Sample Action Research Report 2

What Patterns of Teacher-Student Verbal Communication Exist In My Classroom?

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ABSTRACT

My purpose was to explore the patterns of teacher-student verbal communication that existed in my classroom. Sequences were coded according to the ten categories defined in "The Role of the Teacher in the Classroom" by Amidon and Flanders (1971). I found that if I could avoid monopolizing class time with teacher talk, I could provide deeper and more meaningful learning experiences for my students.

The purpose of this study was to find the patterns of teacher-student verbal communication that exist in my classroom. One thing that I have learned since the beginning of my teaching career is that teaching and learning take place in many different forms. At certain times one learns by listening and watching, and at other times one learns by sharing and discussing ideas with others. For every style of learning there is a style of teaching. Through the years I have been able to share many ideas with my students, and during the sharing process my students have taught me many things in return. One of these things is that two-way communication between students and teachers is essential in a classroom where teaching and learning is happening on a continuous basis.

I believe four things influence teacher-student communication in my classroom. These are: my perception of my role as a teacher; my level of confidence in different areas of science; my responsibilities as they relate to this role; and the students' perception of a classroom where they interact with the teacher because their input is valued. The219 way in which I view my role as a teacher influences the way I verbally interact with my students. At one point in my teaching career I would have said my role as a teacher was to be a "giver of knowledge," as if I possessed all the answers and the students only needed to listen to me. Verbal interaction with a student who had a comment to make might have resulted in me saying, "Yeah, I heard something about that, let's go on," because it challenged my level of knowledge in a certain area and made me feel uncomfortable.

A danger exists when students ask questions of teachers. The danger arises when the teacher is not familiar enough with the subject matter or does not know the answer to a question. Some teachers fear their authority in the classroom will be hurt if they do not answer every question the students ask. Teachers must be comfortable with the process of

finding answers to questions in order to help students answer their own questions (Pearlman & Pericak Spector, 1992). In cases where this situation occurs, I try to admit to my students that I don't know all the answers, but maybe, through a shared experience, we can find the answers together.

Having attended many teacher in-service workshops where the instructors came into the school as "givers of knowledge," I often left feeling that I learned very little. As a student in these in-service workshops, I felt something was missing; communication seemed to be taking place, but the pattern was not one that flowed back and forth from teacher to student.

These experiences have helped change my perception of my role as a teacher. Where once I considered myself a giver of knowledge, I now feel I am a resource, providing experiences which motivate students to ask questions of myself and others. The question then becomes, "When do I back off and open the door to allow for an influx of student questioning?" Students ask questions at the point in a lesson where the subject being discussed becomes relevant to them (Robin & Fraser, 1989). Serving as a resource, I now have the freedom to change the agenda to meet the needs of the students. The floor can now be open for discussion of new ideas by any member of the class, to any other member of the class.

One of my responsibilities as an educator is facilitating the learning process to create a positive classroom environment. Every year, while preparing to meet my new group of students, I set high priorities for creating this environment. Tables and chairs are arranged in patterns to allow students and teacher freedom of movement, a variety of resources are chosen carefully to spark student interest, and posters are placed on the walls to invoke the students' thoughts. However, there is still an element of the classroom environment left untouched that may influence students' learning to a greater extent. This element is teacher-student communication.

One necessary ingredient to hold this two-way communication together is the amount of freedom given to the student to express himself or herself. Students must believe, from the first day they enter your classroom, that their input will be valued. There is no such thing as a dumb question or an idea that will not work.

If the idea is to give students more freedom to express their viewpoints in the classroom, the extent to which verbal behavior influences the students in my class must be understood. Teachers either consciously or unconsciously influence the amount of freedom that students have to respond to questions or statements (Amidon & Flanders, 1971). The Flanders system categorizes teacher verbal behavior as indirect or direct. A teacher's indirect verbal behavior maximizes student freedom to respond to questions and statements. A teacher's direct verbal behavior minimizes student response (Amidon & Flanders, 1971).

Indirect influences include verbal behaviors from the teacher. These can involve accepting students' feelings, giving praise and encouragement, accepting student ideas, and asking questions.

