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THE UNIVERSITY OF ALBERTA

TEACHER EXPECTANCY EFFECTS AND  
STUDENT ATTRIBUTES

by

C

LAURIE JANE MIREAU

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE  
OF DOCTOR OF PHILOSOPHY

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EDMONTON, ALBERTA

FALL, 1980

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled Teacher Expectancy Effects and Student Attributes submitted by Laurie Jane Mireau in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Educational Administration.

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## ABSTRACT

This study investigated the interaction of one grade three teacher and his 26 students using a case study methodology in conjunction with a variety of data collection techniques. The study was based on the assumption that the information, perceptions, and attitudes held by a teacher affect the nature and quality of interaction with students and of teacher behavior in general. The major purposes of the study were to examine the extent to which either process or product expectancy effects could be detected in the behavior of this teacher and to describe his teaching behaviors and the relationships existing between the teacher and his students.

Numerous data collection procedures were adopted in order to gain an understanding of the factors affecting instructional strategies employed by this teacher and how he coped with student-imposed demands during teaching. The attempt was made to triangulate data sources on teacher-exhibited behavior with teacher-expressed thoughts and with teacher verbal behavior.

Individualized student profiles were developed for all 26 student subjects. Verbal interaction received by the student in relation to the teacher's affective reaction to him and in relation to teacher-held expectancy for his achievement were examined in detail.

Self reports of the teacher's interactive thoughts about students during eight videotaped lessons were gathered using stimulated recall procedures. Additional introspective information about teaching performance and about students was obtained during regular interviews.

All process data were recorded over a three month period, March to June, 1979, during language arts and mathematics instruction. Subject area comparisons were made for the various factors under study and

differential verbal treatment of individual students and of groups of students was noted. In the affective realm, the most verbal contacts occurred with "concern" students and "rejection" students and the least occurred with "indifference" students. "Attachment" students received more qualitative interaction in the form of higher level questions. The teacher had assigned a high, middle, or low expectancy rating to his students for the subject areas of language arts and math. Although high expectancy students in language arts received the highest percentage of total interactions and substantially more qualitative interactions, the reverse trend was in evidence during math lessons when more total interaction and more qualitative interaction was accorded to the lowest expectancy group. When all students were regrouped into the two reading groups, total amounts of interaction were nearly equal but more qualitative interaction was received by the better reading group and more managerial and feedback contacts were directed toward the poorer reading group. The 13 boys were awarded a slightly higher average expectancy score in both subject areas and in fact received marginally higher academic results in the end of the year achievement tests when compared with all 13 girls.

Averaged scores tended to mask the individual differences to a great degree. Detailed examination of the 26 individualized profiles confirmed that differentiated treatment was provided for each child on the basis of the teacher's assessment of his relative strengths and weaknesses as a student. Traces of the expectancy effect were found, as evidenced in the verbal interaction exchanged with students, and the introspective information from the teacher helped to present the rationale behind the differential treatment of individual students and of groups of students.

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CHAPTER I  
INTRODUCTION AND STATEMENT OF THE PROBLEM

INTRODUCTION

Classroom-based research often generates more questions than it answers. This study addressed some of the questions that continue to intrigue educational researchers and to guide their research efforts.

With a growing interest in the interactive nature of the teaching-learning process it is no longer sufficient to focus exclusively on identifying effective teaching strategies, even though it is widely accepted that "teachers make a difference" (McDonald, 1976). Therefore, in conjunction with curriculum concerns and teaching behaviors, the pupil's perspective (King, 1979) must be considered in future research studies. Research based on the analysis of group scores, while valuable, needs to be complemented by in-depth studies of observed behaviors of individual students (as in Smyth's, 1979, examination of four students' use of academic learning time) and of various groupings of students. Brophy et al. (1976:1) claimed that statements about students in general have very limited meaning and Eggert (1977:8) concurred that since it is the individual who does the learning, the student should be the unit of analysis in classroom-based studies about teachers and students. Viewing the student in isolation and as a member of various groups in the classroom will help to provide this needed information.

The ways in which a teacher perceives individual students and subsequently makes judgments about them determines in large measure the pedagogical strategies selected for them. Studies have indicated that the teacher's perceptions of individual students do lead to differential

treatment of students as evidenced in verbal interaction patterns (Brophy and Good, 1974).

The recognition that teachers are individuals with beliefs about teaching which may influence their teaching behavior has led to the investigation of the mental processes that underlie teaching performance. It is believed that how teachers think will determine how they will act. If such a direct connection exists then investigating teacher thought processes and the perceptions that govern teaching behaviors would seem to be a worthwhile pursuit. Thus a focus on teacher thought processes is considered to yield a potentially rich source of data. However, it may prove to be too individualized a process which may not answer the broader questions or help to explain the instructional process in a generalizable way.

The National Institute of Education's Panel 6 Report (1975:1) concerning investigations of the teacher's "mental life", such as the information about students which is processed covertly, indicated that students do influence teacher behavior and decision-making. The realization that a classroom of students is comprised of individual students who hold differing attitudes toward school and who possess unique attributes and levels of ability has led to more serious consideration of the individual student in recent research studies. Brophy and Good (1974:3) claimed that relatively little educational research had focussed on the individual student: "We believe that this is a major reason why educational research has contributed relatively little knowledge that teachers can apply in classrooms."

The two-way interaction which occurs in the classroom is as much due to student effects on teachers as to the better known teacher effects

on students . Researchers (Brophy, Evertson, Anderson, Baum, and Crawford, 1976) tried to ascertain to what extent certain personality types and certain student behaviors predictably influence teacher behavior toward a specific student and, in turn, whether the resultant (fairly predictable) teacher treatment of this particular student influences his individual academic achievement. Hence it might become possible to estimate a student's achievement level simply by describing his salient personality characteristics. Predictions of great accuracy are unlikely but general trends, true of certain types of students, may enable future researchers to develop useful guidelines for effective teacher interaction with specific types of students.

Teachers act on the basis of the perceptions they hold about students. The degree to which they are aware of these tendencies determines the extent of influence these perceptions will have . Also the degree of accuracy of these perceptions and the extent of flexibility exercised in their maintenance affects the suitability of teacher treatment of students.

#### PURPOSE OF THE STUDY

In the attempt to investigate the "bidirectionality" (Fiedler, 1975:735) of the instructional process and the effects of student characteristics and behavior upon a teacher, the present study examined the ongoing instruction in one classroom over a three month period.

A major focus of the study was an exploration of the teacher's cognitive processes such as the ways in which he had formed expectancies for student performance (Finn, 1972) and his prescriptions, diagnostic judgment and decision making (Shavelson, 1973, 1977) on the basis of



his revealed perception of the individual students in his class. The data collected took the form of teacher-provided background information about pupils, teacher rankings of all pupils, and ratings using numerical scores on such varied measures as personality characteristics, usual work habits, projected achievement scales, and through teacher-expressed attitudes and feelings toward the students which were gathered using general interviews and stimulated recall procedures. It was anticipated that an examination of this teacher-provided information might help to explain how and why this teacher's behavior toward his students had become differentiated, if indeed it had, and might help to describe the links between achievement expectancy held for students, teacher treatment of students, and student achievement. In other words, in what ways did this teacher's expressed perceptions about his students appear to influence his treatment of them and, in turn, their achievement.

Dyadic verbal interaction data were recorded. The amount and kind of verbal interaction occurring between a teacher and individual students within the context of classroom instruction have been found to vary considerably in other studies (Dusek, 1975 and Firestone and Broudy 1975). The differences that occurred were analyzed and teacher-provided data about the individual student were used in the attempt to describe how differential verbal treatment was effected.

Various data sources for the teacher's introspective thoughts and perceptions about students were complemented by other data sources in the form of dyadic verbal interaction data, end of the year achievement data, and data on the overt teaching behaviors exhibited during

classroom instruction.

The information is presented in narrative, descriptive form reporting teacher-expressed thoughts and perceptions about students. The results of analyses of scores received by the different groupings of students and by each individual student are presented and discussed.


#### STATEMENT OF THE PROBLEM

The major overarching question addressed in this study was:

To what extent is it possible to explain how or why differential treatment of students occurs by examining the teacher's perceptions of his students?

The study was further guided by the following, more specific, research questions:

- 1.0 What are the common characteristics of students assigned by the teacher to each of four attitude-to-student groups (attachment, concern, indifference, and rejection)?
  - 1.1 What were the perceived personality characteristics which might serve to explain the teacher-expressed attitudes and affective feelings toward these groups of students?
- 2.0 What evidence is there, if any, of expectancy effects?
  - 2.1 What evidence is there, if any, of product expectancy effects? What is the relationship of teacher-held expectancy to end of the year achievement results?
    - 2.11 for students assigned to high, middle, and low "probable highest achiever" levels (for general achievement in all subjects)?
    - 2.12 for students assigned to high, middle, and low "probable achievement in language arts" levels?
    - 2.13 for "good" and "poor" reading groups?
    - 2.14 for students assigned to high, middle, and low "probable achievement in mathematics" levels?
    - 2.15 for boys and for girls?
    - 2.16 for the four attitude-to-student groups?

- 2.2 What evidence is there, if any, of process expectancy effects? What is the relationship of teacher-expressed expectations to the amount and kind of verbal interaction exchanged?
- 2.21 for students assigned to high, middle, and low "probable highest achiever" levels (for general achievement in all subjects)?
  - 2.22 for students assigned to high, middle, and low "probable achievement in language arts" levels?
  - 2.23 for "good" and "poor" reading groups?
  - 2.24 for students assigned to high, middle, and low "probable achievement in math" levels"?
  - 2.25 for boys and for girls?
  - 2.26 for the four attitude-to-student groups?
- 3.0 Using all available information, to what extent is it possible to construct a comprehensive student profile which would describe the student's behavior, his achievement, his membership in various grouping patterns, and the relationship he had with this teacher?
- 4.0 What information is obtainable from the interviews held with the teacher?
- 4.1 Which kinds of thoughts about students in particular were reported during stimulated recall interviews?
  - 4.2 What teacher attitudes and priorities are revealed in all interview data?
  - 4.3 To what extent do teacher-reported thoughts clarify/corroborate numerical scores assigned on the different student ratings?
- 5.0 How could the teaching behavior of the teacher subject be described?
- 5.1 What are the predominant teaching behaviors of this teacher?
  - 5.2 What are the predominant verbal interaction behaviors of this teacher?
- 

DEFINITION OF OPERATIONAL TERMS

Expectations: are those inferences and predictions that teachers make about the present and future academic achievement and general classroom behavior of students (Brophy and Good, 1974:32). These expectations are closely tied to academic achievement and refer to the teacher-projected estimates of student behavior and achievement.

Attitude-to-Student: are affective responses of teachers to students (Crano and Mellon, 1978:47). These are closely related to personal qualities of the student and his reactions to the teacher. These teacher attitudes correlate with differential teacher behavior (Willis and Brophy, 1974:529).

Pupil Attributes: are personality characteristics and qualities which are used by the teacher to describe the pupil and they form the basis on which teachers develop attitudes and expectations.

Self-Fulfilling Prophecy: is an expectation or prediction, which may be false initially, which initiates a series of events that cause the original expectation to become true (Brophy and Good, 1974:35).

