Farel, 1982), in which they feel they are like actors on a stage with everyone looking at them. Their feelings about their rapid physical changes could contribute to their desire to stay out of the spotlight.

Levine and George (1992) recently completed a study of shy middle school students. They reported that shy students have additional challenges once they enter middle school because of the complex and rapidly changing nature of adolescence. They suggested that "inadequate social skills and perceptual deficits [of shy students] made them afraid to initiate interactions with others" (p. 31). Although many of the silent students in the present study describe themselves as shy, for some shyness may not be a social deficit but instead may represent a personal preference.

Many of the silent students in our study chose not to join in classroom discussions, because they did not share their peers' desire to use spoken language to learn. This group of silent students expressed a preference for learning by listening and thinking.

The significant differences between silent and nonsilent student-initiated interactions and responses to open questions indicate that silent students are actively controlling their entry into public discourse. The lack of differences in teachers' direct questions shows that teachers attempted to distribute interactions equitably.

Cooper (1979) suggested that teachers' need for control in the classroom can affect interaction patterns. Although Cooper primarily addressed teacher control, the silent students in the present study sought to control what happened to them by choosing not to participate in class discussions. Their silence allowed them to gain a small measure of control over the lesson content, the timing of their interactions, as well as the responses of their peers and the teacher. The need for control over their environment is accompanied by their desire to avoid competing with other students, as well as taking risks.

Pedagogical Implications

The majority of the students who were silent in this study chose not to interact because of anxiety about being embarrassed or being put on the spot when they were unprepared. Their anxiety about being called on in class appeared to interfere with benefits they might have gained from participating in class discussion. In a study of anxiety and type of instruction, Dowaliby and Schumer (1973) found that high-anxiety students had higher achievement in lecture classes (where they did not have to interact) than in discussion classes. Discussion classes are characteristically less structured than lecture classes and may provoke anxiety and interfere with learning for some students (Gall & Gall, 1976). This does not mean that teachers should avoid discussion formats, because the benefits of interacting with peers and the teacher are significant for many members of the class. However, the fact that nearly one-third of the students in most classes are silent means that teachers cannot afford to disregard their learning preferences or anxieties.

One viable method for addressing the needs of silent students is through cooperative learning and small-group discussions. One silent student, Thomas, commented: "I learn better in a small group. I don't like to work alone because I don't feel secure with what I'm doing. I like to get other people's input, and I don't like large groups because I feel like I'm talking to the

whole world and I feel uncomfortable. But when I am in a small group of three or four people, I can state my ideas and feel comfortable about them."

The effective use of small groups necessitates a shift in the social norms of the classroom. Students (especially silent students) must assert responsibility for working with others, which includes asking questions, seeking clarification, and helping others. Silent students in small groups gain some measure of control over the learning context by having to interact with only a few peers, but they relinquish other forms of control by not being able to withdraw as they might do during a whole-class lecture.

From a constructivist perspective, it is important that teachers negotiate with students a healthy learning environment where students can construct personal meaning. For some students, deriving meaning involves talking through their ideas. For others, meaningful learning involves listening, reading, or working with manipulatives. A critical pedagogical strategy for use with silent students is the creation of a warm, accepting socioemotional classroom climate in which a variety of ideas are valued and the emphasis is not always on one right answer. Students should feel as if it is acceptable to offer their ideas aloud, even if they are wrong. If the role of the teacher changes from an authoritative source of knowledge to the role of facilitator of learning, then students can shift from concern about being wrong to the freedom to explore ideas. However, it is likely that, even if teachers change the instructional environment, there will still be shy, quiet students. Further research is needed to examine how cultural characteristics of students affect their class participation and construction of knowledge. Additional studies are also needed to determine how classroom interactions should be structured to maximize learning for students who prefer to be silent.

Appendix

Student Interview Questions

1. How many brothers do you have? Sisters?
2. Do you live with both parents?
3. What do you think your parents would like for you to do when you grow up?
4. What is your favorite thing to do when you get home after school?
5. Do you have any hobbies or special interests?
6. Would you characterize yourself as shy or outgoing? Why?
7. Do you feel as if you have lots of friends or a few close ones or one close one?
8. Name five people on your team you are closest to.
9. How are you different from other students?
10. Some people talk a little in class and others talk a lot. Which category are you in? Why?
11. What do you think about students who talk a lot in class?
12. Which class do you like best? (If student does not name math, science, literature, or social studies, then ask about these.) Why?
13. Was this also your favorite class last year?
14. Which class is most difficult for you?
15. In which class do you feel most comfortable? Why? Uncomfortable? Why?
16. When at school do you feel nervous? Why?
17. Complete this statement: When a teacher asks me a question in class I feel . . .
18. Which (math, science, language, social studies) teacher is your favorite? Why?
19. If you didn't do your homework (you forgot) and you got to school, how would you handle this?
20. When at school do you feel *bored?*
21. When at school do you feel "lost"?
22. I've noticed that you are quiet in most of your classes. Why don't you raise your hand more?
23. You go to math and language arts with students of similar ability and go to science and social studies with students of mixed ability. Which type of grouping do you prefer and why?
24. What would you like to be when you grow up?
25. I've noticed that you are more talkative and ask more questions in _____ class. Why do you think you talk more in _____?

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