Direct influences can include lecturing, giving directions, and criticizing. Since I am looking at the total interaction in the classroom, student talk must also be part of the

discussion. Student talk can include student responses to a teacher's questions and student-initiated talk to the teacher.

METHODS

My first period Integrated Science class was chosen for the focus of this study. This class is made up of thirty-five sixth-grade students from eleven to twelve years old. The nineteen girls and sixteen boys are in their first year of middle school, coming from four feeder elementary schools in the Leon County area.

Room 001-B, the classroom assigned to me for the last two years, is one of the larger classrooms in the sixth-grade wing of the open concept school in which I teach. Three walls and a sliding curtain are the boundaries which encompass the partially carpeted room. A large model of the human body sits along the wall where the sliding curtain is located. The wall opposite the sliding curtain is equipped with six sinks, an eyewash station, and a drain.

Two weeks prior to my starting date, a video camera was placed in my first period classroom and left on so that the students would become comfortable in the presence of the camera in the room. Students were given numbers on construction paper and asked to hold on to them for later use. On day one the first period class was videotaped for the first time. At the close of the period students were asked to complete a four-question survey. They were asked not to use their names, but instead, they were asked to use a number that was given to them earlier. I jotted down notes on how the class session went in a teacher journal.

The week continued with the second taping three days later. Student surveys were filled out for the entire week. Entries were made in the teacher journal whenever I could remember. This turned out to be about three times during that first week.

During the second week the class was taped on Monday and Thursday. At the end of the second week modifications to the student survey were made on questions 1 and 3 due to mixed responses given by students. The modified student survey questions were:

1. Did you share something in class today? Yes/No
2. If yes, did you share with:
    a) students only;
    b) the teacher;
    c) a group of students; or
    d) a group of students and the teacher.
3. Did you ask a question today? Yes/No
4. If yes, did you ask a question of:
    a) a student only;
    b) teacher only;
    c) group of students only; or
    d) group of students and the teacher.

I continued to tape my first period science class twice a week for a total of five weeks. Student surveys were given to all students on a random basis throughout the five-week period. Journal entries were made daily.

Classes were videotaped and analyzed by looking at the sequence of teacher-student verbal interactions. These sequences were then coded according to the ten categories defined in Amidon & Flanders (1971). A number from one to ten was assigned to ten different types of behavior. Each number represented a category of teacher-student verbal behavior. However, it should be mentioned that no scale is implied by these numbers. The ten categories of student behaviors were (1) accepts feelings, (2) praises or encourages, (3) accepts or uses ideas of students, (4) asks questions, (5) lecturing, (6) giving directions, (7) criticizing or justifying authority, (8) student talk (response), (9) student talk (initiation), and (10) silence.

Acceptance of Feeling

The teacher accepts feelings when he/she says he/she understands how the child feels. The child is supported and told he has the right to have these feelings. These kinds of statements often communicate to children both acceptance and clarification of their feelings. Included in this category are statements that recall past feelings, refer to enjoyable or uncomfortable feelings, or predict happy or sad events that may occur.

Praise and Encouragement

This includes jokes that release tension but do not threaten students at the expense of others. Often praise is a simple phrase such as, “good job,” “fine,” or “all right.” Encouragement is slightly different and includes statements such as “continue,” “say that again,” or “you’re hot now, tell us more about it.”

Accepting Ideas

This is quite similar to category one (acceptance of feeling). However, it only includes acceptance of student ideas, not the acceptance of expressed emotion. When a student makes a suggestion, the teacher may paraphrase the student’s statement, restate the idea in simpler terms, or summarize what the student has said. Included here is when the teacher says, “I see what you mean. That’s a good point.”

Asking Questions

This includes only questions from which the teacher expects answers. A rhetorical question is a question to which the teacher does not expect an answer, and these are not included in this category.

Lecture
Lecture is defined as the form of verbal behavior used to give information, opinions, or orientation. This presentation of material may be used to introduce, review, or focus the attention of the class on an important topic. Usually information in the form of a lecture is given in fairly extended time periods, but it may be interspersed with children's comments, questions, and encouraging praises. Rhetorical questions are included in this category.