Dyadic Verbal Interaction: refers to the verbal interaction exchanged by the teacher and an individual student in an instructional setting.

Expectation Effects: refer to the communication of teacher expectancy to children. When the teacher's behavior does this, expectation effects are said to be in operation (Muttart, 1977:7). These expectations could be communicated directly (told to the student) or indirectly by the amount and quality of attention given to individual students by the teacher.

Interactive Thoughts and Decisions: are those thoughts and decisions which occur only within the stream of conscious thoughts the teacher is having during actual instruction.

Stimulated Recall: is a branch of introspective methodology in which audio and/or visual records of a subject's past behavior are used to facilitate that subject's recall of the covert mental activity which was occurring simultaneously with the recorded overt behavior (Marland, 1977:11). It is a method of obtaining from the subject a retrospective account of his covert mental activity which co-occurred with the subject's overt behavior.

Content Analysis: is a technique for making inferences by systematically and objectively identifying specified characteristics of messages (Holsti, 1969:14). The technique involves segmentation and coding of the qualitative (written transcript) data thus transforming it so it becomes susceptible to quantitative treatment and permits precise description of relevant content characteristics.

#### SIGNIFICANCE OF THE STUDY

If the routine events that occur in elementary classrooms are to be fully comprehended, the day-to-day activity of teachers and pupils must become the focus of serious and intensive investigation in future

research studies in education. This study attempted to examine and describe such events and interpersonal relationships that operate in the learning environment by using a phenomenological, case study perspective.

The teacher processes countless pieces of information during the teaching day. It appears that certain kinds of information (for example, perceptions of student ability or student attention) are particularly salient for interactive thinking and decision making in which teachers are engaged. By investigating this teacher's interactive thought processes using stimulated recall methodology and general interviewing techniques, this study adds to the findings on interactive thoughts and decisions by narrowing the focus to those particular thoughts which occur as a reaction to perceived student behavior and attributes during eight instructional periods chosen for examination.

Although general interviewing techniques can reveal global teacher thoughts and beliefs as well as specific thoughts about students, an insightful and promising method of obtaining the teacher's interactive thoughts is to present the teacher with issue-specific stimuli from a videotaped lesson in progress and thereby elicit the covert mental thoughts which were associated with these specific incidents. This study adds to the research on stimulated recall as a technique for obtaining such information and also adds to the findings concerning the kinds of interactive thoughts about students and other instructional concerns that the teacher processes during the teaching of the lesson.

Although extensive research has been conducted on the identification of teacher expectation effects, the investigation of the process by which

the effect operates in the classroom is a relatively recent research area. Acting on the basis of our expectations and affect is a necessary and unavoidable human tendency. The actual effect of holding performance expectations in the classroom will not be in operation unless the teacher communicates these expectations and affective feelings to students who become influenced by them reciprocally. Differential teaching behaviors, as evidenced in verbal interaction patterns, can communicate this information to students as can assignment to different grouping patterns such as reading groups. The researcher has obtained one teacher's expectations for and attitudinal feelings about the students in the class and has gathered extensive verbal interaction data in the attempt to identify and describe any relationships which seem to indicate an expectancy effect is in operation. Thus the study helps to extend the findings in expectancy research.

The overt behaviors of teachers are subject to potential misinterpretation if classroom research is limited to observational measures strictly. By delving into the mental life of teachers and their perceptions of students, researchers may begin to explain some of the reasoning behind the differential treatment of students exhibited by teachers. This study has combined observable behavioral data on exhibited teacher behaviors with a complementary, introspective investigation of the teacher's thought processes during instructional time and of teacher-held expectations and affective feelings concerning students in the class. One of the main contributions of this study is the triangulation or corroboration of varying sources of data about the teacher (thoughts, classroom behavior, verbal interaction) and the resultant description of selected aspects of classroom life during the three month duration of the study.

A final contribution of this study is the recommendation that students must be viewed not as a "class" but as individuals in future research studies. It is this focus on the child that will result in specific information about teacher-student relationships which collectively may provide the factual basis necessary for more generalizable theory on teacher-student relationships.

#### ORGANIZATION OF THE STUDY

This chapter has outlined the main purposes of the study, the research problems, definition of terms, and significance of the study.

In Chapter II, The Review of Related Literature and Research, the first section presents the background of research in teaching from which the present study is drawn. Strengths and weaknesses of case study methodology are reviewed next followed by the third section on teacher thought processes. Research on the teacher expectancy effect is then discussed as well as a survey of research conducted on teacher attitudes to students. The final section of the chapter reviews studies concerning interaction in the classroom and ends with a brief summary of the various research areas reviewed.

In Chapter III the design and procedures used in this study are described and the subjects, instrumentation, phases in the study, data preparation and data analysis are presented.

Chapter IV describes how the teacher assigned the student subjects to one of four attitude-to-student groups. The general characteristics of each of the four attitude groups are presented and compared to findings from previous research on teacher attitudes to students.



Chapter V presents the data obtained on teacher-assigned expectancy measures for the students. Findings concerning the extent to which product expectancy effects and process expectancy effects seemed to be in operation in this classroom are presented.

Chapter VI presents all 26 student profiles as brief case studies in themselves. Each profile was created by using teacher-provided data on the student's personality characteristics, work habits, and ability which were related to achievement, I.Q., and dyadic verbal interaction exchanged between the particular student and the teacher.

In Chapter VII, concerning teacher thought processes, the results of a micro content analysis of the stimulated recall transcripts determined the substance of his expressed thoughts about students during teaching. The results of a macro-analysis of all interview data which indicate the priorities and attitudes held by the teacher are presented.

Chapter VIII presents findings concerning the teacher's behavior. Findings were derived from both the high inference measures of overt teaching strategies used and from the low inference measures of dyadic verbal interaction behavior in the attempt to describe the predominant aspects of the teacher's behavior.

In Chapter IX, a summary and discussion of the findings as they relate to the research questions are presented. Recommendations for future research are suggested in this final chapter as well as implications for teaching, teacher education, and educational administration.

## CHAPTER II

### REVIEW OF RELATED LITERATURE AND RESEARCH

In this review of related literature and research, the pertinent antecedent research areas from which the present study evolved are identified. These seemingly disparate areas have made both theoretical and methodological contributions which have been incorporated into the research design of the present study.

This chapter focuses on recent trends in research in teaching with particular attention given to the following areas: the case study method in conjunction with other methodologies; teacher thought processes; the expectancy effect; teacher attitude to student; and the reciprocal influences of teacher and students in the classroom.

#### RECENT TRENDS IN RESEARCH IN TEACHING

In reviewing studies conducted prior to the early 1970's, Rosenshine and Furst (1971 and 1973) and Dunkin and Biddle (1974) concluded that educational research findings to that date had been "tentative" at best. In future they recommended a concentration on the identification and investigation of mediating processes which were operating in classrooms and on the development and testing of more suitable observation and measurement techniques.

Active research in teaching in the years following generated a plethora of classroom observation instruments designed to record and measure specific classroom behaviors. If the collection presented in Simon and Boyer's (1974) Mirrors for Behavior III is any indication, a great proliferation of such classroom observation instrumentation abounds.

A second result of large scale experimental and correlational studies in teaching was the identification of specific teaching behaviors which appeared to correlate with gains in student achievement (Gage, 1978 and Stallings, 1978). The temptation has been to infer causality when high correlations were discovered. Exhaustive prescriptive lists of effective teaching behaviors required for competency were developed. However, the predominant emphasis had been on the teacher's side of the instructional process based on McDonald's (1976) assertion that "teachers do make a difference." The mediating processes and the "presumed links" (Magoon, 1977:653) accounting for effective teaching remained unexplained.

Ecological variables such as class size, arrangement of furniture (Adams and Biddle, 1970) exert influences on ongoing instruction but do not, in themselves, account for success or failure on achievement tests. Time of day, week, and year influence both the quality of instruction provided by teachers and the receptivity of students. Classroom "climate" had been investigated as early as 1949 by Withall. Dunkin and Biddle (1974), Marliave (1976), and Good and Grouws (1977) agreed that a "warm" climate with a relaxed atmosphere was one sign of an effective teacher. All of the foregoing environmental factors and many more exert influences that affect ongoing instruction in classrooms.

Several other research emphases have yielded promising results and are briefly outlined. Studies of teacher thought processes have provided valuable information about how teachers plan (Zahoric, 1975, and Oberg, 1975), how they make decisions (Shavelson, 1973-1978, and Wodlinger, in progress), how they think and react interactively while

teaching (Marland, 1977; Conners, 1978; Tuckwell, 1979), and how they think and feel about their students (Brophy, Evertson, Anderson, Baum, and Crawford; 1976 and King, 1979) and about the constraints such as time, curriculum concerns, school organizational features which exert specific effects on classroom instruction.

Interest in achievement motivation (Weiner, 1972-1978 and Bar-Tal, 1978), personality attributes of students (Brophy and Good, 1974 and Brophy et al, 1976), pupils' use of academic engaged time (Marliave, Fisher, and Dishaw, 1977 and Smyth, 1979), pupils' classroom behavior styles ( Spaulding, 1973 and Mahen, 1977), and pupils' interactive thoughts during instruction (King, 1979), for example, have begun to shift the focus from the teacher onto the learner and have resulted in promising findings which highlight the pupil's active role in attaining his own success.

Teachers and students are involved in a unique sort of social interaction. Ostensibly the teacher is the controlling force but students do exert an influence on interaction patterns by virtue of their personal characteristics and behavior (Brophy et al, 1976). The recognition that it is neither teacher variables nor student variables that completely determine student achievement but rather the interaction between the two has prompted investigation of this mutual interdependence in classroom settings (Winne and Marx, 1977:669; Brophy and Good, 1974; and Fiedler, 1975:736).

Educational researchers have begun to undertake intensified study of these variables in the context of ongoing classroom life where they can be viewed in routine interaction with equally important curriculum concerns and teacher behavior variables.

A growing realization that naturalistic classroom observation was the most appropriate direction for the study of teaching was stated by Brophy and Good (1974, Preface ix):

Data have convinced us that the complexities of classroom life can be profitably investigated only in real-world settings. The simplicity and control achievable in simulation and laboratory settings come at too high a price: lack of generalizability to the classroom.

However, even with ample instrumentation and much information about classroom life, definitive explanations and conceptualizations of the teaching-learning process remain elusive and unformulated. Winne and Marx (1977:671) felt that a different approach is needed. Such a reconceptualization of educational research will necessitate the development of different research techniques, revamping of previous ones, or a recombination of ones used successfully in the past. New approaches and methodologies that are being developed make the researcher's job more difficult, more complex, and more interpretive. A composite and eclectic set of skills is needed by today's classroom researcher.

The varying approaches to educational research need not be regarded as mutually exclusive as has been the tendency in the past. In fact, it is by adopting and using different methodologies in inventive combinations that complementarity and triangulation will result and may help to bring about a better understanding of life in classrooms.

MacKay and Osoba (1978:2) reviewed the three major thrusts in educational research currently being pursued; the experimental, the correlational, and the ethnographic. They suggested that researchers are reaching consensus that educational research is still in an "evolutionary"

state and that a wide variety of data collection devices and methods is called for in order to develop the broader base needed for conceptualization and understanding of the teaching-learning process.

