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ABSTRACT

English and mathematics teachers in junior high schools were observed for an average of 20 one-hour periods throughout the school year. The purpose of the study was to determine the relationship between the affective behavior of the teacher and the students' academic achievement and attitudes. Anecdotal information based on the classroom observers' summary descriptions are used to capture the salient characteristics and the overall tone of teacher behavior and classroom environment. High achievement-high attitude classes were characterized by good organization, a high proportion of time in instructional activity, and task-orientation. Low achievement-low attitude classes were chaotic, unstructured classrooms with less task-orientation. The descriptive summaries suggest that there is a distinct relationship between good classroom management (planning and organization of activities) and student learning and behavior. (JD)

# Correlates of Effective Teaching

The Research & Development Center
for Teacher Education

The University of Texas at Austin

UTR&D

# Teacher Behavior, Student Achievement and Student Attitudes: Descriptions of Selected Classrooms

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Teacher Behavior, Student Achievement, and Student Attitudes:

Descriptions of Selected Classrooms

In the literature on classroom teaching, there is much discussion of the so-called "cognitive-affective trade-off." Can student achievement be enhanced only at the expense of affective factors? On the other hand, can we promote the affective growth of students without limiting their cognitive development? In short, must we choose between affective growth and cognitive growth as goals of education? One of the purposes of this study was to shed light on these questions by examining the relationship of student achievement and attitude to teachers' behaviors.

This report departs from many reports of large-scale studies of teaching. Rather than presenting information about teachers in tabular form, leaving the reader to construct prototypes of general teacher behaviors or classroom activities, we have elected to use anecdotal information in the form of vignettes based on observer classroom summary descriptions to capture the salient characteristics and the overall tone of teacher behavior, and classroom environment.

The anecdotal data presented here are from the Texas Junior High School Study conducted by the Correlates of Effective Teaching Program, Research and Development Center for Teacher Education, The University of Texas at Austin. The full study was a large-scale field based investigation of effective math and English instruction in a metropolitan school district in the Southwest. A brief description of the sample and the kinds of data collected are extracted from the full

report of process-outcome findings (Everston, Anderson, Anderson, & Brophy, in press; Everston, Anderson & Brophy, Note 1).

Description of Teachers in the Sample

Sixty-eight teachers (39 English and 29 math) were observed in nine of the eleven junior high schools in the school district. Two sections for each teacher were included, totaling 136 classrooms. Two observers alternated visits to these classes for an average of 20 one-hour observations in each class throughout the school year. (The actual range was from 16 to 22 observations.) Individual student data were also collected on over 2,000 students and partial data on another 1,600 students.

A wide variety of instruments was used to measure processes (classroom occurrences and behavior) and outcomes (the achievement and attitudes of students at the end of the year). Information about classroom processes comes from a specially designed low-inference coding system; several high-inference rating scales completed by the classroom observers, and from observer written descriptions of the classes. These descriptions were written for each observation and included impressions of classroom climate, teacher style, general student attitude and other events deemed relevant by the observer but not already included in the systematic observation. Descriptions were also summarized by each observer yielding a set of end-of-year summaries for each class.

The observers were trained for two weeks, the first week with videotapes and the second week in the classroom in pairs. An observer reliability of 80% agreement was obtained. It should also be noted that the observers were unaware of the teachers' effectiveness rankings prior to completing their descriptions. In addition, they had opportunities

to see a range of teachers, as well as, the same students in different classes.

Outcome Measures

1. The achievement tests were especially constructed for use in this study to measure knowledge of English grammar, spelling, mathematical computation, and reasoning. Tests were administered to each class near the end of the year, after observations were completed.

2. Before taking the achievement tests at the end of the year, all students were asked to rate their teachers on nine 5-point scales dealing with students' liking for their teachers, students' interest in the content areas, or students' assessment of how much they learned. A composite score was used to rank classes rated highly by students versus those rated less highly. These ratings will be referred to as student ratings of teachers (SRT).

Data analyses for this report were performed as follows: Using only the sample of students who had both an entering CAT score and an end-of-year achievement test score, scores on the achievement test were covaried with the prescore (CAT) yielding an estimate of residual gain for all classes. This residual was used to rank classes from high to low in relative achievement gain. These residual scores were used only to get an index of relative effectiveness, so that a sample of most and least effective teachers' classes could be selected.

As previously mentioned, observer descriptions were collected for each class period in each of the 136 math and English classes involved in the study. In addition to the daily descriptions, summary descriptions based on the entire observation period were written at the

end of observations in May. It is from these summaries that the information for the present paper is taken.

Selection of Classroom Descriptions

Selections of the teacher descriptions reported here were made in the following way. Each teacher's residualized gain score was paired with his/her summary description. In addition, the teacher's total score based on the attitude ratings of his/her students was also recorded. Each of the classes was then sorted within subject matter according to high (top third), medium (middle third), or low (bottom third) groups based on the residualized achievement scores. They were then grouped for high, medium, or low scores on student ratings of teachers. It was thus possible to sort class descriptions into the following groups: those with high achievement, high attitude; high achievement, medium attitude; low achievement, high attitude; etc., yielding nine groups for each of the two subject matter areas.

The vignettes reported here are taken from the extreme pairings in each subject. Thus, four classifications each for math and English were used. The descriptions of teacher behavior suggested (particularly in the groups in which achievement and attitude corresponded) that the classes in a particular group tended to exhibit a certain character profile, and it is one of the purposes of this paper to describe these profiles. Table 1 shows the number of classes which were classified as described above.