Giving Directions
This is used only when the student's compliance takes the form of an observable act. An example would be if the teacher says, "Chad, move to the seat up front."

Criticizing or Justifying Authority
A statement of criticism is one designed to change student behavior from unacceptable to acceptable. The teacher says, in effect, "I don't like what you are doing, do something else." Another group of statements included in this category are statements of defense or self-justification. If a teacher is explaining herself or her authority, defending herself against the students, or justifying herself, the statement falls into this category.

Student Talk—Response
This is used when the teacher has initiated contact or has solicited student statements. Also included here is when the students respond verbally to teacher directions.

Student Talk—Initiation
This is when a student raises his/her hand to make a statement or ask a question when he/she has not been prompted by the teacher to do so.

Silence or Confusion
This includes periods of confusion in communication when it is difficult to determine who is talking.

RECORDING DATA

Every three seconds I wrote down the category number of the interaction I had observed from the videotape. This sequence of numbers was recorded in a column on a tally sheet (approximately twenty numbers per minute). Each class session lasted an average of 40 minutes and yielded about 300 responses. At the end of a period I had several long columns of numbers. This sequence was entered into a 10 row by 10 column table called a matrix (see Table 1) Numbers from the sequences were examined in pairs in order to show the patterns of interaction. After compiling tallies in each cell, totals were found for each column. Percents of tallies in each column were computed by dividing the columns total by

the total number of tallies in the matrix. This gave a proportion of the total interaction observed in the classroom in each category.

Table 1

Interaction Matrix for Laboratory Activity

	1	2	3	4	5	6	7	8	9	10
1										
2		1.04	0.26	1.04		0.52			10.4	
3		0.78	1.83	3.14	0.52	1.50		0.26	0.52	0.52
4		0.78	1.04	4.46	3.14	2.36	0.26	6.03	2.60	3.67
5		0.26		4.70	4.70	2.36	1.04		2.60	0.78
6		0.26		5.20	2.09	5.77	0.26		1.50	2.62
7				0.52	0.52	0.26	0.26	0.52		0.52
8		0.26	2.30	0.26	0.26	0.26		0.26	1.04	0.26
9		0.52	3.40	1.31	1.31	1.31	0.26		6.03	1.04
10					1.57	3.93			1.83	
Total	0	3.90	8.83	20.6	14.1	18.3	2.08	7.07	17.2	9.41

After examining the matrix, I was able to look for patterns in teacher talk, student talk, indirect-direct ratio, and ratio of student-initiated talk to student talk and high frequency cells. The total amount of teacher talk was important because my goal was to act as a facilitator or resource and not to monopolize the class time. The total percent of teacher talk during the class time was found by dividing the total number of tallies in columns one through seven by the total number of tallies in the matrix.

Student talk, either student-initiated or elicited by the teacher, was important because this was the time when the student's ideas and beliefs were being shared, exchanged, examined, and challenged. To find the percent of student talk, the total number of tallies in columns eight and nine was divided by the total number of tallies in the matrix.

The I/D (indirect-direct) ratio was a comparison of teacher-indirect statements, statements from categories one through three, and teacher-direct statements, the types found in categories four through seven. A comparison of indirect teacher statements to direct teacher statements showed if I was using direct influence to minimize the freedom of the

student to respond, or if I was using indirect influence, which maximized the freedom of the student to respond.

The use of praise and encouragement, as well as repeating the student's answers, allowed me to maximize the student's freedom to make other responses. On the other hand, when I said, "Put that ruler on the desk and act like a sixth-grader," I was giving directions and criticizing the student, which minimized the student's freedom to make other responses. The I/D ratio was found by adding the total tallies in columns one through three, and then dividing this total by the total number of tallies in columns four through seven.

The matrix contained cells called steady state, which lay along any diagonal. Examples of steady-state cells are one-one, two-two, and three-three. These cells identified continuous talk in a single area. A build-up of tallies in a steady-state cell showed a particular behavior remained in a single category for longer than three seconds. All other cells were transitional cells. These cells represented movement from one category to another. I looked for patterns in steady-state cells and transitional cells that contained at least 3% of the matrix tallies. These areas showed the major interaction patterns that existed in my classroom.