Wilson (1977:255) noted that "multi-modal" data collection techniques are commonly used in ethnography and he was convinced that "educational research will be considerably enriched as qualitative and quantitative researchers learn to integrate their approaches."

Perhaps the ideal type of classroom-based research study would involve the collaborative efforts and talents of several researchers based in one classroom over a long period of time at great expense of time, effort, and money and using a variety of observation techniques and recording devices. However, such an intrusive, but comprehensive approach would almost surely destroy the forces operating in a naturalistic setting.

The foregoing concerns might be summarized in the following way: Many valuable contributions have been made in research in teaching to date using methodologies which can only achieve a limited amount on their own. Researchers are only just developing an awareness of the overwhelming complexity of the elements at work in a classroom, of the various facets of teacher behavior and student behavior, and of the interaction between them. These forces are interrelated and extremely complex. It no longer seems fruitful or appropriate to conduct large scale studies when we lack a satisfactory theoretical base as an underpinning for the research. It is time to take stock and assess the positive contributions to date and to concentrate on the smaller units of analysis such as one class or one student. It is, in short,

a time to revert to "fieldwork as a basis for theory building in research on teaching" (Yinger, 1978).

Valuable contributions in other fields of study have been made because of the singular and intensive study of one cell, bird, animal, or human which in turn led to hypothesis generating and experimentation involving larger numbers of subjects. Such an approach has been avoided in the past in educational research perhaps because of preoccupation with and faith in alternate forms of research, perhaps because it was not considered "respectable" and did not yield generalizable findings or more likely because educational researchers then, as now, were unsure of appropriate methodology, data gathering, and data analysis techniques.

Yinger (1978:8) proposed two reasons for our hesitancy to build theory in educational research. A "fear of the unknown" accounts for part of the reticence, for theory building is perceived to be a threatening and uncertain task and the belief that only the "gifted few" should attempt to generate theory prevents most of us from taking any responsibility of this task. In addition Yinger felt that the role of theory in science is unclear to educational researchers for it not, as yet, seen as an ongoing process while active research is being conducted but is still viewed as a "product" that is developed after years of research and deliberation.

Good theory in education, as in art, helps us see more. It helps us think about more of the qualities that constitute a set of phenomena; theory does not replace intelligence and perception and action, it provides some of the windows through which intelligence can look out into the world.

(Eisner, 1976:7)

Certainly the need to establish a firm base on which to build theory seems to be a pervasive priority with researchers in education.

The preoccupation with data gathering has been recently reinforced in research on teaching. As the anthropologists, sociologists, and ecological psychologists have gradually convinced us of the complexity of the teaching endeavor, we have realized the necessity for a lot of work in describing and analyzing the classroom and its activities. Any discomfort that we may have in venturing out of the lab and into the field has been somewhat moderated by a feeling that all we need to do for a while is to merely describe what we see. (Yinger, 1978:9)

While this may be so, Yinger cautioned that after years of compiling "rich" descriptions we might become "thick" on description but "thin" on analysis and theorizing.

Yinger (1978:13) continued by emphasizing that the need is now recognized that in order

for conceptual categories and hypotheses that have meaning for real situations to emerge, they must be based on qualitative descriptions of behavior in natural situations ... our central concern should be that our theorizing is grounded in situations that are representative of real settings in which teaching and learning occur. Better yet, theorizing should be grounded in actual teaching/learning situations.

These descriptions do not preclude the use of other types of data collection which can be used to great advantage in conjunction with qualitative description. The case study would seem to be an appropriate approach for conducting such a study.

#### THE CASE STUDY

MacDonald and Walker (1975:3) described the case study method as a branch of exploratory, ethnographic research. Methods are rarely specifically stated in advance but the goals should be to increase the understanding of the variables, parameters, and dynamics of the case under study.



Denton (1979:11) pointed out there is an important distinction between providing an "explanation" which attempts to answer the "why" questions in research, and facilitating the reader's "understanding" by presenting a context for interpreting the phenomenon under study.

Stake (1978:7) claimed that the case study is an appropriate method for educational research for in education few laws have been validated. Denton (1979:11) appeared to agree when he stated that in educational research there are few, if any, general laws which are genuinely "causal". Rather, an 'if-then' conditional form of reasoning seemed to be involved.

Stake (1976:129) cautioned against adopting a preordinate stance which depends on the capability of prestatng the purposes of education concisely. By adopting such an approach the researcher cannot remain "sensitive" to ongoing changes and uniqueness; hence his bid for "responsive evaluation". Wilson (1977:255) concurred that the adoption of a particular framework is arbitrary for interpreting and coding behavior. Wilson went on to say that the case study researcher is constantly making strategic decisions as the study progresses and the theories that emerge must be used to direct subsequent data collection.

#### THE CASE STUDY METHOD IN CONJUNCTION WITH OTHER METHODOLOGIES

Wilson explained that the ethnographic and phenomenological methodologies often used in case studies come from the anthropological tradition. The (sometimes participant) observer collects information about "human behavior impossible to obtain by more quantitative

methods (p.254)." The guiding principle of ethnographic and phenomenological research is the assumption that individuals' "meaning structures" determine much of their behavior. van Manen (1978:3) described phenomenology as "having as its primary objective the direct investigation and description of phenomena as consciously (and pretheoretically) experienced." The investigator engaged in phenomenological research is simply obliged to describe in "life world" language without making causal interpretations.

Denton (1979:6) claimed that phenomenological research is atheoretical in the beginning. He described the key concept of "bracketing" as the basic research tool:

With bracketing the researcher is able to see and describe a phenomenon from a variety of perspectives and to interpret it against many backgrounds (or horizons) and to locate it in some particular conceptual field. The procedure itself is simple enough; one puts aside accustomed perceptual sets in order for the phenomenon to appear as itself...

Bracketing is also the method for multiplying perspectives on the phenomenon in question, observing from as many angles as possible, placing against a variety of backgrounds, locating in different histories and futures, listening and participating with the people involved.

Wilson (p.251) recommended such "bracketing" until one's experience with the research begins to suggest the relevance of one's own thoughts. Denton (p.9) maintained it was not a question of objectivity versus subjectivity for the objectivity claimed is that which results from multiple perspectives.

Some of the events under study will be "patterned, recurring, and frequent", Denton claimed. As well, quantification is not prohibited

for many "event structures" can be enumerated, classified, and measured. For example, the descriptive account itself can be subjected to quantitative analysis after a content analysis has been completed. While recognizing the limitations of this style of research in education Denton felt it was a potentially valuable direction for educational research.

Phenomenological research will not provide propositions supposedly having implications for the teacher and the administrator. It will, however, provide a many-layered narrative against which the teacher and the administrator can draw parallels with their worlds of practice.  
(Denton, 1979:14)

The onus of drawing such parallels is placed squarely on the consumer of research. Kennedy (1978:16) agreed that this responsibility is indeed the reader's. A satisfactory set of rules for drawing inferences from single-case study findings does not exist at present. She argued that although they have been precisely stated and widely accepted for decades, statistically-based inferences are themselves still "tentative", never "conclusive" for "the strength of evidence is a matter of judgment."

Kennedy pointed out that the "advantage of the single-case methodology is that it forces the evaluator to look at the functional relationships between the treatment and the subject(s) (p.14)" and she emphasized that the "relationship" is what is generalized.

This generalization is not apt to be from a case to a population but rather from a case to another case. This procedure, she reminded the reader, is well respected in both the medical and legal professions.

Much medical "knowledge develops from the accumulation of findings about treatment effects in individuals (p.21)". Similarly, in law, the court decides whether a particular decision generalizes to the case being considered. "Thus it is the receiver of the information who determines the applicability of a finding to a new situation (p.17)". The duty of the researcher/evaluator is simply to produce and share the information.

Eisner appears to agree in part but assigned more responsibility for the interpretation and evaluation of findings to the researcher. Eisner (1976, 1977) maintained that the educational researcher must develop and use the skills of both the "educational connoisseur" and the "educational critic". The primary aim of educational connoisseurship is to develop the art of "appreciation" which Eisner (1977:8) described as the "awareness and understanding" of both the "character and quality" of what one has encountered. It is the development of educational connoisseurship, as the art of perception, that would make the appreciation of complexity, such as that found in today's classroom, possible. The development of such a heightened awareness provides the basis for judgment.

Eisner contended that one could be an accomplished educational connoisseur without going on to become a competent educational critic but the reverse could not be true for educational connoisseurship provides educational criticism with its subject matter. In the sense Eisner uses it, "educational criticism" is not concerned with negative evaluation but rather has as its primary aim the re-education of perception and is the "art of disclosure". The duty of the educational

critic is to reveal the character and quality of what one has encountered. An educational critic may be merely descriptive "in the effort to characterize or render the pervasive and sheerly descriptive aspects of the phenomena (p. 10)". By attempting to be interpretative the educational critic tries to reveal the meaning and significance that various forms of action have for those in a social setting. Eisner maintained that in order to interpret effectively the educational critic must "empathically participate in the life of another (p.14)". This endeavor required the "judicious and informed use of a variety of social sciences and the practical wisdom born of experience in schools (1976:14)". The educational critic who became evaluative would be making value judgments about teaching with respect to its educational significance.

It is this aspect of educational criticism that sharply differentiates the work of the educational critic from the work of an ethnographer, psychologist, or sociologist....Educational critics ultimately appraise what they encounter with a set of educational criteria; they judge the educational value of what they see. (p. 14)

It would be required that the researcher presuming to take on this role would "possess far more than the writing skills possessed by a good novelist or journalist. It requires a broad grasp of educational theory, educational history, and it would be a distinct advantage for critics to have had experience as classroom teachers (1977:8)." Otherwise, as Eisner pointed out, without a sense of the practical realities of classroom life, subtleties observed in the classroom escape notice, the things that were overlooked or neglected by the teacher are not noted, and the values embraced or rejected by the

teacher are not comprehended.

Eisner (1977:8) explained the task of the educational critic was to provide a "vivid rendering" so that others might learn to see what transpires in a busy classroom.

Kennedy (1978:4) was concerned about the talent needed by the writer of a descriptive case study.

Arguments have been made for the validity of qualitative data, subjective impressions, as descriptions of naturally occurring events. While these arguments may be valid, they suggest that the evaluator needs the talent of Tolstoi to be able to describe these events in ways that allow the reader to draw the appropriate inference.

Eisner agreed that what was needed for such a "rendering" was a "form of linguistic artistry replete with metaphor, contrast, redundancy and emphasis that captures some aspect of the quality and character of educational life (p.8)". He claimed that "good critics use language in a way that requires a certain poetic and fluid range of words and phrases."

With regard to writing style in educational research Eisner (1976:5) had previously noted that "somehow if 'the author' or 'we' conclude something it is more objective than if 'I' do." In the attempt to increase objectivity the shift in language that results acts to "de-emotionalize expression" and he felt "the opportunity to understand empathically and to communicate the quality of human experience diminishes." He claimed we must go beyond the description of behavior in order to know what the behavior means.

Eisner (1977:5) cautioned that "sheer description unguided by value considerations is rudderless." He seemed to be implying that it

is not enough to describe and allow the reader to draw the parallels but as a qualified educator, the responsibility for the interpretative and evaluative roles in educational criticism should be assumed.