The selection of descriptions was governed by several considerations. First descriptions were selected which were most typical or representative of the teachers/classes in the group, i.e., descriptions were chosen that most fully exhibited the characteristics

definitive of the group. Those which are not presented here are not necessarily in disagreement with the selected descriptions but provided less complete information. Second, in many cases both classes of a given teacher fell into the same group, when this occurred, only one description was considered. Finally, those descriptions were selected that were for the most part matched with respect to entering ability. Tables 2 and 3 show the mean entering scores on the CAT (pretest) and on the posttest, along with mean scores for students' attitudes for each of the selected classes.

Relationships between Achievement in Math Classes and Student Attitude

A number of positive relationships between student attitudes, student achievement, and teacher behavior appeared in the larger study, particularly for math classes. In general, the student ratings of instruction and the student achievement gains in math classes were correlated positively and significantly ($r = .31$; $p = .02$). Several of the teacher behavior variables which were positively related to achievement gain were also related in the same direction to student attitudes. In general there was consistency in the relationship of attitudes and achievement to teachers' effective management methods and classroom control, to teacher monitoring of the classroom, to teacher organization and high amounts of time on task for students, and to teacher questioning.

Negative relationships between student attitudes and teacher behaviors were also consistent in some ways with the negative relationships between math achievement and teacher behaviors. Measures, such as teacher criticism of students, student inattention or unpreparedness for class, serious misbehaviors, and routine or

procedural contacts with students (rather than academic contacts) were negatively related to both attitudes and achievement.

Successful Math Classes

It should be emphasized that not all of these classes were identical, but the descriptions show similarity in certain teacher practices and distinctive teacher styles. First, we will discuss the highlights of mathematics classes where students gained more than expected and where student ratings were also high.

These classes were characterized by good monitoring, efficiency, and orderliness. Classroom rules were consistently enforced and most of the class time was spent in productive work with high student engagement. In addition to having the classroom organization and management under control, math classes whose students learned more could also be described as providing a higher percentage of teacher-student time in discussion. They also provided more public response opportunities, as well as more time in lectures and demonstrations to explain lesson content as opposed to merely assigning seatwork and waiting for students to come up with problems. These math teachers called on volunteers predominately and attempted to equalize opportunities for students to talk by calling on students in an ordered fashion.

Student contributions were solicited, and teachers integrated these into the class lessons. In addition, teachers praised students' answers, but reacted calmly to student misbehaviors. That is, misbehaviors were handled with a minimum of fuss or overreaction. Three of the classes which showed high achievement and high attitudes toward teachers were described by observers as follows:

Ms. Adams:[1] A very organized, efficient and thorough teacher. She had no discipline problems and students remained quiet and attentive. Class discussions focused on the processes of problem solving, rather than getting the correct answer. Students explained the methods they used to achieve the answers. Class ran automatically. Teacher provided puzzles and other challenges for students to test their skills. She taught to the entire class and did not group or individualize. Lectures were clear and well thought out so students had few questions afterward. Whole class time was filled with planned activities. Students respected her but used math class for the business of math. Teacher was friendly, but reserved and saved social contacts with students for before or after class.

Ms. Baker: Teacher had good control over the class. Students were rarely disruptive or lazy. Teacher was fair and consistent and students respected her. Rules applied to everyone and teacher did not tolerate infractions. Teacher expected a high level of effort. Students were motivated to work hard and the teacher answered all pertinent questions respectfully. She planned and used relevant examples worked out on the board. Teacher praised students' correct answers by making them feel that they had done what was expected. Room was neat and orderly. Teacher did not socialize with students, but maintained the expected teacher-student role. Students reacted to such a classroom atmosphere by being dependable, relaxed, self-reliant, and respectful of themselves.

Mr. Casey: Teacher had his classroom control down very well and had excellent management skills. Students were allowed to work together on seatwork and did so without becoming noisy or failing to finish their work. He gave clear and complete lectures always giving extensive feedback on homework, working harder problems on the board, answering questions from the class, and asking questions to check understanding. Regularly monitored seatwork by stopping to help those who raised their hands. He thoroughly reviewed the lecture for students who needed extra help. Encouraged students to be self-motivated and reaponsible, but did not punish those who forgot supplies. Students worked hard to please teacher and to receive his praise and approval. Students who were discipline problems in other classes were quiet, attentive and productive in this class. Teacher was friendly, keeping social contacts with students for before and after class, but he was respectful to students and in turn, students respected him.

[1]All names are fictitious.

Again it is important to note that all classes did not follow these characterizations. Teachers' styles differed but observers' descriptions of these classes were similar in certain underlying ways. Most of these similarities were captured in the general statements mentioned above.

Less Successful Math Classes

On the other hand, math classes whose students learned less than expected based upon entering capability were characterized in the following way: Classroom activities were interrupted a larger number of times for some internal or external reason; students were frequently allowed unstructured free time; teacher tended to fill empty or dead time with busywork and many times this was unrelated to the content areas. Students were judged by observers as being less inclined to do school work, having poor work habits, and as generally nonresponsive to teacher-initiated classroom discussions. This is coupled with the fact that teachers in these classes initiated large numbers of private contacts with students. These private contacts were frequently of two types: 1) long contacts which were remedial in nature, intended to help students with basic understanding of the curriculum content area; or 2) attempts by teachers to control student misbehavior in the presence of the observer.