DATA ANALYSIS

In analyzing the data I looked for similarities in the type of instruction used during the allotted five weeks. I found that the lessons could be divided into two basic categories, whole class instruction, where the focus of the lesson was a discussion or demonstration led by the teacher, or laboratory activity, where students were actively engaged in problem solving. Once each lesson was classified as either class instruction or lab activity, a typical lesson from each area was identified in order to look for patterns of instruction.

In looking for patterns, I expected to find differences in the amount of teacher and student talk when comparing laboratory instruction and class instruction. I expected teacher talk to be high during whole class instruction and low during laboratory activity. During laboratory activities I expected that the students would discuss things as they explored within their groups. Laboratory activities also often take unpredictable twists and turns which challenge or confuse students, thus leading to high levels of student interaction.

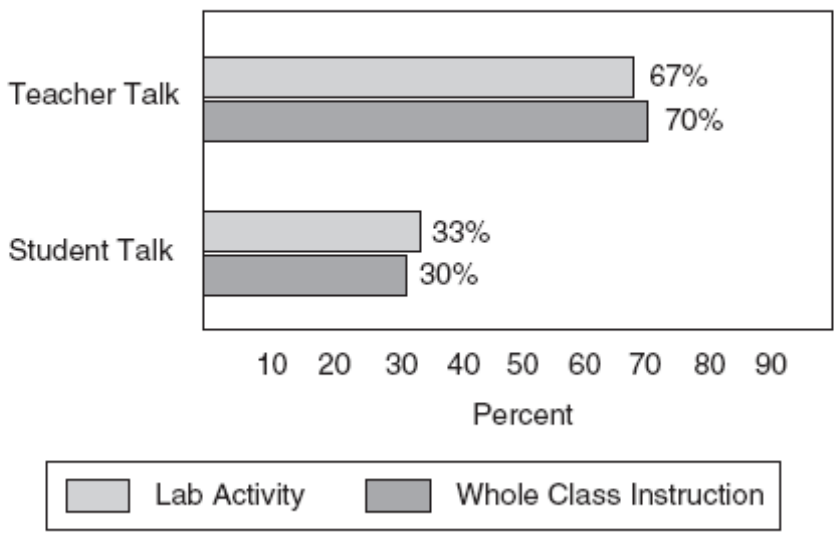
TYPICAL WHOLE CLASS INSTRUCTION

Students were given a list of five tasks from which to choose to write a detailed procedure. The list included tasks such as folding a sheet of paper into nine squares, addressing an envelope correctly, and locating similar words in the dictionary.

After completion of the tasks, thirty-one students completed and turned in surveys. Sixty eight percent of the students who turned in surveys shared something with the class during this lesson. Forty-two percent of the students shared something with another student.

Sixteen percent of the students shared something with the teacher. Nineteen percent of the students shared something within a group of students, where the teacher was not present or part of the group. Twenty-nine percent of the students shared something with a group of students while the teacher was part of the group. Seven percent of students wanted to share something but did not. Ninety percent of the students who shared something or asked a question during the lesson felt their statements or questions were taken seriously.

