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AEC582

Teaching Behavior and Student Achievement[1]

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Introduction

What kinds of teacher behaviors lead to higher achievement among learners? The meta-analysis study by Barak Rosenshine and Norma Furst (1971) sheds important light on this question. For more than 45 years, their work has been the mainstay for additional research on teacher behavior and student achievement.

Rosenshine and Furst indicate that the focus on performance criteria emanates from a knowledge of behavior that is rooted in psychology and a series of experimental studies conducted in teacher education. It is difficult to conduct experiments in real-life settings; generally, humans must grant permission to be involved in a study, and most humans will agree to be subjects only when they are relatively sure that the treatment they receive is the better treatment. However, through an analysis of a host of classroom studies, generalizations can be made regarding teacher behavior and its relationship to student gains.

Teacher behaviors can be recorded using observational category systems. Measures are classified as *low-inference,* which are those items focusing on specific, denotable, relatively objective behaviors that are recorded as frequency counts, and *high-inference,* which require an observer to infer these constructs from a series of events. Examples of low-inference measures include teacher repetition of student ideas; teacher use of evaluative questions; and latency, the amount of time a teacher allows for a student to respond. Examples of high-inference measures include clarity, warmth, and task-orientation (Rosenshine & Furst, 1971).

The researchers also noted some limitations of the studies. All the studies were conducted in classrooms with typical children. In most instances class means were used to determine relationships, with few attempts to examine subgroups of students. And the focus was primarily on general teaching behaviors, which hopefully cross subject areas. These analyses are based on the correlations found within the studies.

The eleven teacher behaviors identified by Rosenshine and Furst (1971) in their meta-analysis of studies include

- clarity,
- variability,
- enthusiasm,
- task-oriented and/or businesslike behavior,
- student opportunity to learn criterion material,
- use of student ideas and general indirectness,
- criticism,
- use of structuring comments,
- types of questions,
- probing, and
- level of difficulty of instruction.

1. Clarity

What is clarity? First, the question of clarity focuses primarily on the teacher. Is the teacher clear? The answer

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to this question focuses primarily on the learners. Do they perceive the teacher to be clear?

Four major themes emerge from the Rosenshine and Furst (1971) meta-analysis of research regarding clarity.

1. The clarity of presentation is apparent to the students.

2. The points the teacher makes are clear and easy to understand.

3. The teacher explains concepts clearly and answers questions intelligently.

4. The lesson is organized.

One measure of the clarity of the presentation is the amount of time spent answering student questions that require an interpretation of what the teacher said. More effective teachers (in terms of student gain in achievement) are able to make a statement once without having to rephrase because the students did not understand the first time. However, do not confuse rephrasing to achieve clarity with rephrasing for emphasis, additional insight, or use of examples. Achieve clarity by stating and explaining the concept in a variety of ways. Another indicator of clarity of presentation is being able to ask students a question once without needing additional information or additional questions for the students to understand and answer the initial query.

Clear teachers use fewer vague words such as "some," "many," "of course," and "a little." In addition, clear teachers have enough background in the subject matter and are familiar enough with their material that they can give intelligent answers to student questions.

Organization that is obvious to the students is another indicator of teacher clarity. In some studies utilizing factor analysis, ratings of clarity, coherence, and organization all loaded on the same factor: teachers who are perceived as being organized are also perceived as being clear.

How to Become More Clear

The following are some ideas regarding how we can improve clarity. Keep in mind that we want to be clear because students learn more from teachers who are clear, and we want students to learn more!

a. Prepare a written lesson plan for every class session.

b. Write key questions on the lesson plan so that the wording is clear and concise. Use the key question to introduce a topic or generate responses from students. This will help avoid the need to rephrase questions until the students understand.

c. Write key concepts in the lesson plan. These may be the same major concepts written on the board or projected onto the screen. Again, writing these key concepts in advance will help ensure the statement will be clear the first time it is made, without unnecessary elaboration to achieve clarity.

d. Avoid using vague words. To check yourself, occasionally record your teaching, and then listen for words that add no meaning or understanding to the presentation. A colleague can also be helpful in identifying vague words and phrases since we tend to use and reuse familiar words and may not recognize what we are saying.

e. Practice the lesson. The second time through any activity is always better since we are more familiar with the content and the materials we will be using. This is especially important in demonstration and lab work.

f. Have a colleague review the lesson plan (and the entire course outline) for organization. What is clear to the writer may not be clear to the reader, so ask a friend to check for the organization of the material. Does the lesson make sense?

g. Write the topics for the day (learning objectives, essential questions) on the board so students know "where you are going" and see how the lesson flows from topic to topic. (Include a review of the previous lesson and a summary at the end of the class session.)

h. Ask the students. Have students complete the "Clear Teacher Checklist" (Kennedy, Cruickshank, Bush, & Myers, 1978) to help you gain an understanding of their perceptions of clarity. Students may not offer the information, and gauging their understanding only by the questions they ask in class may not be a good indicator. If it is quiet in the classroom, maybe the confusion is in the minds of the children.