In addition, teachers in lower achieving math classes spent relatively larger amounts of time correcting misbehavior. Frequently these corrections involved target or timing errors, i.e., teachers allowed the misbehaviors to go on too long, or corrected the wrong student (Kounin, 1970). This suggests that poor monitoring have led to selection of the wrong student. Classes where students achieved less

than expected and where student attitudes were also low were described by observers as follows:

> Ms. Davis: Teacher was not enthusiastic about teaching or about her students. Her classroom style consisted of assigning seatwork with little or no time in lecture or explanation. She was available for questions from students during seatwork, but otherwise minimized her contact with them. Her general facial expression was a frown and she often appeared nervous and flustered. The class was usually out of control. She tried to manage this by waiting until the noise level reached a high pitch and trying to shout the class down with threats of staying after school. This worked briefly, but the noise soon increased again. If students learned in this class, it was because they had the ability to do this on their own, not because of the teacher.
>
> Mr. Elliott: Teacher was in a constant state of anger and frustration over his students' lack of motivation and concern about their futures. As the year progressed he lost his temper and his patience and was nonreceptive and even sarcastic in response to their questions. He was erratic and would come to class prepared at times, used excellent control, and accomplished a great deal, trying to be a good teacher. At other times something would set him off and he would punish the class by refusing to teach. The students likewise sat for the whole period doing no work. He did have obvious favorites and spent a disproportionate amount of time working with them, neglecting the other students. He dressed neatly and sometimes seemed serious about what he was doing.
>
> Mr. Farmer: This teacher had extreme difficulty maintaining classroom control. There were severe discipline problems. Students ran roughshod over him and ignored his requests for quiet. Students' lack of respect for the teacher was very evident. The teacher would stand in front of the room at a loss for what to do. He attempted to lecture or explain problems, but this led to noise and disruption. Consequently, he had them do seatwork all period, but many times this did not keep them occupied and more noise and talking occurred. Only about half the class worked at any one time. Teacher knew his subject matter and was prepared for class; however, several students were outright defiant and egged the others on.

It is readily apparent that there are wide differences in math classes where students achieve and those where they do not. Initial ability of classes as measured by the CAT was comparable in both the high and low achieving classes cited above, but the quality of climate

and student cooperation is vastly different. This appears to provide more confirmation for the belief that teachers do indeed make a difference in student learning at the extremes.

Most of the differences between the two types of math classes are in the areas of classroom management and organization, teacher management of student responses and questions, and in the behavioral and motivational characteristics of students. There were also differences with respect to the percentage of time spent on, and teacher initiation of, instructional activities. The latter comes as no surprise, given the striking differences with respect to classroom management.

Math Classes with Contrasting Scores on Attitude and Achievement

There were also teachers whose classes demonstrated high achievement gains but who for some reason were not rated highly by their students. These have been labeled the high-low group. The opposite is also true of a small subgroup of classes that achieved poorly but rated their teachers highly (low-high group). It is intuitively appealing to examine these classes also to look for reasons for the contrasting scores. Teacher trainers and teachers alike have been concerned that high achievement may in some cases be accomplished at the expense of other important affective factors. In this study, there were few of these contrasting classes for math because, in general, high achievement and positive attitudes toward school and teachers generally occurred together, although there were some exceptions as can be seen in Table 1.

Only three math classes had high achievement gains but low attitudes. Observer descriptions of these classes were as follows:

Mr. Green: Teacher gave clear, concise lectures and could stimulate class interest and involvement in discussions. There were two groups of students in this class. . . a group of smart and articulate workers and their opposite. Teacher was prepared and planned work for the whole class period, but had some management problems. Teacher had less success in private contacts. He was reluctant to sit down and help students. He expected them to figure it out for themselves. He got upset with misbehavior and lost his cool. This eroded his motivation to help students sometimes. Teacher seemed ill at ease with observer in the room.

Ms. Harper: This teacher was good for students academically. She explained fully during lecture and then went from student to student to monitor seatwork and reexplain fully all that had been discussed. The class was a mixture of high and a few (6) low achievers which kept her hopping. She ability grouped and planned different assignments for each. She resented having observers in her room and felt threatened. She took students' misbehaviors personally and would pout. She was not particularly warm, praised little, but she stuck to her rules and kept pushing students along.

Ms. Irwin: This teacher appeared insecure about her abilities as a teacher. She lacked confidence about both managing the class and her subject matter. She relied heavily on the book and most of her time was spent reviewing. She had students work problems at the board, but volunteers were always the same ones. She spent the rest of the period correcting errors at the board. Students at the back of the room made fun and did not work. Teacher sometimes had game day where kids chose sides and competed in working problems the fastest. Bright students were able to gain something in the class, but poorly motivated ones wasted time. Teacher was anxious with observer in the room.

There are several common threads in these three descriptions. All teachers appeared ill at ease with the observers in the room. The classes tended to be mixed in terms of entering ability level. (The distribution in Ms. Irwin's class was bi-modal with about 12 students at or above grade level and about 11 students two to three grade levels below.) Possibly teachers aimed their instruction to the highest achievers, and perhaps it was with this group that the gains were made. All of the teachers demonstrated rapport problems in dealing with students either by overreacting to misbehavior or holding themselves

aloof from student contact. They seemed not to have worked out the appropriate effective stance particularly with low achieving students and a smooth working relationship had not been achieved.

The other interesting subgroup is the group of classes whose achievement gains were low, but who rated their teachers highly.