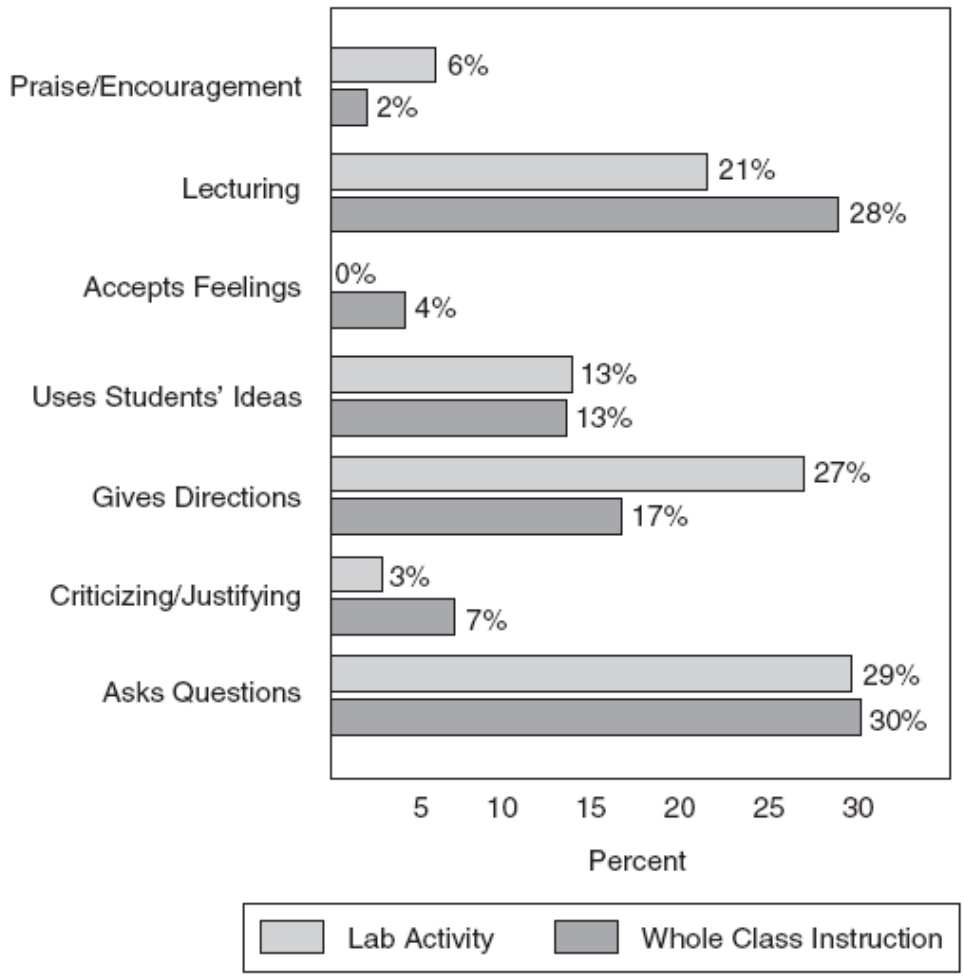
Figure 1



Students seemed to like the topics they received. Some students chose to actually do the task they were writing about. Doing the task described in the assignment allowed the procedure to become real for a lot of them.

In viewing the video I was also able to see patterns in the instruction. Teacher talk made up 70% of the lesson, and student talk made up 30% of the lesson (see Figure 1). The I/D ratio was 65/298. A breakdown of teacher talk revealed 30% questioning, 28% lecture, 17% giving directions, and 13% acceptance of students ideas (see Figure 2). Each of four steady-state cells, four-four, five-five, six-six, and nine-nine, contained three percent of the matrix tallies. This pattern indicated periods of continuous questioning, lecturing, and giving direction by the teacher. Five transition cells, which contained three percent or more of the matrix tallies, were three-four, four-eight, eight-three, five-four, and nine-three. This pattern indicated that I asked direct questions of students, accepted student ideas, and used these ideas to form other questions. Questions were interspersed during periods of continuous lecture.

Figure 2



The class was divided in half. Half of the students worked on laboratory activity number one, "Where Is It?" In this activity students used a triple beam to find the masses of five objects. Once completed, the students then had to identify the two objects with identical masses. The remainder of the class worked on laboratory activity number two, "Ranking Order." In this activity students used a triple beam to find the masses of five household items. They then ranked them in order from smallest to largest and generated a bar graph illustrating their findings.

Thirty-three student surveys were completed and turned in after lesson two. Seventy-three percent of the students who turned in a survey shared something with the class during the lesson. Of the students who shared ideas, 34% shared something with another student,

13% shared something with the teacher, and 30% shared something with a group of students. Twelve percent of the students wanted to share something, but did not. Only one student gave a reason for not sharing his idea (he was helping someone else at the time). Seventy-six percent of the students asked a question. Of these, 42% asked a question of another student, 27% asked questions of the teacher, and 6% asked questions of a group of students. Of the students who shared ideas or asked questions during the lesson, 61% felt the teacher took their statements and questions seriously.

Student participation was good during this activity. When asked questions, students volunteered to answer, rather than wait for me to call on them. Students seemed interested in the short demonstration on how to use the laboratory balance, and were very eager to get back to their groups.