Teacher clarity is associated with student achievement—the clearer the teacher, the more students achieve. Being clear is a behavior everyone can master.

2. Variability

The studies that Rosenshine and Furst (1971) analyzed in this area, including low-inference and high-inference correlational studies, revealed a positive relationship between variability and student achievement.

Four examples of variability prevalent in the studies are

1. variety of instructional materials,

2. variety of teaching techniques,

3. variety of types of assessments,

4. variety of level of discourse and of student tasks.

Variability may be one of the easiest areas for teachers to address, but also may be the easiest to overlook. The teacher knows and likes the content, having worked in the field for an entire career. Fifty minutes devoted to THE most important topic of the entire curriculum can seem like a very short time to the instructor and an eternity to a younger generation that is used to short segments, sound bites, and immediate response.

How to Achieve Variability

Below are some ideas to help bring variability and variety into our teaching. Remember that we want to add variety to make the lesson more interesting for students so they engage in their own learning and hopefully learn more.

a. Prepare a written lesson plan utilizing a variety of learning activities. In the margin of the plan, estimate the amount of time needed for each part of the lesson. Identify different methods, techniques, and materials that will be used for each section.

b. Vary the equipment you use. Try using the board occasionally instead of always using the overhead projector or Power Point. In small classes, use a series of flip charts stationed across the room, moving from one to another as the key points change.

c. Be on the lookout for examples, illustrations, and materials you can use in the courses you teach. A cartoon that introduces a point is a good example. Tape an interview with a colleague whose work illustrates a key point in the lecture.

d. Move around. A simple approach to variability is to get out from behind the desk or lectern. Walk around the classroom while you present a part of the lesson.

e. Change the daily routine. If you frequently start with lecture, start an occasional class session with a question and answer period or with student reports from their required reading for the day. Have students get up and move around, form small groups, discuss a key question with a person in the next row, or write on the board.

f. Ask different types of questions. Mix "recall" questions with "synthesis" questions.

g. Add a display to the bulletin board. Yes, even in college! A simple display of key concepts in the course will help bring variability to the class. Change it twice during the semester.

h. Vary the types of assessments given and the types of questions on tests. Use a variety of questions, including essay, short answer, matching, and multiple choice questions. Mix tests with papers, projects, presentations, and participation. Use different colors of paper for tests (watch out for dark colors that make reading black type difficult for some people).

i. Have a colleague review your lesson plans and course materials to offer suggestions and ideas to help increase the variability in class presentations.

j. Watch other people teach, especially those who have been identified as effective teachers. Go beyond your department and college. What do math teachers do for variability? Rhetoric teachers? Foreign language teachers? History teachers?

Everyone enjoys a little variety! The point is not to have gimmicks but to seriously consider changing pace, changing the approach, and changing how we present the subject matter to the students so that they achieve at higher rates.

3. Enthusiasm

Research results relating teacher enthusiasm to student achievement have identified three traits that are associated with teacher enthusiasm. They include movement, gesture, and voice inflections. Some evidence also suggests that a mixture of the type of teacher questions, especially questions that call for an interpretation of facts, may be considered a part of teacher enthusiasm.

An important issue in the area of enthusiasm is personality. Some experts may tend to dismiss teacher enthusiasm as a "some have it, some do not" situation. Several studies have shown that teachers can be taught to incorporate

movement, gestures, and voice inflections into their teaching.

4. Task-Oriented and/or Businesslike Behavior

Teacher behavior in this area is not well defined. Assessing task orientation and businesslike behavior can be difficult. Studies have revealed several teacher traits that seem to produce high student achievement. Observers noted that teachers in high-achieving classes appeared to emphasize the stimulation of thought rather than information and skills. Further, task-oriented teachers appear to be more concerned that students learn something rather than that the students simply enjoy themselves. Businesslike teachers encourage students to work hard and to do independent and creative work, which are closely associated with commonly held teaching and learning principles and give some clues regarding specific teacher actions that bring about student learning. The following help illustrate task-oriented and businesslike teacher behaviors.

a. Directed Learning—The teacher presents clues for the purpose of directing the students to the successful discovery and application of the concepts, principles, understandings, and relationships. Teachers provide the cognitive framework for students to seek and find answers to simple questions as well as complex issues. Laboratory exercises surely fit into this category. Non-lab oriented courses, however, can also emphasize directness. Examples include:

- questions that require thinking beyond basic recall,
- homework assignments that require synthesis from lectures and readings,
- library work (papers, short essays as a part of homework),
- group projects,
- a review at the start of each class session requiring students to analyze previous content.

b. Motivate learners by:

- using student ideas to establish the objectives of the course (usually the first few class sessions),
- reviewing course content at the end of the fifth and tenth weeks and having students discuss in class what they have learned to-date (this could be done along with obtaining early feedback regarding teaching).

c. Structure—Teach for transfer, helping students understand how what they are studying today ties to future courses, experiences, career paths, and the like. Being organized and providing structure in your lessons can promote student engagement and learning.

d. Reward and Reinforcement—The teacher acknowledges hard work and effort and provides reinforcement for such behavior. Much like motivation, reward and reinforcement encourages desirable student behavior. For example, send a personal note to high achievers with a copy to the student's adviser, acknowledging the student's hard work and effort in the course. Point out exceptional work to the entire class with specific reasons for why the work was superior. Provide words of encouragement on assignments and tests, noting the obvious benefit of good work, independent thinking, and creativity.

Caution should be noted regarding the presumed dichotomy between learning and enjoyment. Task-oriented and businesslike behavior can be an enjoyable experience for both the teacher and the students. Hopefully we can practice these behaviors and still provide a pleasant experience for students.

5. Student Opportunity to Learn Criterion Material

Significant, positive, and consistent correlations have been found between measures of opportunity to learn and student achievement. There is a definite relationship between the material covered in a course and student performance on the criterion test. Those findings should not be surprising; the more we teach, the more the students will learn, assuming, of course, that we are using effective teaching methods.

Opportunity to learn can include learning facts as well as learning the type of problem exemplified by testing measures. In other words, student achievement can be increased by teaching students how to resolve problems they encounter that are related to the content of the course but are not specific regurgitations of facts taught in the course. Helping students develop the problem-solving abilities related to course content is another mechanism that can be employed to help students learn the criterion material. Several ideas should be considered.

Time on task: Teachers should ensure that classes begin and end on-time and that students are actively engaged for the entire class period. Non-instructional time (attendance,

announcements, etc.) should be kept to a minimum. Courses scheduled for three sessions per week should meet three sessions per week! However, the amount of time on task is only relevant when students are provided with meaningful learning experiences during the assigned time (both in and out of class).

Out-of-class time: Students should be encouraged (expected) to spend time out of class in learning course material. Opportunities to learn out of class may include reading and studying assigned materials, working on individual or group projects, or watching recorded presentations. Teachers should obtain an estimate of how much time students typically spend outside of class in preparation for class-related activities.

Readiness for learning: Teachers should arrange the content of the course to take into consideration the background of the students. For the students to be successful, course content must begin at the level of the learner.

Teach to the test: Teachers must ensure that course content is directed toward the criteria to be used as a measure of student success. There is nothing wrong with "teaching to the test" if the test is an accurate representation of the criterion material.

Summary

Student achievement can clearly be enhanced through effective teacher behaviors. Additional assistance in identifying teaching practices to improve teaching and learning are described in the book *Teaching Tips* (McKeachie & Svinicki, 2006). While many factors contribute to student learning, the one factor we can control is what we do—teacher behaviors.

References

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Clear Teacher Checklist

Please place a mark in the box that best describes your teacher in this class for each statement.

Key: N=Never S=Sometimes M=Mostly A=Always N/A=Not Applicable

Table 1. Clear teacher checklist.

My teacher in this class…	N	S	M	A	N/A
Gives explanations we understand					
Teachers at a pace appropriate to the topic and to us					
Tries to find out if we don't understand and then repeats things					
Teaches step-by-step					
Describes the work to be done and how to do it					
Asks if we know what to do and how to do it					
Prepares us for what we will be doing next					
Gives specific details when teaching					
Repeats things that are hard to understand					
Works examples and explains them					
Gives us a chance to think about what's been taught					
Explains something and then stops so we can think about it					
Shows examples of how to do class work and homework					
Gives us enough time for practice					
Answers our questions					
Goes over difficult homework problems on the board					
Shows us how to remember things					
Explains things simply					
Stays with the topic until we understand					
Repeats things when we don't understand					
Explains something and then works an example					
Explains something and then stops so we can ask questions					
Shows us how to do the work					
Explains the assignment and the materials we need to use to do it					
Stresses difficult points					
Asks questions to find out if we understand					
Explains how to do assignments by using examples					
Shows the difference between things					
Source: Kennedy, Cruickshank, Bush, & Myers (1978).					