> Mr. Jackson: Lessons were seldom planned in advance. As a result some important math areas were not covered. Teacher seemed much more concerned about his rapport with students and tried to make sure students liked him. He always had a friendly grin or a pat on the back for them. He chatted with them a lot, filled his conversation with jive talk, and often told bad jokes at which some of the students winced. Discipline was somewhat lax. Class atmosphere was relaxed and open, and students were free to express their feelings. This atmosphere seemed to prevail because there was not that much work to do. His lectures were wordy, pumped up, and some times lasted 40 minutes. (Both observers, nevertheless, believed that the students would rate this teacher highly.)
>
> Ms. Keith: This teacher had a rather free, relaxed math class, which was allowed to operate with an unusually high noise-level. The teacher allowed too much talking and other disruptive behavior, which impaired her effectiveness. The observer had the impression that the teacher was timid about asserting her authority and that the students were aware of this. On the occasions when she did reprimand the class for talking, the students were quiet for a few minutes and then resumed their talking. She seldom followed-up when this happened, which damaged her credibility. The teacher definitely knew the material and seemed concerned for the welfare of the students. The teacher did provide individual desk help during the class, but there were usually too many other distractions from students for this to be of any benefit. In short, her weakness was classroom management and control. Her class was managed in a disorderly fashion; one never knew what to expect next. Those who did finish their work far ahead of time usually sat around and played cards, combed hair, or talked. Little was done on the teacher's part to curb these actions.

Both of these classrooms were in upper-middle or middle class neighborhood schools. In the first teacher's class, the suggestion is that perhaps important material was not covered, but more time and effort was spent "trying to interact with students at their level and to

win them over." This teacher appeared to be engaging in a popularity contest.

On the other hand Ms. Keith's relutance to manage her classroom more assertively could have resulted in a relaxed atmosphere to which the students responded positively, but at the same time, impaired her credibility and instructional leadership. Her students did not take her seriously and she did little to curb their extra-curricular activities. Time which might nave been spent in mathematics tasks was spent in other ways.

## Discussion

The patterns emerging from the characterizations of math classes are reasonably clear. The classrooms of the effective math teachers were business-like, orderly places to be. There were few disruptions or outbursts; goals were clear; lessons were completed and explanations given. They were not without warmth, but the primary business at hand was math instruction and performing the primary activities designed to bring that about. Participants in these classrooms appeared to share common perceptions about what was needed and what roles each played.

Alternately, in the low achieving classes, where attitudes were also low, there seemed to be a struggle for dominance. Much of our attitude data in math classes in the larger study (Evertson, Anderson, & Brophy, Note 1) suggest that in junior high classes students respect teachers who are competent but fair, and who possess the organizational and managerial skills that clearly demonstrate their command of the subject matter and of classroom procedure. In many respects junior high school age students push behavioral limits and test teachers' management skills (Doyle, 1979). Metz (1978) also reports that one of the most

important aspects of management lies in student challenges which occur in all classes as they try to get to know the teacher and to get their own way in areas of disagreement.

## Relationships between Achievement in English Classes and Student Attitudes

No significant correlation between student attitudes and academic achievement appeared for English classes in the full study. However, closer examination of the data showed that both high and low achieving groups, in contrast to middle achievement groups, tended to rate their teachers positively.

In the absence of positive predictors in the larger study did not yield a clear picture of what transpired in English classes. There were some findings of interest in the full study, however. Data from observer ratings showed that in low achieving classes less time was spent learning the systematic rules of English usage and spelling. The observer descriptions below verify the fact that a wide variety of activities were pursued under the rubric of English instruction. Descriptions of the English classes suggested that less time was spent on the criterion material and on the activities of grammar and spelling, punctuation, and other aspects of language usage. Of necessity, the English tests did not cover some of the broader verbal communication skills which some teachers may have attempted to teach. In addition, the correlation between the CAT used as the measure of entering ability and our achievement test (given at the end of the year) was extremely high, leaving very little variance to be accounted for by classroom measures. (The correlation between entering and exiting achievement was .92.) In addition to the restricted residual variance, several of the

classroom measures taken in English classes, such as classroom observation scales, showed restricted variance in comparison with those taken in math classes, however the summary descriptions are somewhat enlightening.

Successful English Classes

In the full study classes that were high achieving and were rated highly by students exhibited good classroom organization, management, and orderliness; students actively participated in class discussions; and observers rated these teachers as "appearing to enjoy teaching and dealing with students." In these classrooms, teachers often assigned homework, called on volunteers to answer questions, and allowed students to help one another with class assignments. In addition, students appeared more highly motivated and eager to learn. Teachers also spent more time giving feedback to student answers and using the lecture/demonstration approach for explaining lessons. However, it is still more difficult to characterize the "high achieving English class" than it is to picture the "high achieving math class." The following narratives describe three English classes which were high achieving and which were rated highly by students.

> Ms. Lake: This was a creative teacher who was always prepared and conscientious about having her work done for the class. She did well in teaching grammar and mechanics of writing, but her forte was her creativity in writing assignments and clever treatments of spelling words. She usually had a big grin on her face for the kids. If she had a problem, it was that her classroom control was somewhat loose. Her classes were large and there was a group of disruptive students which caused her problems until she moved them later in the year.
>
> Ms. Martin: Students appeared to enjoy this class. They seemed motivated to do their work and were responsive and bright as a whole. While the classroom was not particularly quiet, students did their work and the freedom to talk seemed

to work as a motivating factor. Class discussions were animated and many of the topics required reasoning and conceptualizing. Class also discussed moral issues. Teacher was warm and supportive and very concerned about students developing affective and communication skills. She appeared to enjoy teaching and was able to motivate students without having to become punitive.