Thus the ultimate consequence of educational criticism is evaluative in the sense that something must be made of what has been described and interpreted. The task of the critic is not simply one of neutral observer (an impossible position in any case) nor is it one of disinterested interpretation. The critic uses what he or she sees and interprets in order to arrive at some conclusion about the character of educational practice and to its improvement.

The rules for validity of educational criticism are complex but Eisner suggested that several procedures would help to dispel doubt about the procedures used. By attempting to effect "structural corroboration" the researcher demonstrates how a variety of facts or conditions within the phenomena support the conclusions drawn. "It is a process of demonstrating how the story hangs together, that the pieces fit (1976:16)". It sounds very much like effecting the "triangulation" of data as originally described by Webb(1966) and more recently elaborated by Jick (1979).

A second method of "determining the reliability of the critic's language is by judging the referential adequacy of what he has to say (1977:9)" that is by seeing if its referents can be found in the work or the event itself. This is more possible when judging the referential adequacy of a critic of art who evaluates a more stable object that can likewise be viewed by the reader. But Eisner pointed out that it is possible to do the same with more fluid forms of art such as symphony concerts. "Classroom activities flow into one another" and seldom

present a complete whole and what is more they change over time. Eisner recommended (p. 10) that the classroom be "visited with sufficient persistency to enable the critic to locate its pervasive qualities". It is these qualities that become the objects of educational criticism. In addition, Eisner stated that by capturing segments of ongoing classroom life on videotape the referential adequacy of criticism created might be determined.

Eisner has faith that effective connoisseurship and criticism will result in a

...content within a particular classroom and a refined sensitivity concerning classrooms that is useful for studying other educational situations....and may provide cues useful for locating phenomena that might subsequently be pursued through conventional educational research....Creative scientific work in any field depends on new realizations, new models, or new methods to guide inquiry. (p.11)

#### Summary and Implications for the Present Study

This section has recognized that the case study method has its origins in anthropological, ethnographic, and phenomenological traditions. It is suitable for use in an exploratory, hypothesis-generating study as well as for hypothesis testing. The ultimate purpose of conducting a case study may be to produce a description, an explanation, an interpretation, or an evaluation. By selective use of methodologies, it becomes a vehicle which is flexible, adaptable, and perhaps best suited to classroom-based research at the theory building stage. Since its methods may be unconventional and inventive, it allows the researcher freedom to approach the problem from different perspectives using eclectic data collection techniques.



The present research study addressed rather open ended questions. A desirable way to answer these was to determine "what is" and then to describe what seemed to be. As Yinger stated, one hesitates to do much more than describe and therefore leaves the rest to the gifted few. As Eisner portrays them, the "gifted few" should be sufficiently qualified to take an evaluative role in educational criticism.

Where possible, where enough "structural corroboration" was available, the present researcher ventured past description and possibly may have overstepped safer bounds. After three months of data collection and a year of data analysis and rumination, the "enduring and pervasive qualities" of this classroom in the present study as "understood" by the researcher are presented as the findings in this dissertation.

While the text of the description itself is largely teacher-provided data about students and not the researcher's description of ongoing instruction, the choice of data to be presented, the sequence of presentation and the method of presentation, however, reflect the perspectives of the researcher. Thus the format differs from that proposed by Eisner in many respects but the ideas of connoisseurship and criticism have been kept in mind constantly and used when deemed appropriate.

#### TEACHER THOUGHT PROCESSES

Another area of research which played a role in the present study is that concerning teacher thought processes. The N.I.E. Panel 6 Report (1975:1) confirmed the need to know more about the

"mental life" of teachers. "Research typically slights the problem of how teachers think about their pupils and instructional problems. It concentrates instead on how teachers act or perform in the classroom" (Shulman and Elstein, 1975:3). It was speculated that part of the delay in investigating cognitive processes of teaching stemmed from the lack of confidence in introspective techniques.

Magoon (1977:660) confirmed there was traditional objection to self reports. Radford (1974:250) had conceded that "introspection gives us information about experience. It yields some data otherwise inaccessible." Radford claimed that if verbal reports, or introspection-as-data, were subjected to the usual checks used for all experimental data and yielded satisfactory levels of significance they can be used with confidence. As long as one did not "take the response at face value but established empirically its relationship to some other variables" (p.246) it was reasonably credible. Harré and Secord (1972:84) supported the legitimacy of "self-reporting" techniques. Their anthropomorphic model of man presumes he is a self-monitoring individual with the ability to verbalize conscious thoughts which guide his actions.

It is possible to examine the covert behavior operant in planning instruction and in active teaching situations by asking the teacher to articulate the thinking behind the actions. Some initial training is usually necessary for the teacher subject because thinking aloud while performing a cognitive task, or re-experiencing it, is not a frequently practiced skill but Shulman and Elstein claimed it

is possible to verbalize these inner thoughts with the help of probing encouragement, Wodlinger (in progress) took particular care in the initial training of his teacher subject to help her identify and articulate the decision processes she was using during instruction. The teacher reported making several times as many decisions during a lesson than teacher subjects in other research studies have reported.

Shavelson (1973:146) described teacher decision making as the most important teaching skill and the fact that teachers do have information processing skills and decision making skills provides an important rationale for having teachers in the classroom (Berliner, 1976) as opposed to teaching machines.

Research has been conducted on both preactive decision making and planning (Oberg, 1975 and 1978) and interactive decision making (Clark and Peterson, 1976 and Wodlinger, in progress). Oberg (1975) concluded that in addition to many other factors that teachers did give consideration to student characteristics and ability when making preactive decisions about instruction. Shavelson and Atwood (1977:55) reported that on the basis of their "estimates of student states of mind", teachers decide which instructional approaches are suitable for certain students in preactive planning.

Marx and Peterson (1975:17) concluded that investigating interactive decisions was not as fruitful a pursuit as investigating preactive decisions. Marland (1977) found there were fewer than 10 interactive decisions reported per lesson. Wodlinger's contradictory findings may be due to the training in articulation of the processes involved which his teacher received.

Clark and Yinger (1977:292) concluded that interactive decision making rarely resulted in an immediate change in the course of instruction but acted as more of a "process of fine tuning and adapting to the aspects of a situation that were unpredictable in principle" such as specific student responses. Shavelson (1976) found that most reported interactive decisions amounted to modifications of those made in planning. But such decisions are made on the basis of teacher-held expectations for and knowledge of the particular student (MacKay and Marland, 1978; Shavelson and Atwood, 1977; and Russo, 1978).

In contrast to preactive decision making where estimates of student states of mind appear to be more salient, overt student-centered cues like bewilderment are apt to precipitate interactive decisions. Clark and Peterson (1976:6) found that during interactive decision making, student participation and involvement were the main cues used by teachers, particularly the "mood" of the group. However, in his study of 12 teachers, MacKay (1978:19) found that the absolute references to student attention during stimulated recall of the lesson in progress were few in number.

In comparing preactive and interactive decision makers, Zahoric (1970) found that teachers who planned extensively were less flexible during actual instruction. Marx and Peterson (1975:16) found that highly preactive teachers had students with more negative attitudes toward school than teachers who made fewer preactive decisions and who, therefore, made more interactive decisions which tended to involve students (by accepting their initiated questions and comments as the lesson progressed). They also reported that teachers who "are concerned

about students in their planning tend to be concerned about students in their actual teaching (p.13)".

"Interactive decision making which appears to encompass the best skills of the teacher requires that the teacher must make contingency decisions that suit the moment in time by integrating information from all sources (for example: pre-planning, information about students, past teaching experience) yet remaining "aware" of situational information as well (Gage, 1973 and Shavelson, 1978).

The rapidity and pace of classroom life appear to preclude the rational mode of decision making used in preactive planning. Researchers have suggested that teachers' interactive decision making might be more "intuitive" than rational (Jackson, 1968, and Yinger, 1978). Wodlinger's teacher was able to relate antecedents for, rationale behind, and whether alternatives had been considered for her interactive decisions; a finding which implies that interactive decision making may be more rational and logical than previously concluded.

In searching for a model for research on teacher thinking, Clark (1978) considered the teacher as a decision-maker (Shavelson, 1973; and Clark and Yinger, 1977) and the teacher as an information processor (Marland, 1977 and Conners, 1978). Clark judged the decision making type of study as a highly controlled inquiry focusing on decision making behavior, whereas the broader information processing model is a more inclusive approach through which the researcher can explore the ways that teachers define situations and cope with the task environment which is overwhelmingly rich in information to be processed.

Ryans (1963:274) described the teacher as an "information

processor" and Shulman and Elstein (1975) saw the teacher more precisely as an active "clinical" information processor who was involved in planning, anticipating, judging, diagnosing, prescribing, and problem solving.

Adams and Biddle (1970:85) portrayed the teacher as continually accommodating surrounding stimuli and manipulating the environment for others.

Consequently she has to act as a kind of feedback mechanism for the classroom. She receives stimuli from her pupils and other elements in the environment, she has to process this information in relation to her educational purposes, then she has to emit behavior, which, in her opinion, will bring about the desired pupil responses.

Marland's (1977) study on information processing of teachers examined teachers' cognitive functioning during instruction and the ways teachers coped with interactive demands. In addition to other solicited information, the teachers were requested to disclose the kinds of information about students they had brought to the lesson situation and which impinged upon or influenced their interactive thoughts and decisions.

Shulman and Elstein (1975:35) claimed that introspective techniques could be useful in the "study of sources, character, modifiability, and consequences of teacher expectations". Such procedures may help to identify how teachers interpret and evaluate "meaning and sufficiency of new information, which information sources are used by teachers to make pupil judgments, and which are ignored."

Clark (1977) investigated how teachers gather, organize and evaluate information and felt that continued study would lead to an

understanding of the uniquely human processes which determine and guide teacher behavior."

Clark and Yinger (1977:301) talked of the

exciting possibility that research on teacher thinking may unite the concerns of researchers in instruction and teacher behavior with those of researchers on curriculum and materials. All of these concerns come together in the minds of teachers as they make the plans, judgments, and decisions that guide their behavior. Indeed, the thinking of teachers may be the strategic research site that yields the first practical theory of instruction.

### Stimulated Recall

Stimulated recall, used as a research device for investigating covert thought processes has yielded promising results. Bloom (1953 and 1954) felt that recall conducted within a 48 hour period produced accurate accounts of simultaneous covert thought processes that accompanied observed actions. He felt the teacher could relive an original situation with vividness and accuracy if presented with a large number of cues. He used both audio and video cues in his research. Gaier (1954) cautioned that the subject would tend to censor what he would reveal. Shulman and Elstein (1971) used multi-level protocols (video and think aloud protocols in conjunction with stimulated recall protocols) to ascertain the consistency and accuracy provided by this introspective technique. This tri-level data collection permitted cross referencing on the recall items provided by the physicians in the study. Such "triangulation" or corroboration of stimulated recall data was urged by Radford (1974:246).

Kagan et al. (1963:239) emphasized the importance of the role of the interviewer during stimulated recall. Unless a rapport, characterized

by "communicated authenticity, positive regard for the other person, and empathy" (Fuller and Manning, 1973:499) were developed, the teacher subject would not be willing to verbalize covert thoughts. Other procedures such as assuring anonymity, allowing the subject self-viewing opportunities before actual recall, and informing the subject of the purpose of the recall help to ensure that the subject will cooperate fully (Marland, 1977).