Students also worked eagerly, showing a great deal of enthusiasm. They asked good questions of each other and me.

In viewing the video I was able to calculate that teacher talk made up 67% of the lesson. Student talk was about half this, at 33%. The I/D ratio was about one-fourth. For every indirect statement the teacher made, four direct statements were made. A breakdown of teacher talk revealed 29% of teacher talk was questioning, 21% was lecture, and 27% was giving directions (see Figure 2). Four steady-state cells contained 3% or more of the tallies in the matrix, four-four, five-five, six-six, and nine-nine. This indicated periods of continuous lecture, questioning, and giving directions by the teacher. The following transition cells contained 3% of the tallies in the matrix: three-four, five-four, six-four, four-five, four-eight, four-ten, nine-three, and ten-six. Heavy use of cells five-four, six-four, four-five, four-eight, and three-four indicated patterns where the teacher gave directions and asked students direct questions during the activity. When students answered questions, their ideas were often used to form other questions. Cells four-ten, and ten-six indicated times when questions were asked of the class as a whole. In these cases confusion often set in, causing me to give further directions. Cells nine-nine and nine-three gave some indication of extended student-initiated talk and my acceptance of students' ideas.

AN ATYPICAL LABORATORY ACTIVITY

As the class completed their activities and began to prepare for a new section, I was able to show examples of teacher-student verbal communication patterns that I would like to see more of in my classroom. Students were first asked to bring closure to the laboratory activities, "Ranking Order" and "Where Is It?" Once this was completed they were asked to compare results, making new measurements if needed, completing charts and graphs, and writing a short conclusion. During the last ten minutes of class I introduced the next topic we would discuss, volume.

Thirty-five student surveys were completed and turned in after lesson three. Seventy-one percent of the students shared something with the class, 51% shared something with

another student, 14% shared something with the teacher, and 11% shared something with a group of students. Twenty-three percent wanted to share something, but did not. The following reasons were given for not sharing something during the lesson: (a) I wanted to work by myself, (b) the teacher did not call on me, (c) so I could help someone, (d) I did not want to interrupt class, (e) because I just wanted to talk, (f) because I wanted to feel good about what I shared, (g) because I wanted everyone to feel good about what I did. Of the 63% of the students who asked questions during the lesson, 29% asked a question of another student, 37% asked the teacher a question, and 9% asked a question of a group of students. This total exceeds 63%, which means some students asked more than one question. All of the students who shared something or asked a question during this lesson thought the teacher took their statement or question seriously.

Students started work immediately during this lesson. They relied heavily on the help of other students around them to answer questions. I spent time walking around the room, asking questions of groups as they worked. Near the middle of the class period we had a class discussion and short lecture.

Teacher talk made up 57% of this lesson. Thirty percent of the lesson involved student talk. The I/D ratio was one-fourth. For every indirect statement made by the teacher, four direct statements were made. A breakdown of teacher talk revealed that 14% of the time I asked, 17% of the time I lectured, 13% of the time I gave directions, and 9% of the time I was accepting or using students' ideas. Each of four steady-state cells in the matrix contained 3% or more of the matrix tallies five-five, six-six, eight-eight, and nine-nine. This indicated periods of continuous lecturing and giving directions. Questions posed by the teacher were answered in greater detail by the students. Students also expressed more of their ideas during the lesson. The following transition cells contained 3% of the matrix tallies, three-four, five-four, eight-three, six-five, four-eight, four-ten, five-six, and ten-six. The heavy use of these cells gave an indication that I was asking direct questions of both individual students and the whole class during the lecture.

DISCUSSION

In looking for patterns I expected to find differences in the amount of teacher and student talk which would match the type of instruction being used. I expected teacher talk to be higher than student talk during whole class instruction and lower than student talk during laboratory activities. What I discovered was that during laboratory activities I talked an average of 67% of the time, while the students talked an average of 33% of the time, as illustrated by Figure 1. During whole class instruction I talked an average of 70% of the time, while students talked an average of 30% of the time. It seemed that regardless of the type of instruction given, I talked more than 60% of the time and the students talked roughly 30% of the time.