Ms. Nolan: This teacher was a master of good classroom control and good management techniques. She could usually get class attention by eye contact alone. She was sincere and friendly and affectionate with students. She initiated a lot of contacts with them. Her dicussions on literature demonstrated an in-depth understanding of the stories and an excellent ability to direct discussions to the central aspects of the story. Students came into the room, got their materials, and began work. Students seemed to know what to do, and the class ran automatically. She appeared to approach the class with the assumption that everyone could accomplish the assigned work and that the only difference may be the speed with which they could do it. Those who approached lessons more slowly were given more individual assistance. While this teacher had a firm grasp of the subject matter, she was very concerned with development of affective skills. She respected her students and they returned this respect.

It appears that the high achieving-high attitude English classes hold a certain amount of excitement for students. It is also evident from these descriptions that the observers were caught up in the same enthusiasm for the teachers that they attributed to the students. Clearly, these English classes were interesting, stimulating, and perhaps memorable places to be. Teachers appeared to be student-oriented and devoted themselves to making the time interesting and enjoyable, but they also managed to instruct students in the mechanics of spelling, grammar, and writing which were the elements most heavily emphasized in the end-of-year achievement test.

Less Successful English Classes

Few positive predictors appeared for achievement in English classes in the process data for the larger study. In general, the process data from the larger study showed that less successful English classes had a

higher proportion of serious misbehaviors which went unchecked and a higher proportion of criticism of students both for academic matters and for calling out irrelevant comments during class. Students in these classes called out more often and either had their comments accepted or were given feedback. Other of these relationships appear puzzling. For example, observers were asked to rate the following: "teacher adjusts pacing to his or her perception of classes' aptitude." This rating showed a negative relationship with achievement. Normally this is a prescription given to teachers in their teacher preparation courses. One possible explanation for this negative relationship is that teacher perceptions of students' aptitudes is inaccurate in some cases, i.e., teachers assumed that students were not capable of doing the work and hence, did not require it, or they failed to teach the fundamental skills required to do higher level work. Another equally puzzling relationship was the negative finding for "student has good peer relationships." The most plausible explanation might be that good peer relationships and extroversion, even to the extent of taking over the class, lend their measure of chaos to an already uncontrolled classroom. This may adversely affect classroom climate for those students who are trying to do their work. The following is an example of how three of these low achieving classes (also rated low on student ratings) looked to observers:

> Ms. Olson: While this teacher spent some of her time teaching, she did not spend a great deal of it doing so. The students were mostly occupied doing individual projects. Her disciplinary methods were variable. Sometimes she came down too hard and other times students got away with murder. She often threatened but seldom followed through. There was an inconsistency in her disciplinary methods. (The observer noted that the teacher expressed a lack of interest in what

she was doing and mentioned that she was tired of teaching.)

Ms. Parker: While this teacher was friendly and outgoing to most students, she seemed completely disinterested in teaching. She came to class half-prepared, chit-chatted with the students near the front of the room and wasted class time. Frequently she had to repeat assignments because many did not hear. She gave a great deal of seatwork although students did quite a few oral assignments such as plays, reports, etc. She tended to be lax about talking, so students got by with a lot of unnecessary talking, some sassing, and arguing. However, if she really wanted them to get quiet, they did. She liked to joke and clown with the students, although she did have favorites and they got a majority of the attention and chances to respond. Teacher told class that she had applied for a counselor's position for the next year and if she got it, she would not be teaching English.

Ms. Quinn: Basically very little went on in this class. The teacher spent most of the time at her desk, reading, grading, or working on papers. The first 15 or so minutes of class were spent on spelling or spelling tests. Usually one of the brighter students called out the words for the rest of the class. The class members exchanged papers and graded them with someone calling out the correct answers. After this the teacher recorded their spelling grades 20 minutes into the class period. Assignments were given in the book, and the rest of the class period was spent in seatwork. Teacher could not pronounce or spell the words and gave erroneous definitions. When asked about a word, she told students to look them up in the dictionary because "it was good for them." (The observers suspected that the teacher did not know many of the words.) Other than this very little went on. There were no class discussions, very few private interactions, and little academic contact with students, except for discussions in literature. Her style was nondirective, and she emphasized student responses and ideas with little teacher input. (Both observers agreed that what was accomplished in the class was done with little effort on her part.)

One apparent underlying theme for these three classrooms was that little got done and the classroom climate was unstimulating and uninteresting. Teachers' interactions with students were either nonexistent or aimed more at socializing with students. From the glimpses of these classes, one might conclude that the teachers had not worked out a comfortable compromise with their expected roles as

instructors and their needs to interact with their students on a more informal basis. They had not achieved a balance between conducting the business of the classroom and that of being friends with students. On one extreme, the teacher minimized personal contact with students as in the case of Mr. Quinn. On the other extreme much of the time in Ms. Parker's class was given over to idle chit-chat at the expense of doing the assigned work.

In any case, it is not clear what academic learning took place. In one description there is the suggestion that the teacher emphasized spelling, but there is also the suggestion that students may have tuned out and simply gone through the motions of taking spelling tests, exchanging and grading them, without really absorbing the material. Also in at least one instance, the teacher was very concerned with helping students discuss and understand literature. Consequently, the students may have done well in this curriculum area, but it was not covered on the achievement test and any academic gain is unlikely to have been directly measured.

English Classes with Contrasting Scores on Attitude and Achievement

English classrooms with high achievement gains but low ratings for student attitudes are summarized below:

> Ms. Roberts: This teacher rarely lectured and seatwork predominated, however, she did emphasize spelling and the class spent a lot of time in spelling activities and drill. She used a lot of educational games which she designed herself to help students in these activities. She had a definite daily schedule which seldom varied. The class was filled with generally bright students, but they were seldom allowed to express opinions which did not agree with the teacher's. Her personality was hard to categorize. Her demeanor ranged between hostility toward students and other teachers and a false heartiness. Sometimes she tried to get chummy with the students, but they didn't respond because at other times she was sarcastic and critical. In an effort to be friendly she

appeared overly hearty. Mostly she was so mercurial and changeable that students didn't know where they stood. The students responded with alternating fear and irritation although some appeared to like her and tried to get along.