Tuckwell (1980:282) suggested that filming from the same vantage point as the teacher's, instead of from the back of the room which is less obtrusive, would result in cues more like the original ones influencing the teacher during the lesson and this might facilitate more accurate recall.

Stimulated recall has been successfully used in researching covert behavior of teachers by Bloom (1953), Shavelson (1973), Clark and Peterson (1976), Shavelson and Atwood (1977), Marland (1977), Connors (1978), Cooper (1979), King (1979), and Tuckwell (1980) to date.

#### Summary and Implications for the Present Study

Increasing interest in the covert mental activity of both teachers and students has resulted in growing support for introspective studies in education. One research technique which has been found particularly useful in this pursuit is video playback stimulated recall during which the subject reveals his thought processes with respect to issue-specific stimuli. A comprehensive review of both teacher thought processes and stimulated recall methodology can be found in Tuckwell's (1980) dissertation.



The present study utilized the teacher-as-information-processor approach but purposely narrowed the focus of teacher thinking to information about students. Data concerning the teacher's expectations for student achievement, the teacher's affective reaction to students, the teacher's perception of various student personality attributes, and the teacher's perception of his students' classroom behavior and work habits were gathered during general interviews and by conducting eight stimulated recall interviews focusing on the teacher's thoughts about students during instruction. These expressed teacher thoughts were clarified and corroborated by other data sources in order to substantiate the authenticity of the teacher's self reports.

#### TEACHER EXPECTANCY EFFECT

Teacher-held expectancy is an area that has been shown to be investigated profitably through the use of introspective techniques.

#### Attribution Theory

A knowledge of attribution theory helps to explain how the expectancy effect functions. Attribution theory, from the cognitive phase of social psychology, provides a general framework for interpreting actions, for identifying causes, and for predicting future actions.

Bar-Tal (1978:259) defined an attribution as the "inference a person makes about the causes of behavior, either his own or another person's."

Jones and Nisbett (1972:80) outlined the discrepancies in interpretation that occur between the "actor's" (eg., a student) perception of an event and the "observer's" (eg., a teacher) perception of the same event. Teachers act on the basis of these perceptions,

however, and use them in forming expectations about students. The classroom observer, in turn, may interpret the same event involving both the student and the teacher in yet another way.

Weiner (1972, 1974, 1976:184) in his work on causal attribution made a connecting link between attribution processes and expectancy theory. If the responsibility for an action observed is felt to be due to "stable" causes ( eg., the student's lack of intelligence, or the difficulty of the task), a teacher would be apt to help the student overcome the difficulty encountered. In this example, one of the stable causes (ability) is said to be an "internal" cause while the other (task difficulty) is "external" to the student. In a second example another student might be perceived to fail on a test due to bad luck or a lack of effort on his part (both of which are seen to be "unstable" or changeable causes). The bad luck is external and can not be controlled but the effort exerted is internal and seen to be something a student can control. The teacher's attitude toward helping the student in the second example would differ from the first wherein the student was seen more as a victim of circumstances beyond his control. Weiner conceptualized that most people would attribute their success or failure on a task to one or more of the four causes mentioned above.

		Locus of Control	
		Internal	External
Stability	stable	ability	task difficulty
	unstable	effort	luck

Weiner (1972:213) claimed that it had been

convincingly demonstrated that causal attribution influenced the likelihood of undertaking achievement activities, the

intensity of work at these activities, and the degree of persistence in the face of failure.

Teachers form their own attributions to account for the successes and failures experienced by their students. These attributions contribute to their performance expectations for students and may account for differential teacher behavior toward students. Hence, a student viewed as "lazy, does not exert effort" may not receive the teacher-provided challenges that the "tries hard, persistent" student does in the classroom situation. The unchallenged student will not produce as much. If the teacher's attribution of "lazy" happened to be inaccurate, the self-fulfilling prophecy over time could eventually result in the student exhibiting the very characteristic which would confirm the teacher's attribution.

Varying factors such as the age and sex of the student, and personal achievement needs, would tend to govern what happens on an individual basis but it seems obvious that self-attribution and the attribution made by others would help to shape and determine performance in the classroom.

Smith (1977:7) claimed that the role of the teacher was crucial for manipulating the felt achievement needs of the pupil. The "expectancy" of success and the "value" of the outcome to the student (Weiner, 1976:184) have to be adjusted to suit and challenge each individual student. Confidence may result in greater effort and persistence and the student may begin to make more favorable self-attributions about his performance. Attribution retraining procedures have been successfully demonstrated by Entwisle and Webster (1970),

de Charms (1972), Kulka (1972) and Andrews and Debus (1978). Kulka (p.168) stated that effort is the most salient determinant of outcome. Attributions to effort, then, are to be encouraged in the learning situation. King (1979) substantiated the importance of perceived effort on the part of students in the formation and maintenance of teacher expectations.

Summary. Attribution for causes of performance underlies both teacher expectancy and student self-expectancy for future performance. The student's causal perception of his own successes and failures may determine his motivation and persistence at academic tasks. The teacher's causal perception of the student's behavior influences her performance expectancy for that student and her behavior towards him during instruction.

#### Teacher Expectancy

The belief that teacher expectations could function to the detriment or advantage of student performance is becoming generally accepted. Winne and Marx (1977:672) concluded that relationships exist between expectations and student learning based on evidence found by many studies to date. Whether these relationships are correlational or causal in nature is the subject of much interest and research currently.

Researchers believing there was a causal relationship between teacher expectations and achievement (West and Anderson, 1976:615; Lockheed, 1976:16; and Dusek and O'Connell, 1973:375) raised the question of the "preponderance of causation" and suggested the view that expectations are formed on the basis of the child's past academic performance in opposition to the view that teacher-held expectations

influence future achievement. West and Anderson (1976:624) stated that future student achievement is best predicted by present student achievement. Lockheed (1976:16) suggested that student achievement is the strongest single predictor of teacher expectation. By contrast, Crano and Mellon (1978:39) concluded that teacher expectations affect students' achievement and further concluded that the teacher's expectations for the child's social development instead of achievement development exert the stronger influence on achievement.

Brophy and Good (1974:34) after many studies involving teacher expectations felt that teacher expectations usually result from observed student performance rather than cause it. However, they pointed out that teacher-held expectancies are capable of affecting student performance if they are inappropriate and are kept inflexibly rigid.

#### Formation and Maintenance of Expectancy for Students

The information sources that give rise to the formation of expectations are many and varied. Sheer personal reactions and feelings toward pupils (Willis and Brophy, 1974:527) can result in expectation for the pupil. Usually the information sources used in forming expectations are the attributions made about student performance, work habits, and personality (Shavelson, Atwood, and Borke, 1977:51). These sources of information used in the formation of expectations are often referred to as "cues". The following studies have dealt with the effects of specific, naturally occurring cues and their influence upon the formation of teacher expectations:

divorce (Santrock and Tracy, 1978)

teacher experience with older sibling (Seaver, 1973)

unusual name (Harari; 1973)

physical physique (Stafferi, 1967 and Lerner, 1969)  
 handwriting (Briggs, 1970)  
 sex (Palardy 1968, and Adams and Lavoie, 1974)  
 facial attractiveness (Clifford and Walster, 1973)  
 conduct (Adams and Lavoie, 1974)  
 labeling (Yoshida and Meyers, 1975)

Lockheed (1976:16ff) and Braun (1976) presented a comprehensive list of such cues and the names and dates of research studies that confirm or question the relative strengths of these cues on the formation of teacher expectancies for students. However, the most salient and relevant cues would appear to be the child's actual classroom behavior and academic performance. The use of cues may depend on the time of the school year, other available information, or certain teacher characteristics.

Each teacher is idiosyncratic in her susceptibility to the expectancy effect due to factors such as years of classroom experience, her belief system, and her awareness of the effect (West and Anderson 1976:621; and Cornbleth, Davis and Button, 1974:58). Dusek (1975:666) claimed that in comparison with student teachers who had been used in expectancy research studies, that "real", or more experienced teachers treated students equally. Muttart (1977) who investigated presage and process teacher characteristics in relation to differential treatment of students, concluded that the phenomenon was not universal with teachers.

Good and Brophy (1975:115) distinguished among three general types of teachers who varied in their susceptibility to the expectancy effect. The "proactive" teacher uses his expectations for students in planning suitable activities designed to individualize and optimize

learning. The "reactive" teacher has generally accurate and flexible expectations but he allows the students to control or condition the patterns of student-teacher interaction. The third type of teacher, the "overreactor", provides most evidence of expectancy effects. By adhering to simplistic and rigid stereotypes he allows himself to be conditioned by student differences but in addition, he exacerbates these differences by treating students as even more different than they really are, engaging in kinds of behavior that produce self-fulfilling prophecy effects. Brophy and Good (1974:viii) stated, "Few teachers are able to consciously monitor each student on a continuing basis and treat him in a deliberate, proactive manner... ..Most teachers are primarily reactive in responses to students... showing evidence that students have shaped their behavior."

Clark and Yinger (1977:295) stated that the "open minded" teacher was more flexible and made adjustments in her expectations. Haigh (1974:110) and Smith and Luginbuhl (1976:267) confirmed that the degree of "awareness" of the expectancy effect determined its exhibited strength in a teacher's behavior: Nash (1976:40) felt that once the teacher became cognizant of how her attitudes influenced her actions, she was more likely to attempt to give all pupils equal opportunities within the class. Nash believed that

the teacher would take an active role in counteracting her natural biases by deliberately acting in positive ways towards the pupils- to make an anti-self-fulfilling prophecy of her expectancy- and make of it a virtue.

(p.40).

It is difficult to estimate the extent to which the expectancy effect is in operation in a classroom for it is contingent on many factors.

Rosenthal (1973:59) found that the effect occurred between 34 to 37 percent of the time in his study. Good (1970:190) noted that teachers "expect one-third of the students to learn much, and one-third to just get by." This expectation tended to be supported by the schools' grading policies and practices. If the above information is any indication of the prevalence of expectancy effects in classrooms it might be safe to assume that depending on certain conditions, the lowest third in the class could be subject to negative expectancy effects.

Shavelson, Atwood, and Borko (1977:55) stated that "teachers constantly receive additional information about students. Many additional cues come from the teacher's observation of day to day interaction in the classroom." These cues and resulting attributions concerning probable causes for observed student behavior are part of the teacher's continual information-processing activities. The possibility therefore exists that negative expectancies may be revised on the basis of positive information received. However, the "anchoring" heuristic (Shavelson et al, 1977:55), or the strength of the "first impression", is difficult to overcome and may be the mechanism underlying the expectancy phenomenon for Shavelson et al felt that "adjustments" following the "anchoring" were typically insufficient for disconfirmatory evidence tends to be rejected. Fortunately, most teacher expectancies are reasonably accurate in the first place.

Clark and Yinger (1977:300) stated that

The evidence is mixed on the extent to which teachers' judgments are flexible and responsive to new information. It is clear that teachers vary in the accuracy of their predictions of student achievement and the weights that they assign to factors that influence their judgment.