This pattern of teacher-student verbal communication had been modeled for so long that one day a student confided in me, “Mrs. Graham, you really do talk too much.” My immediate reply to his observation was, “No, I don’t.” The student then proceeded to describe how a typical class often begins with my introducing the lesson, giving directions, and asking questions. He ended by saying that by the time I finish students rarely had time to complete the lesson. After viewing the videotapes I was surprised to find that for the most part the student had been right. I had been monopolizing the class time. Students were not being allowed enough freedom to engage in verbal interaction with myself or each other. Class discussions were led by the teacher and often took the direction I encouraged. A breakdown of teacher talk revealed I was more accepting of students’ feelings during whole class instruction than during laboratory activities. Student feelings were being accepted about 4% of the time during whole class instruction.

Praise encouragement was used 2% of the time in whole class instruction, while during laboratory activities praise and encouragement was used 6% of the time. I think this increase was appropriate, for the middle school child likes to receive little pats on the back which do not cause them to seem “uncool.”

On the other hand, the use of criticism and justification decreased during laboratory activities and increased during whole class instruction. During lab activities I used criticism and justification an average of 3% of the time, while during whole class instruction I used criticism and justification 7% of the time. The restrictive nature of whole class instruction, as shown by the amount of time the teacher talked, probably influenced student restlessness and my criticizing and justifying behavior.

The use of student ideas was very similar in both types of instructions. I managed to use the students’ ideas about 13% of the time in both cases. Another surprise was that I asked questions about the same amount of time in both types of lessons. I asked questions 29% of the time during laboratory activities and 30% of the time during whole class instruction. I lectured 28% of the time during whole class instruction and 21% of the time during laboratory activities. I also tended to give about 10% more directions during laboratory activities than during whole class instruction.

The pattern of teacher-student verbal communication that exists in my classroom is one in which teacher talk dominates classtime. This often restricts verbal interaction between the teacher and students, as well as between the students themselves. I often used a distinct pattern of lecture, giving directions at the beginning of each class, with questions interspersed throughout. The majority of teacher-student verbal communication occurred when students were either asked a question or asked a question themselves.

If given a chance, the students often shared ideas with others in the class. However, during these times the students often received mixed signals from the teacher which would generally say, “I want to hear what you think about it, but what I have to say is more important.” I now believe children learn through their interactions with others, and therefore, must be given a chance to develop new ideas by having their own ideas challenged by others through open discussion.

Recognizing that there is an incongruency between my teaching beliefs and my teaching practice is the first step. I now wish to explore several options which should help me facilitate better teacher-student communication in my classroom. Some of these are: giving written directions so students can refer to them during the lesson as needed; providing students with an outline, covering important points in the lesson; asking questions that promote thinking, relating questions to students' previous experiences; and encouraging students to talk freely amongst themselves in groups.

Conducting this study has given me insight into my classroom. I now realize that students come to class with a sense of inquiry. They are ready to explore and find answers on their own. I feel students are excited about engaging in the process of science, and they show this by their willingness to share ideas and beliefs with others. It is my job to step back and trust this sense of student inquiry. By not monopolizing the classroom I feel I can now provide rich opportunities for students to investigate the world of middle school science at a much deeper level than ever before.

REFERENCES

Amidon, J., & Flanders, N. (1971). *The role of the teacher in the classroom* (Rev. ed.). St. Paul, MN: Association for Productive Teaching.

Pearlman, S., & Pericak-Spector, K. (1992). Expect the unexpected question. *Science and Children , 30*(4) 36–37.

Tobin, K., & Fraser, B. J. (1989). Barriers to higher cognitive learning in high school science. *Science Education , 73*(6) 661–681.

From "What Patterns of Teacher-Student Communication Exist in My Classroom?" by E. Graham (1995), in S. Spiegel, A. Collins, & J. Lappert (Eds.), *Action Research: Perspectives from Teachers' Classrooms. Science FEAT (Science For Early Adolescence Teachers).* Tallahassee, FL: SouthEastern Regional Vision for Education. Retrieved October 20, 2004, from http://www.enc.org/professional/learn/research/journal/science/document.shtm?input= ENC-002432-2432_ch4. Reprinted with permission.