Mr. Scott: This was an interesting class in which to observe. The teacher had a creative style and spent a great deal of time holding class discussions and relatively little time in individual seatwork. The brighter students in this room were challenged to think and learn. One of his problems, however, was that he did not get along well with the less intelligent students in class. Except for disciplining them when they were disruptive or noisy, he virtually ignored them and left them to their own devices. In other instances, he was almost too mild-mannered and other students took advantage of him. Students in the halls on their way to classes would tap on the windows of his room to bait him. Some students in his class also tried to "get his goat." He tried to react calmly but his frustration showed.

Aside from his tense personality, the students did appear to be getting a great deal from his class. While he disliked teaching basic skills and would slight spelling and grammar, his approach to the subject matter was exciting and held students' attention.

Even with two classrooms, the central theme is fairly clear. In both cases the teachers appeared to have difficulty relating effectively to their students. Less is known from the descriptions about the quality of the instruction, although both classes had a high proportion of students who were bright and able. The suggestion is that while the academic instruction was adequate and even possibly conducive to academic gains, the attituda of students toward their teachers suffered and perhaps they made academic tasks worse than they needed to be.

Examination of the observer descriptions of English classes that showed lower achievement, but higher student ratings of teachers, indicates that in these classes English teachers used a variety of methods to teach students such as filmstrips, games, story reading, and discussion of literature. Most of this material was not covered by the

achievement test and this may be one reason the student performance was low. In some of these classes discipline was also a problem.

One of the largest categories was the group described as low achieving but who rated their teachers highly. Nine classes were categorized this way. A representative description of these classes follows:

> Ms. Thomas: Students did seatwork in this class about 90 to 95% of the time. They worked on contracts and this contract work was self-paced, but also varied by difficulty level ("A" contracts, "B" contracts, etc.). Any extra help the students needed with getting their work done they got by going to the teacher . . . she always stayed at her desk . . . or by asking a friend. The teacher allowed and encouraged collaboration among the students to some extent.
>
> On a nonacademic basis, the teacher attempted to promote solidarity with the class to the point where the students could (and did) take advantage. They never seemed intimidated by any of her threats, and she seemed to follow through only on a small percentage of them. The teacher seemed more concerned with developing social relationships than with teaching the subject matter. The class seemed to be a brighter than average class. I heard her say to them that they could all probably do the "A" contract work. A couple of troublemakers kept the class lively. Also, some of the most mature and socially apt students in the school were apparently in this class. Students might have enjoyed this class without learning much. The teacher seemed to operate with the assumption that students would all be motivated to get the material from their packets and that those who couldn't would come up to her of their own volition.
>
> Ms. Underwood: This teacher was really concerned about her students. She was idealistic and wanted her students to be able to cope effectively with life. She tried to instill a mature attitude and a sense of fair play in the students. She sponsored a multiracial club after school hours and had excellent rapport with the class particularly minorities. She listened to their problems and was sincerely concerned and involved. She didn't cover much academic material in class, however, and often she appointed students to run the class. There was a great deal of class time spent in chit-chatting and talking things over with individuals. Very little work went on and the teacher graded the class on how much they tried, rather than what they had accomplished. (The observer felt that the teacher had excellent potential to be a fine

teacher, but that at present she needed to "teach more and socialize less.")

Ms. Vinson: This teacher had all of her classes organized in a particular way. The first five minutes were for organization and reading materials. The next five minutes (timed) were for individual reading, during which the students were not allowed to talk or move around. After this, the class proper began. The teacher lectured a number of times and was interesting and informative, but the lectures and discussions were marred by the interruptions of a few problem students. The rest of the class time was spent in individual seatwork, which was also disrupted by the problem students. Seatwork predominated generally over teaching the class as a whole.

The teacher had a positive attitude most of the time. She dealt well and warmly with most students, but was lax in her discipline, and some took advantage of this. She spent a great deal of time giving special help to some of the slower kids in the class, and they seemed to appreciate this.

There were a few students who tried to bait her into an argument though she would never react strongly. At most, she would quietly stop what she was doing and answer their irrelevant questions or tell them to be quiet. These students were continually disruptive, got very little work done, and bothered the rest of the class a great deal.

## Discussion

In contrast to the data from math classes, our study did not yield such a clear picture of English classes. This was born out in the larger study which failed to yield a coherent set of predictors of student achievement for English classes. Why was there such a comparatively large group of low-achieving, high-attitude classes in English and not in math? One possible explanation is the lack of a shared perception of the goals and importance of junior high English, which presents a major difficulty not only for effective teaching itself, but for the study of effective teaching as well. As was noted in the final report (Evertson, Anderson, & Brophy, Note 1):

> There are no agreed-upon sets of skills or goals which are generally perceived as important and which are the exclusive

responsibility of junior high English teachers. This leads not only to difficulties with measuring learning outcomes, but also to difficulties with getting students to perceive their work as important. Thus, students tend to judge their English teachers primarily by affective criteria rather than their academic effectiveness (as judged by the achievement test).

With math, however, there seems to be greater agreement between teachers and students regarding the nature of the classroom activities required for learning. Thus, the English teacher faces a greater problem in maintaining the cooperation, attention, and task-orientation of the students. In addition to this, it must be kept in mind that "English" encompasses a wider range of classroom activities than math. Hence, it may be that the absence of a significant correlation between student ratings of instruction with student achievement reflects the difficulty of constructing an achievement test that accurately reflects the many goals of English teachers.