### Summary and Implications for the Present Study

The formation of performance expectancies for students varies in accuracy and strength with individual teachers. The relative importance they assign to these expectations is a function of their belief system and their ability to process and evaluate new information which may serve to maintain or revise their impressions of a student's capabilities. In particular an awareness of the phenomenon of the expectancy effect usually serves to reduce its strength and influence.

A comprehensive review of both attribution theory and expectation theory can be found in King's (1979) dissertation.

By March, when the present study began, performance expectations held for the students would have been formed, adjusted, and would then have become relatively stable after seven months of ongoing teacher-student interaction. If process expectancy effects existed, it was anticipated that they would be detectable because patterns of interactions based on mutual expectations would have become habitual. By delving into teacher thoughts and feelings about the students it was considered possible that the salient cues which had been used to form these teacher impressions of and expectations for individual students and for groups of students might be identified.

#### TEACHER ATTITUDES TO STUDENTS

By analyzing Grade 3 teachers' descriptions of their students, Silberman (1969) identified four basic attitudes (attachment, concern, indifference, and rejection) that teachers seemed to express toward students in their classes. Teachers were asked to assign the one most representative student in the class to each of the four attitude groups.

Silberman examined the teacher's interaction with the class and identified which specific teaching behaviors appeared to communicate these feelings to students. Silberman recorded and analyzed the dyadic verbal interaction which was exchanged between the teacher and the student subjects in the attitude categories. Differential verbal treatment of students was noted and teacher's affective reactions appeared to account for this occurrence. Due to the rapid pace of classroom life, and particularly during verbal exchanges, teachers are forced to react spontaneously.

They are required to make many required decisions quickly by acting on their feelings towards the students involved in certain situations than by weighing the pros and cons of alternative actions. (Silberman, 1969:406)

The most common characteristics of students belonging to the four attitude groups have been distilled from several research studies and are presented in brief summary form:

Attachment: high achievers who responded warmly to the teacher and who were generally conforming and compliant, happy, attractive, mature.

The verbal interaction which was characteristic of this group was positive in nature with a high percentage of praise which was in acknowledgement of their excellent achievement. They initiated a high percentage of contacts with the teacher. Teachers seemed to keep overall contact with this group minimal, partly to avoid showing the favoritism felt, and partly because these students did not seem to need help and could be counted on to ask for assistance when they needed it.

Concern: Low achievers who were dependent on the teacher and who exhibited acceptable behavior, restless, immature, in need of encouragement, notably lacking in self confidence. They made appropriate but extensive demands on the teacher.

Concern students received the highest amount of verbal contact from the teacher. Interactions were characterized by longer contacts, of both student-initiated and teacher-initiated types. They were praised for good behavior and criticized for poor behavior. It seemed as if teachers went out of their way to encourage and praise these students.

Indifference: had few identifying characteristics (blank expression was frequently mentioned), were middle achievers, exhibited some misbehavior and some negative attitudes toward school, not noticeable, unhappy, unattractive, avoided eye contact.

In contrast to Silberman's suspicion that indifference students were accidentally overlooked because they were not all that salient or noticeable, Good and Brophy (1974) suggested that teachers' indifference toward these students was a defence mechanism to protect teachers from the continued frustration and rejection experienced when working with indifference students. Their unresponsive and sullen behavior turned off teachers and conditioned them to minimize interaction with them. It was a matter of mutual avoidance.

The total number of interactions exchanged with this group was lower than for all other attitude groups. Infrequent student-initiated contacts indicated a student avoidance of the teacher. Reciprocally, a low percentage of teacher-initiated interactions occurred with this group.

Rejection: low achievers, frequently disruptive and defiant. Low ability was attributed to this group, sometimes inaccurately.

Interactions with this group were characterized by frequent disruptive behavior, a high percentage of student-initiated

contacts. A higher percentage of interaction with these students occurred in private settings. Toward rejection students teachers tended to exhibit hostility and held them "continually under surveillance" (Silberman, p.406)." Teachers appeared to experience conflict in dealing with these students and appeared to praise them whenever possible. It seemed to Silberman that they were held up to the class as both good and bad examples.

Willis and Brophy (1974:520ff) defined "attitudes" as affective reactions which were tied to the personal qualities of the student and his reactions to the teacher, not to student achievement.

Good and Brophy (1974:192) concluded from reviewing their own and others' findings that the two main variables influencing the assignment of students into attitude groups were (1) the student's general level of success in school and (2) the student's tendency to reward teachers in personal contacts with them. Willis and Brophy (1974:529) added (3) the degree to which these children conformed to classroom rules. A general summary of the four groups would conclude that;

Attachment students are high achievers, who reward teachers during personal contacts and who conform to classroom rules.

Concern students have trouble in school but are generally conforming and rewarding.

Indifference students do not provide personally rewarding experiences for teachers although their achievement is sometimes better than average and although they basically conform to classroom rules.

Rejection students satisfy none of these criteria to any great degree.

In the Student Attribute Study (Brophy et al, 1976) the researchers set out to provide more objective descriptions of students and so

conducted a large scale study in order to "broaden and deepen knowledge concerning the relationship between teachers' perceptions of students and the actual attributes of these students (p.444)." The study addressed the questions "Why do teachers develop certain attitudes toward some students but not to others; especially others who are similar?" and "What kinds of students provoke strong attitudinal responses in teachers?(p.118)"

Studies involving small numbers of teachers are very sensitive to the unique attitudes and preferences of the teachers involved so that their data may not be generalizable to other teachers. (p.126)

The researchers wished to clarify puzzling and contradictory findings that had emerged for the above reason from the attitude studies to date. Twenty-seven female elementary teachers and 362 of their students served as the subjects in the study. The findings were meant to generalize across many students in order to describe the "typical" attitude group student who would evoke a predictable and specific teacher attitudinal response. With this generalizable information, the dynamics of classroom life might be more satisfactorily explained.

Brophy et al. departed from the tradition of assigning students into the four attitude-to-student groups. Their information concerning attitudes was taken completely from two items on the 13 Attributes Scale (Brophy, Evertson, Anderson, Baum, and Crawford, 1976) namely:

Item #10: Attachment (Would like to have removed from class versus would like to keep for another year for the sheer joy of it).

and

Item #11: Concern (Doesn't require special attention versus concerns me a great deal. I would like to be able to devote much more attention).

The students received a high, medium, or low score.

However, by using this procedure the same student appeared somewhere on both attitude measures; eg., a "high attachment" but "low concern" student. For each of the 13 attributes Brophy et al. analyzed the data for the strongest, most consistently rated students. Even so, it is difficult to be surprised at their conclusions:

Some unexpected and interesting findings appeared for the students ranked consistently low on the concern scale. Just as was the case with students ranked high on attachment, the teachers were unlikely to respond negativistically to misbehavior by the low concern students. No doubt, part of this was because the students misbehaved less often and less intensively. Even so, this pattern was unusual. It suggests that relationships between the teachers and the students consistently ranked low on concern might have been particularly positive, rather than neutral, as the term "low concern" connotes. (p.426)

Brophy et al. investigated the relationships among all the attributes and noted what types and amounts of verbal interactions were exchanged with students rated as high, middle, and low on specific attributes. These teacher perceptions and ratings were compared to observer perceptions and ratings for the same students and any discrepancies were noted. Comprehensive profiles of students in the different attitude categories were extended. Brophy et al. (p.125) commented on the accuracy and dependability of teacher-provided data about students.

There are even more questions about self-report data from teachers. Taken at face value, they seem to add rich detail and elaboration to teacher expectation and attitude data. They help indicate other characteristics that teachers notice about students in particular expectation and attitude groups as well as some of the reasons why teachers hold the expectations or attitudes they hold. However, like any self-report data, teacher self-report data are distorted by halo effects, logical errors and other sources of bias or inaccuracy.....Thus teacher perceptions hang together nicely to make a consistent picture but at least some of them were incorrect. This raises questions about the rest of them.

Accuracy and bias aside, it is on the basis of their perceptions and assessments of students that teachers do operate. However, Brophy et al. were attempting to identify those specific characteristics of students which presumably would affect all teachers in similar ways. This was a difficult task, and, as Brophy et al. (p.449) implied, they found

a certain degree of unpredictability due to the "chemistry" of relationships between individual teachers and individual students for occasionally the right combination of teacher and student will produce relationships which defy all theory and previous research.

Crano and Mellon (1978:47) stated that teacher evaluation of and expectation for the social development of a child might exert an effect on student performance. Presumably a teacher who finds a child obedient and a pleasure to have in class would spend more time and energy helping and monitoring his academic progress. Especially in the early grades, they stated that "the affective response of the teacher to the student may have far more impact on the child's performance than the teacher's assessment of academic ability." The resultant self concept has a profound shaping effect on the child. Crano and Mellon concluded that the effects of these social expectations "based on aspects of the child totally incidental to his academic development, represent a potential educational inequity (p.48)."

#### Summary and Implications for the Present Study

Attitudes toward students contribute to the formation of performance expectations for students. Although based more on the personal qualities of the student, these attitudes tend to predispose

the teacher to assign certain attributes to the student and to affect his personal interaction with the student during instruction.

In the present study, the researcher obtained teacher-assigned scores for all 26 student subjects on Item #10-Attachment and Item #11-Concern, as in the Brophy et al. study (1976), but, in addition, had the teacher subject place all 26 students into one of the four attitude to student groups. Assigning all students to groups would weaken characteristics which are more apparent with the three most (or one most) representative student of each attitude group but all 26 students were subjects in the study and if any trends emerged for larger numbers of students, more confidence might be engendered in the data.

The achievement expectations of the teacher for each attitude group could then be examined as well as the personality and behavior attributes assigned (The present study used the 13 Attribute scales from the Brophy et al study). In addition the dyadic verbal interaction contacts received by individual students could be averaged into attitude group scores which could be compared with findings from previous research studies. No attempt was made to prove how accurate the teacher was in these expressed attitudes and perceptions but the strength and consistency of these teacher ratings were of major interest.

#### CLASSROOM INTERACTION

In order for the expectancy effect to operate, the performance expectations and affective reactions held by the teacher have to be communicated and understood by the student. Perhaps the most common vehicle for conveying this information to the student in the classroom,



is the dyadic verbal interaction he exchanges with the teacher. Indirect information is relayed to the student by virtue of the quality and quantity of interaction which he personally receives (Dusek, 1975). More direct communication of expectations is also possible.

Rosenthal (1973:60) proposed a four factor theory to explain how teachers communicate their expectations to students. First the teacher creates a "climate" (eg., a warm, socio-emotional mood). According to Rosenthal, the teacher monitors "input" ( or the type of verbal interaction) addressed to the student on the basis of his perceived achievement and motivation levels. Beez (1970) noted that his teachers ( student teachers) taught more content to "bright" students. He concluded that teacher expectations had been translated into overt alterations in teaching style and substance. The "output", as Rosenthal termed the response opportunities afforded the children usually result in the high achievers receiving more opportunities for verbal interaction with the teacher. Teachers send "clearer strong evaluation", or "feedback", to bright students. Use of praise is certainly a way of communicating these expectations. Firestone and Broudy (1975:549) noticed a feedback difference in that the low students were praised less when they required more supportive teacher behavior and received more criticism than the situation warranted.

That the resultant interaction patterns can be connected with teacher expectations has been well attested by numerous research studies to date (Brophy and Good, 1970; Kester and Letchworth, 1977;

Rothbart et al, 1971; Rubovits and Maehre, 1971, and Nash, 1976.

