

Extensive Qualitative Analysis Concerning the Actual State, Desired State, and Recommendations for Bridging the Gap

1. Ms. Reed asked a lot of questions. About forty percent of her total number of codes were in #3 and #4. How would you evaluate this aspect of her teaching.
2. Of Ms. Reed's responding behaviors, about fifty percent fall into categories #5, #6, and #7. What does this reflect about her teaching?

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1. Ms. Reed was doing much of the student's work. For example, in (40) she could have said "Tell me about how gravity affects the pendulum" instead of pointing out the importance of the constancy of the pull of gravity. This reflects a certain amount of impatience. At times Ms. Reed seemed to be trying to teach Jeff about the process of forming questions and hypotheses, but most often she made up the questions and provided many of the answers. She probably left Jeff feeling a bit disconcerted and confused. At first she allowed Jeff to "discover" the question implicit in his earliest actions, but she didn't follow through. Your initial impression may have been that Ms. Reed was showing very student-centered behavior, but sometimes a SATIC analysis can help to reveal what intuition does not.
2. Ms. Reed seemed to think it was important to tell Jeff how she felt about what he said. Some students may require such responses. But if this is Ms. Reed's general behavior with students, she may be reinforcing a "please the teacher" syndrome and discouraging the students from really learning to think independently and creatively. Ms. Reed's need for control also is reflected by these category frequencies. Ms. Reed has firm control of the direction of this interaction with Jeff. Controlling an interaction isn't necessarily bad—often structuring the dialogue is fine as long as the teacher isn't putting words in students' mouths. If the teacher wants to encourage students to think creatively and independently and avoid verbalism, then some control and direction must be in the hands of the students!

CODING FROM TAPE

SATIC focuses on the *form* of teachers' verbal behaviors, but it tells you next to nothing about the *content*. And sometimes the content is much more important than the form. For instance, one teacher may reject his students' comments by saying, "No, that's not quite it, but keep working," and another may reject them by saying, "That's ridiculous!" Both of these rejections would be coded in category #5, but what a great difference there is between them! This is one of the limitations of SATIC, indicating need for sensitive interpretation. Of course, there would be much less student-teacher interaction in the second teacher's class.

If you examined a coded SATIC sheet, you might be able to make certain generalizations about a teacher's relationship with her/his class, but a more effective use of SATIC would include listening to the audiotape of the class from which the sample was drawn. SATIC is not meant to stand alone, it is meant primarily to be an *aid to the understanding* of verbal and non-verbal behavior. It can help to sort out and make understandable the raw data of a teaching sequence as recorded on audiotape.

Among the things that can be learned from listening to an audiotape are these: the general noise level of the class, the amount of laughter, the number of extraneous remarks, the kinds of questions students ask, the sequence of events, an especially the tone of the teacher's voice. His/her voice can show hesitancy, anger, joy, boredom. With his voice he can enhance or can contradict the verbal content of his message. These extra verbal aspects of communication are called *paralinguistics*— and when coding a tape segment it is useful to make notes about these and other aspects of teaching behaviors in the "Comments" section at the bottom of the SATIC coding sheet.

CODING YOUR OWN TEACHING

The purpose of learning SATIC is to help you grow and improve as a teacher. Audiotaping can give you some kinds of information about your teaching that would otherwise be difficult to obtain—but unless you know what you are looking for, you can listen to audiotapes all day long without deducing much about your teaching. That's where SATIC comes in. Research has shown that a system like SATIC can help you to analyze audiotapes with much greater objectivity and precision than you could by merely listening. So learning to use SATIC is not an end in itself, but it can serve as a vehicle for understanding and growth.

DO THIS: During this semester you should be making audiotapes of your own teaching on a regular basis—and as soon as you have enough familiarity with SATIC, you are to use it to analyze the taped lessons. Set your sights on improving a limited number of specific behaviors. If you use the blank SATIC categories (#13 and #14) for behaviors that are of special concern to you, the instrument will have real value in improving your teaching. Share some of your efforts with your cooperating teacher and your instructor—you may find that these people can suggest ways to improve teaching behaviors you feel are in need of change.