Another singularity of the data with respect to English classes is that the pretest accounted for an extremely high proportion (85%) of the variance on the posttest. Thus, the entering achievement levels of the students played a particularly important part in mediating the teachers' effects on achievement. A teacher who began the year with two classes whose average achievement levels were quite different, might produce quite different effects in terms of gain on the two classes, while a teacher whose two classes were similar would be more likely to have similar effects on gain. However, on pupil attitudes the effects across classes for a given teacher were quite consistent, regardless of entering pupil achievement. This may indicate a consistent pupil reaction to a consistent teacher style. However, the often inconsistent pupil achievement results across English classes may indicate that the

adjustments the teachers made in instruction for their two classes were differentially effective or that teachers were consistent in their behavior to their classes but that students achieved differentially. The data on teacher behavior suggest that something of both occurred.

Apart from these particular variations in the results of our study between math and English classes, the descriptive summaries of the high-achievement English classes correspond in many ways with those of the high-achievement math classes. In both cases, effective classes are business-like and well organized. The teachers in the higher achieving English classes seem best characterized as having an overall sense of purpose or direction, rather than a day-to-day attitude of survival or co-existence. This produces an expectation of accomplishment and gives some focus to the various instructional activities. Low attitudes in such classes appear to result from the teacher's inability to effectively manage instruction such that individual differences among students are taken into account.

In the English classes categorized as low attitude-low achievement, on the other hand, there is a noticeable absence of a teacher-directed agenda. These teachers do not act as though they are fulfilling long-term goals; they do not seem to have pupil achievement in mind. Instead, they are either marking time or filling it with activities whose functions appear to be "making it through the period." Apparently, the students have gotten the message.

## Conclusions

The descriptive summaries clarify the relationships among teacher behavior, student achievement, and student attitude in math and English classes. They suggest that in both subject areas good classroom

management, effective teaching, a large proportion of time spent in teaching, and a positive student attitude go hand-in-hand. It was difficult to see relationships among effective teaching, student achievement, and student attitude in our earlier report using data from the whole sample, but when we focus on the extremes of achievement and attitude using descriptions of existing classrooms, some important relationships begin to emerge.

High achievement-high attitude classes are characterized by good organization, a high proportion of time in instructional activity, and task-orientation, whereas low achievement-low attitude classes present the counterpart--chaotic, unstructured classrooms with less task-orientation. The descriptive summaries strikingly suggest that there is a relationship between the planning and organization of activities, the creation of an overall direction or focus for students, good management of student behavior--in short, a relationship between the essential features of what can be called good "classroom management" and student learning. That is, there was simply less pupil deviance or misbehavior and more task-oriented pupil behavior in the higher achieving classes. Also in classes where smoothly running activities were carried out there also appear to be less misbehavior. This seems to be largely a result of teacher management, rather than initial differences in cooperation among students. The incidence of good and poor managers was distributed across schools, entering achievement levels, within-class pupil achievement variance, and other characteristics potentially correlated with pupil cooperation.

In contrast, the classes in which students achieved less were characterized by an absence of good management. This relationship is

not surprising, for good classroom management promotes the structuring of events in classrooms in such a way as to maximally promote the orientation of the students to learning tasks. This relationship is particularly clear in the high achievement-high attitude and low achievement-low attitude classes.

The picture is less clear with respect to the high achievement-low attitude and low achievement-high attitude classes. In the former case, it may be that the composition of the class is an important factor. A high (average) achievement gain may have resulted from the teacher concentrating on a group of higher-ability students at the expense of lower-ability students. The lower attitude rating can be assumed to be the consequence of this differential behavior. Indeed, this is strongly suggested by the bi-modal distribution of entering ability in Ms. Irwin's class. The low ratings by low ability students influenced her attitude score. In both math and English, less effective teachers had not solved the problem of how to deal with individual differences in entering achievement and ability. The use of small groups and large amounts of seatwork were not successful in obtaining sustained effort, possibly as a result of the poor monitoring practices of the teachers or because of inability to implement instructional activities in which students were both accountable and successful.

More successful teachers did not cope with individual differences as much through grouping and greater amounts of individual seatwork. They tended instead to keep students together for discussions and explanations. When students were given assignments, the teachers monitored carefully and provided corrective feedback. Grouping strategies or seatwork may not necessarily be inappropriate, but if they

are used extensively with this age group, the teacher must manage them in ways that all pupil work is monitored carefully.

No consistent picture emerges in the case of low achievement-high attitude classes. With respect to math classes, the descriptions suggest that the high attitude may be a result of a greater social rather than academic teacher orientation. If this is so, then low achievement is hardly a surprise. With respect to English classes, we have noted above that in the larger study a conspicious absence of predictors of English achievement. However, the examination of class descriptions points out the variety of ways classes can differ.

In passing, the value of anecdotal descriptions such as these are that they provide a more unified perspective of classrooms. They are a useful supplement to coding systems, which by their nature are more selective. When combined with these more elaborate observation systems, descriptions have a great deal of interpretive power, especially when outcomes are measured on a large sample. They contribute to an understanding not simply of selected features of the classroom but of the functioning of the classroom as a whole. However, one drawback of these and other data collected during the school year is that while they may reflect the standing patterns of behavior in classrooms, we have no clear ideas about how these effects occurred.