Dusek (1975:681) stated that although differences in the amount and kind of interaction may be noted, if teacher expectancy is based on objective data then no "bias" is present in resultant verbal interaction. In fact the differences in interaction might be the teacher's attempt to provide teaching style differences to suit children with differing needs. But if differences are based on irrelevant information, then bias may be said to exist.

The student's reaction to this information may depend on his personal characteristics. Pupils with high achievement needs may exert more effort to counteract the sentiments the teacher seems to be communicating. Teacher use of criticism with more able pupils sometimes functions to encourage better effort on their part. However, low achievers tend to give up and behave in accordance with the low expectations expressed by the teacher.

The obvious function of verbal interaction is the exchange of information. Feedback to the student is important for such things as time on task (Bloom, 1974:686) and for providing the student with information essential to purposive behavior (Smith and Luginbuhl, 1976:270).

How much and what kind of verbal interaction occurs in the classroom is very much controlled by the teacher. Her teaching style for example, may encourage or discourage pupil input during lessons. One would expect to find far more student-initiated interaction with an "indirect" style of teaching. Smith and Luginbuhl (p.270) stated that the amount and kind of interaction directed at the individual

student was due more to the degree of teacher awareness for the "aware teachers gave more equal verbal attention to both bright and dull" in their study.

Classroom interaction studies involve the observation of overt behavior in naturalistic classroom settings. Data are collected either in checklist form such as the Dyadic Interaction Observation System, derived from Brophy and Good(1969) for recording verbal exchanges, or by concurrently recording the observer's classification into a microphone (Haigh, 1975:100) for later decoding.

The "quantity" of verbal interaction refers to the frequency and amount that takes place between a student and the teacher. Some researchers have found no quantitative differences in the way the teachers interacted with high and low achieving students (Rubovits and Maehre, 1971 and Smith and Luginbuhl, 1976), but more frequently researchers have found both quantitative and qualitative differences in the way the teacher engaged the children in verbal interactions (Haigh, 1974; Jeter, 1972; Rothbart et al, 1972; and Bloom, 1980). Haigh found up to three times more interaction with perceived high-achieving students. "Qualitative" differences in interaction are evidenced by the use of higher order questions, probing questions to correct inaccurate answers, sustaining, evaluative remarks, and process feedback which are commonly addressed to the abler student and to the student for whom the teacher has concern.

Varying reasons may explain why differential interaction patterns are allowed to exist. For example, for motivational reasons the teacher may choose to call on the "bright" child on whom he can depend to provide

consistent and appropriate responses (Good, 1970:193). Perhaps in realizing ability differences the teacher is attempting to protect feelings of the student and in the hope of reducing anxiety purposely may not call on him in public settings. The net result, however, is that children note the amount and type of verbal interaction they experience with the teacher and develop a self concept partially based on this information.

Cooper (1977) suggested that either a more selfish desire to control personal rewards (Interacting with bright children is more satisfying to the teacher) or the desire to retain personal control over the "content, duration, and timing" of the interaction with "low" achieving students (particularly in student-initiated interactions) determined the patterns of interaction. The teacher often chooses the situation over which she has the most control. Cooper (1977:421) found that his teachers expressed higher expectations for and perceptions of greater control over the academic performance of females. Cooper felt that teachers' expectations for and sense of control over students were positively related. As a result the teacher will administer more negative feedback to low students in the hope of dissuading them from becoming involved in public interaction situations over which she perceives she has the least control.

Firestone and Broudy (1975:544) claimed that the knowledge of interaction patterns in the classroom enable one to predict academic performance independently of I.Q. They argued that teacher expectation, whether experimentally induced or naturally present, has an effect on the interaction that takes place in the classroom with "high students

having an interactional advantage (p.545)." Firestone and Broudy saw the danger of the self-fulfilling prophecy occurring for students repeatedly treated in a manner indicating that their verbal contributions were relatively worthless. Eventually students internalize these expectations.

#### Summary and Implications for the Present Study

Verbal interaction patterns indirectly communicate teacher performance expectations to students and hence can function as differential teacher treatment. The differing patterns frequently noted in classroom studies serve to reinforce existing differences in students' ability thus acting as a mediating agent for the expectancy effect.

A prime purpose of the present study was to examine teacher-reported perceptions and feelings toward students with some attempt to compare other available student information with the set of teacher-expressed data and to attempt to interpret existing dyadic verbal interaction patterns using this particular information.

Verbal interaction data pertaining to high, middle, and low expectancy groups, the four attitude-to-student groups, and for the 26 individual students involved in this study were examined to determine and describe the predominant characteristics of the verbal exchanges and the quality and quantity of verbal contacts received.

#### SUMMARY

This chapter has briefly outlined several research areas which gave rise to the present research project. Individuals in a classroom

make up a unique group of people who interact on the basis of perceptions, attributions, and expectations held for one another and by "observing the norms of the setting" (Wilson, 1977:246). It is only by getting to know these particular people, their characteristics and the ways in which they work together that researchers can attempt to develop causal explanations about instructional processes in specific classrooms. This would argue in favor of naturalistic observation. The case study method seems to be particularly well suited for exploratory, hypothesis-generating studies in naturalistic classroom settings.

It was the increasing awareness that students' characteristics and behavior tended to exert influences on teachers' behavior, rather than completely vice versa, that prompted Brophy et al. (1976) to undertake their Student Attribute Study to try and determine which student characteristics affected teachers in predictable ways. Fiedler (1975:736) acknowledged this "bidirectionality" of influence and claimed that all classrooms lie somewhere along the continuum from "asymmetrical" to "reciprocal" control. A student senses how much control he is able to exert and uses it. More subtle control is gained by virtue of the personality characteristics he possesses.

Teacher attitudes to students and attributions for students' ability and effort contribute to the formation of teacher-held performance expectations for students. Resultant differences in the relative assessments of students are frequently disclosed through variation in the amount and kind of verbal interaction that is exchanged between the teacher and individual children in the classroom.

Student characteristics and classroom performance as evidenced by time spent working on task provide a daily information source for the teacher who monitors the student's progress and makes adjustments in her assessments of his ability and effort. These expectations are cyclically formed, maintained, and communicated through the interpersonal relations and verbal interaction occurring during routine instruction in the classroom. The factors contributing to the formation of expectations may be partially explained by attribution theory, the affective reaction of the teacher to particular students, and partly by drawing interpretative heuristic inferences once the dynamics of the classroom interaction are intensively observed and analyzed.

## CHAPTER III

### DESIGN AND PROCEDURES

In this chapter, the design, the methodology adopted and the data collection procedures are presented. The subjects and the data sources are described and the subsequent treatment of the data is outlined.

#### THE DESIGN

##### Overview

In the design of this study the following recommendations which were suggested in background literature and related research were incorporated where possible.

(1) Research should use multi-faceted data collection instruments and procedures. This should include a combination of subjective and objective data, high and low inference data, and a mixture of qualitative and quantitative data which is mainly descriptive in nature. Such an eclectic approach might afford the opportunity to "triangulate" (Miles, 1979:590) or corroborate the same information gathered through various data collection techniques. MacKay (1978:1) recommended the incorporation of complementary data collection procedures into the design of a study in order to reduce the oversights and limitations inherent in the use of a single instrument.

(2) Research should extend the data collection over a period of time in order to study the ongoing instructional processes more efficiently, accurately and naturalistically.

(3.) Research should single out the numerous elements that appear to affect the teaching-learning process and to study them both separately and in combination with one another in order to see what interactional effects these elements exert on each other (Bennett, 1978:127 ).



(4.) Research should focus on different aspects in the classroom such as the teacher subject ( the behavior he exhibits, his thought processes- particularly those thoughts concerning students, his perceptions of the individual students), the individual student ( his characteristics, and his work habits), and on groupings made up of these students ( such as expectancy groups, reading groups, affective attitude-to-student groups, and boy/girl groups).

(5.) Research should emphasize that the study of individual students is a worthwhile new direction for educational research (Brophy and Good, 1974 ; Mahen, 1977) for each student possesses a unique set of personality characteristics and work habits. These characteristics exert an influence on the teacher who subsequently provides each student with treatment based on his reaction to these perceived student qualities. The growing recognition of the "bidirectionality" (Fiedler , 1975:735 ; and Brophy et al, 1976: 128 ) of the classroom instructional process, or the reciprocal student effect on teacher behavior may provide information which researchers have overlooked formerly by concentrating on the one-way instructional process of teacher effects on students. In addition, to isolate for consideration the student's work habits and use of academic learning time is to study a mediating process in itself which affects subsequent achievement ( Bloom, 1974:684).

In summary, an integrated approach was adopted which would replicate portions of many other studies and in so doing would retest the instruments and methodologies used therein in order to corroborate findings from these individual studies. In addition by looking at these varied forces in interaction with each other, a way of reducing the complexity of processes

at work in the classroom might be found and tentative explanations might be formulated which would simplify the description of these processes. It was anticipated that questions raised during this endeavour might serve as topics for further research.

#### FEATURES OF THE DESIGN

Representative portions of the Dunkin and Biddle (1974) model were incorporated in the design ( student presage data- as perceived by the teacher and teacher presage data as stated by the teacher in the form of attitudes and priorities in teaching; language arts and math contextual data, dyadic verbal interaction process data as well as student work habits and effort process data, and achievement product data). In addition the covert thought processes of the teacher were examined as recommended by Winne and Marx (1977) and the N.I.E. Panel 6 Report (1975) and were examined in conjunction with these more overt data sources.

Briefly the main instruments and methodologies of the present study were taken from the following sources: rankings of the students using instruments from Brophy and Good (1970 and 1974), Brophy et al. (1976) and Luce and Hoge (1978); the teacher's perception of student attributes as measured on the instrument (13 Attribute Scales) used in the Brophy et al. (1976) Student Attribute Study; the teacher's attitude to students from Silberman (1969), Willis and Brophy (1974) and Brophy et al. (1976); and the thought processes of the teacher from Shavelson (1977), Clark and Yinger (1977) and Clark and Peterson (1978). This study liberally borrowed aspects of 12 studies recently conducted at the University of Alberta, Edmonton, in four of which the present researcher played an active, though minor, role.