Guidelines for Taping

Here are some points to bear in mind when you are taping and coding on your own during the semester:

1. A coded segment should contain 50 teacher codes or more or be at least 15 minutes long if it is to be at all meaningful. These conditions are necessary but not sufficient.
2. The segment does not have to be continuous, but no part should be less than 5 minutes of continuous interaction. If at all possible, code a continuous segment.
3. All parts of a segment to be coded should take place in the same class period.
4. Coding should not begin until the class has been under way for 10 or 15 minutes, and usually it should end several minutes before the end of the class period.
5. Any special conditions should be noted, such as if the recording was of a test review, a student presentation, a slow student, etc.

6. It is not very useful to code a segment in which the teacher is extremely consistent, such as a lecture.
7. If only a few tapes are to be made during a semester, they should be made no less than one week apart.
8. Always make written comments (interpretations) about a SATIC coding.
9. Unless there are special circumstances, choose segments which seem most indicative of your teaching style. If you are working on a specific behavior change initiative try to include an example and make note of it.
10. For convenience, mark on the tape where the coded segment begins and ends, and rewind the tape to the beginning of the segment.
11. Compute percentages and indices for each tape.
12. Fold the SATIC coding sheet and attach it to the tape cassette with a rubber band. Write your name, the date, and the number of this tape (in your sequence of tapes) on the outside of the paper as well as on the tape itself.

DON'T BE EMBARRASSED!

At first, using the recorder may make you and your students feel self-conscious. Some of your students may "play to" the recorder; others may object to being taped. Probably your best policy is to downplay the taping procedure. If a student asks why you are taping him, reply: "I'm not taping you—I'm taping myself. It's for a class I have at the university." Normally this will take care of the matter. Occasionally a student may have strong objections to being recorded; in that case, do not use the recorder while you are working with that student.

Some students also enjoy clowning into the microphone when you are not present. Fortunately tape recorders are very unresponsive, and as long as you ignore this behavior, it will usually stop. (If the clowning occurs when you are present it is likely that there is more involved than just the presence of a tape recorder!)

SATIC is a tool for change. SATIC can be used to improve your teaching in at least three ways:

1. **Use SATIC to get feedback.** Using SATIC once or twice a week for a few months will give you quantitative feedback about your teaching and may help you devise strategies of change. Even without considering specific ways to change your behavior, you will benefit from the increased self-awareness gained through audiotaping and SATIC analysis. SATIC may make you more at ease with your teaching by showing that it is more appropriate than you suspected, or it may help you change by showing you that your intuitive misgivings about your teaching style were well founded.
2. **Use SATIC to quantify your plans for behavior change.** You can plan specific change strategies by obtaining base rate data on specific categories (or ratios of categories, or category groupings) and deciding how much change should take place over how much time in a particular kind of instruction (the laboratory for example). The meaning of the SATIC percentages and ratios depends on you—your goals, your self-perceptions, and your teaching behavior. You should be able to arrive at target percentages and ratios by examining your SATIC data and by considering your own intuitive impressions.
3. **Create your own SATIC categories.** New categories can be particularly useful when SATIC is being used to help bring about specific changes desired in our teaching behavior. When the categories provided do not lend themselves to the changes desired, create new ones. The new categories can be as specific or as vague as you wish. For example: "non-science categories", "okays", "negativism", "empathy", etc. A strict operational definition of the new category is not entirely necessary as long as you know what the new category represents.

When you are setting up new categories, keep them free of value judgements. For example, "Asks a bad question" is not as useful as a category label as "Asks a sarcastic rhetorical question". When you are using SATIC as a tool for improving your teaching, you will find that it is helpful to work with another intern (or, once you are teaching, with another teacher). Working with another person will increase your commitment to change.