In sum, these data do suggest some valuable ways of interpreting classroom events and the relationships among teacher behavior, student achievement, and student sttitudes. Variations among high-achieving classes with respect to attitude appear to be in part a function of the way the teachers are able to spread their attention among all the students. Hence, low attitudes in high-achievement classes may be due

to partly the variation in student entering ability, which exacerbates the problem of directing attention to all the students. Finally, the data suggest that being a good classroom manager is an essential attribute of being a good teacher and that students respond positively to good management. Students learn most effectively, and with positive feelings, when they are in a classroom that is well managed and where teaching occurs.

## Reference Notes

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## Footnotes

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Table 1

Distribution of Math and English classes

for each combination of achievement and attitude level

(Math N = 58, English N = 78)

| Students Ratings of Teachers (attitudes) | Achievement High | | Middle | | Low | |
|---|---|---|---|---|---|---|
| | Math | English | Math | English | Math | English |
| High | 6 | 9 | 7 | 8 | 6 | 9 |
| Middle | 10 | 8 | 7 | 8 | 6 | 10 |
| Low | 3 | 10 | 3 | 10 | 10 | 6 |

Table 2

Attitude and Achievement Scores

for High and Low Math Classes

| | Teacher[a] | Grade | CAT $\bar{x}$ | CAT Sigma | Exiting Ach | Ach Sigma | Residual Gain | SRT | SRT Sigma |
|---|---|---|---|---|---|---|---|---|---|
| High Ach High Att | | | | | | | | | |
| | Ms. Adams | 7 | 7.1 | 1.2 | 62.2 | 17.4 | 6.29 | 53.4 | 9:1 |
| | Ms. Baker | 8 | 7.0 | .6 | 59.5 | 15.7 | 14.89 | 53.6 | 7.7 |
| | Mr. Casey | 8 | 7.5 | 1.5 | 63.2 | 15.5 | 9.89 | 54.0 | 6.8 |
| Low Ach Low Att | | | | | | | | | |
| | Ms. Davis | 8 | 7.2 | 1.5 | 38.9 | 19.5 | -5.95 | 42.7 | 9.6 |
| | Mr. Elliott | 8 | 6.7 | .9 | 41.2 | 16.0 | -5.52 | 43.9 | 11.0 |
| | Mr. Farmer | 8 | 7.0 | 1.6 | 39.2 | 21.9 | -10.11 | 44.9 | 12.2 |
| High Ach Low Att | | | | | | | | | |
| | Mr. Green | 7 | 5.6 | 1.4 | 36.6 | 17.2 | 9.43 | 43.8 | 8:3 |
| | Ms. Harper | 7 | 5.6 | 1.3 | 28.4 | 10.9 | 4.44 | 45.9 | 13.0 |
| | Ms. Irwin | 8 | 7.2 | 1.3[b] | 49.5 | 21.8 | 9.26 | 37.3 | 12.3 |
| Low Ach High Att | | | | | | | | | |
| | Mr. Jackson | 7 | 7.1 | 1.6 | 42.4 | 19.0 | -7.57 | 53.9 | 6.4 |
| | Ms. Keith | 8 | 6.9 | 2.4 | 43.9 | 23.6 | -4.50 | 55.3 | 6.9 |

[a]All teacher names are fictitious.

[b]bi-modal

Ach test $\bar{x}$ = 45.0, SD = 24

SRT $\bar{x}$ = 50 SD = 10 (standardized)

Table 3

Attitude and Achievement Test Scores

for High and Low English Classes

| | Teacher[a] | Grade | CAT $\bar{x}$ | CAT Sigma | Ach $\bar{x}$ | Ach Sigma | Residual Gain | SRT $\bar{x}$ | SRT Sigma |
|---|---|---|---|---|---|---|---|---|---|
| High Ach High Att | | | | | | | | | |
| | Ms. Lake | 8 | 7.9 | 3.1 | 160.1 | 40.7 | 5.28 | 54.3 | 6.5 |
| | Ms. Martin | 7 | 8.1 | 1.5 | 177.2 | 12.2 | 9.32 | 58.6 | 4.3 |
| | Mr. Nolan | 8 | 8.4 | 1.1 | 172.7 | 18.5 | 4.54 | 54.3 | 6.6 |
| Low Ach Low Att | | | | | | | | | |
| | Ms. Olson | 8 | 8.0 | 2.8 | 155.5 | 38.6 | -7.25 | 42.8 | 8.7 |
| | Ms. Parker | 7 | 8.1 | 2.2 | 162.6 | 21.8 | -5.55 | 31.4 | 11.7 |
| | Mr. Quinn | 7 | 7.1 | 1.7 | 151.2 | 28.4 | -1.03 | 35.8 | 9.1 |
| High Ach Low Att | | | | | | | | | |
| | Ms. Roberts | 8 | 7.8 | 2.2 | 168.3 | 24.5 | 9.05 | 42.5 | 9.2 |
| | Mr. Scott | 7 | 7.8 | 1.9 | 170.1 | 17.4 | 13.06 | 43.8 | 11.6 |
| Low Ach High Att | | | | | | | | | |
| | Ms. Thomas | 8 | 8.2 | 2.6 | 158.1 | 29.1 | -9.89 | 56.9 | 6.2 |
| | Ms. Underwood | 8 | 6.3 | 1.4[b] | 139.7 | 25.2 | -10.6 | 59.1 | 3.5 |
| | Ms. Vinson | 8 | 7.7 | 2.4 | 155.1 | 40.5 | -3.49 | 56.1 | 6.1 |

[a]All teacher names are fictitious.

[b]bi-modal

Ach test $\bar{x}$ = 156, SD = 35

SRT $\bar{x}$ = 50, SD = 10 (standardized)