Mahen (1977) by focusing on individual students studied the relationship of individual students' classroom behavior to process (verbal interaction) and product (achievement) measures. Muttart (1977) studied the relationship of teacher-held expectations for students concerning their general level of achievement across subjects and the resultant amount and kind of dyadic verbal interaction received by these students from the teacher. Fasano (1977) studied how certain presage student characteristics appeared to relate to the amount and kind of dyadic verbal interaction the students received. Eggert (1977) investigated the behaviors exhibited by six teachers during instruction (as recorded using high inference instruments) in relation to student achievement. Marland (1977) investigated the covert thought processes of six teachers during instruction by using videotaped lessons to stimulate recall of their interactive thoughts. Connors (1978) examined interactive thought processes of nine teachers in order to identify the underlying "principles of teaching" or belief systems that appeared to influence the teaching behaviors of these teachers. Smyth (1979) focused on four target students and studied their individual use of academic learning time. The present researcher acted as the reliability check during the data collection for the Smyth study. Among other things, King (1979) looked at the importance of effort attribution, the value the teacher placed upon individual student effort, and the ways in which the perception of student-exerted effort influenced teacher perception and treatment of students. The role of teacher expectations played a major role in his study as well. Tuckwell (1980) focused on the interactive thoughts of two teachers and in particular looked for evidence of specific thoughts

about his area of interest; the impact of an in-service program. (The present researcher was interested in isolating only those specific thoughts about particular students and their characteristics during instruction). The present researcher acted as the reliability check for Tuckwell's content analysis categorization of these interactive thoughts. One aspect of Project Quest (MacKay, 1979) concerned the teaching behaviors of the 61 teacher subjects (one of whom was the teacher subject in the present study) and noted whether these observed teaching behaviors changed over time and/or related to levels of achievement in each classroom. The present researcher assisted in the preparation of the data collection instruments for Project Quest, the training of the coders who gathered the data, and acted as the reliability check in several classrooms including the particular classroom under study in her own research. Moody (1980) developed detailed profiles on one target student from each of six classrooms and described how the many influences in a classroom appeared to affect these students. (The present researcher developed less exhaustive but comprehensive profiles on all of the 26 students in the one classroom under investigation). Wodlinger (in progress) examined the interactive decision-making processes of one teacher over an extended period of time and attempted to trace the "antecedents" and "rationales" for these interactive decisions. (The present researcher acted as the reliability check for the content analysis categorization system developed and used by Wodlinger in his study).

The foregoing are the most influential sources from which the elements in the present study were selected. The purpose of drawing together so many elements was twofold:

(1) To answer more comprehensively the specific research questions which guided the data collection for the present study. By collecting many kinds of data using varied data sources and by approaching the questions from different angles it was hoped that a more plausible description of the ongoing classroom instruction would result.

(2) A second purpose of adopting a multi-faceted approach was a purposeful melding together of many elements from other studies which independently contributed to a partial explanation of the teaching-learning process. It is anticipated that the combination and interaction of the elements selected might serve to explain more fully some of the complexities of classroom life which previously have been masked by adopting too narrow a focus for investigation. A sub-purpose was to test and re-evaluate the instrumentation used in these studies.

Thus a case study approach was used in a naturalistic setting in a single classroom. The researcher acted as a non-participant observer and did not attempt to induce any experimental effects. Naturalistic observation and quantitative data collection techniques were combined with both general interviews and stimulated recall interviews conducted with the teacher to ascertain his perceptions of the students. Perceptual, qualitative, and quantitative data were gathered using varied instrumentation. The overarching purpose of the study was to describe, from the teacher's perspective, the teacher-student relationships and the ongoing instruction in the class over the three month period. Using the teacher-provided data, a description and explanation of how the teacher's perception of each individual student, and of groupings comprised of these students might relate to the teacher's treatment of these individual

students and groupings of students and how, in turn, this treatment might influence subsequent achievement levels was attempted.

Although research questions were posed to guide the observations and data collection a series of hypotheses was not proposed and tested. It is anticipated that hypotheses for future research can be generated from the findings. The main purpose of the present study was to explore and to describe the instructional processes in the classroom under study.

### The Subjects

The present study was linked to a larger system-wide study, Project Quest, involving 61 experienced Grade 3 and Grade 6 teachers. The study was conducted jointly by the Centre for Research in Teaching and the Edmonton Public School Board during the winter of 1979. One of these Grade 3 teachers agreed to allow more extensive investigation of the teaching-learning process in his classroom and hence became the teacher subject for this study. The teacher, in his late twenties, had four years of teaching experience in the elementary grades prior to the 1978-1979 school year. He was informed that the general intent of the study was to explore and examine the instruction in his classroom during language arts and math periods, that observational data would be collected during instruction, that selected lessons would be videotaped, and he was advised that additional time would be required of him for both general interview and stimulated recall purposes. He was told that he would be de-briefed at the conclusion of the data collection, would be assured of anonymity, and would receive a copy of the dissertation in its final form.

The school was located in a generally high socio-economic area and all except three students in this class came from two-parent families.

The 26 student subjects ( 13 girls and 13 boys) ranged in age from 8 years 1 month to 9 years 5 months. The mean I.Q. for all 26 students was 112 and academic achievement was valued by the students and an interested set of parents.

### Instrumentation

Although 14 data collection instruments were used in this study, no new instruments were developed. Minor adaptations were made to three of these instruments. Also both general interviews and stimulated recall interviews were conducted with the teacher to elicit teacher general thoughts and interactive thoughts about students.

The Dyadic Interaction Observation System. The dyadic interaction observation system, or DIOS, is directly descended from the Brophy and Evertson (1973) modification of the original Brophy and Good (1969) dyadic verbal interaction instrument. With some of the items deleted, the original two page instrument was collapsed into a one page format. This comprehensive low inference instrument is designed to capture a variety of dimensions of both student and teacher verbal behavior. These verbal interchanges which can be either teacher-initiated (Tinitis) or student-initiated (Sinitis) and may occur in private, small group, or whole class settings, are recorded in the sequence in which they occur. The particular student involved in the interaction is identified. Thus it is possible to determine the amount and kind of verbal interaction specific to individual students in comparison with other class members or by different grouping patterns ( as described before) or by the entire class using frequency and/or percentage scores. Provision for recording the lesson context enabled later subject area comparisons. A copy of this

instrument appears in Appendix A.

Reliability for the verbal interaction instrument. The instrument for recording verbal exchanges between the teacher and individual students, the dyadic interaction observation system (DIOS), is an adaptation of the 1969 and 1973 versions developed and used by Good and Brophy, and Brophy and Evertson respectively. Brophy and Evertson (1973) reported that it was possible, using their two-page, rather complicated system, to train coders to reach a criterion of 80% agreement for reliability purposes. The formula they proposed for the purpose of conducting a reliability check was:

$$\text{Percentage agreement} = \frac{\text{number of coding decisions made by both coders and agreed upon}}{\text{number of codings made by the first coder but not the second, plus the number of codings made by the second coder but not the first.}}$$

Project Quest used a simplified version of this low inference verbal interaction instrument. Although the individual student was not identified, 49 of the 60 categories on the DIOS used in the present study were identical. The present researcher acted as the reliability check for Project Quest in several classrooms, one of which was the classroom used in her own research. Using the above formula a reliability coefficient of 86.0% resulted with the Project Quest coder in the classroom under study in the present research project.

In the reliability check for the present study, a fellow Ph.D. student who had collected verbal interaction data for his own doctoral dissertation research acted as the reliability check using the DIOS instrument. Using the above formula a reliability coefficient of 85.4% resulted for the verbal interaction instrument in this study.



Six Rankings. In the Brophy and Good (1973:93) study, the teachers were asked to rank all the children in the classroom in the order of expected achievement. "Instructions were kept deliberately vague to encourage teachers to use their own complex subjective criteria in making judgments." In the present study the six different instrument rankings of all 26 students by the teacher were administered using the specific instructions (not vague) as outlined in the Brophy et al (1976:469) study. The teacher was asked to assign all the students into seven weighted categories. The ranking list was divided into seven "clusters" (within which all students were considered "equal"):

"the three highest, the four next highest, the five above the middle, the five middle, the five below the middle, the four next lowest, and the three lowest". The teacher was asked to determine the highest, then the lowest, then the next highest, then the next lowest, thereby approaching the middle. In this study separate class rankings were made by the teacher for:

- (1) Projected Achievement in Math.
- (2) Projected Achievement in Language Arts.
- (3) Maturity
- (4) Cooperative/Compliant Behavior

as in the above-mentioned studies. Two additional rankings for

- (5) Motivation to Do School Work
- (6) General Intellectual Ability

were included from the Luce and Hoge (1978:491) study.

The 13 Attribute Scales. The 13 Attribute Scales were used in the same form as they appeared in the Brophy, Evertson, Baum, Anderson and Crawford (1976:450) Student Attribute Study. The teacher rated each of his 26 students on a line continuum reflecting a "low", "medium", and "high" assessment of the child's possession of the following 13 attributes:

- (1) calm/ good self control
- (2) careful/deliberate worker
- (3) happy
- (4) probable highest achiever,
- (5) mature
- (6) cooperative/compliant behavior
- (7) creative
- (8) attractive
- (9) persistent worker
- (10) likeable/attachment
- (11) of concern to the teacher
- (12) noticeable
- (13) looks you in the eye

Brophy et al. (1976) used the values of "high", "medium" and "low" in their analysis. In the present study finer distinctions were made which enabled a score of one to seven to be derived from this instrument which would complement the ranking scores of one to seven for comparative purposes.

Teacher Attitude-To-Student Assignments. The teacher attitude-to-student questionnaire was administered by asking the teacher to assign students into the affective categories of "attachment", "indifference", "concern", or "rejection". (The specific definitions provided for each category appear in Appendix A). Silberman (1969) had asked for one student in each category. Willis and Brophy (1974) and Brophy and Good (1974) asked for three students and Evertson, Brophy and Good (1973; as reported in Brophy and Good 1974:137) asked for as many as five students in each of the attitude groups. Since the present researcher gathered data on all 26 students the teacher was requested to place all 26 students into the four attitude-to-student groups.

Connors' Micro Analysis of Teachers' Interactive Thoughts. Although it is customary and usually necessary to devise a unique content analysis system for stimulated recall data, Connors' Micro Analysis was used in the present study for two reasons:

(1) Connors had developed these detailed content analysis systems to unitize and categorize stimulated recall data from the nine teachers representing three elementary grades. The systems were global enough to accommodate the data from these varied sources yet exhaustive enough to include the thoughts unique to each teacher. Upon close examination of the systems it appeared as though the stimulated recall interview data from the present study could be analyzed very satisfactorily using these existing systems.

(2) A sub-purpose of this study was to replicate portions of other studies and to re-evaluate the instrumentation used therein. This occasion was opportune for determining how generalizable and applicable Connors' systems were to the stimulated recall data collected in the present study.

The interview data are first screened to include only "interactive" data (thoughts the teacher was having during actual instruction). These data are then unitized or separated into discrete units and subsequently filed into the appropriate categories which describe the types of thoughts. This procedure converts the qualitative interview data into units that can be counted and analyzed using quantitative analyses methods. Connors' Micro Analysis System divides the expressed interactive thoughts into 12 broad categories most of which, in turn, are sub-categorized.

Connors' Macro Analysis System re-analyzes the interactive data and "sieve" codes it (Guetzkow, 1950) in order to "investigate teacher-held beliefs, principles, rules and other factors that influence teacher behavior (Connors, 1978:179)."

Reliability of coding using Conners' Micro Content Analysis

System. The intercoder reliability check was conducted by a fellow Ph.D. student similarly engaged in a content analysis of stimulated recall data in his own doctoral research. The same extracts from three different stimulated recall interviews were used for both the intercoder and the intracoder reliability checks. A period of about three months intervened between the intracoder reliability check and the original coding of the data by the researcher.

With the use of a content analysis system the reliability of the coding processes of unitizing and categorizing is a usual concern. In addition, however, the decision to include portions of the data as "interactive", and therefore codable, or to exclude them as "non-interactive" data was subjected to a reliability check as well because of the obvious importance of this initial coding decision.

Conners (1978:107) had conducted reliability checks at all three coding stages using three different coefficients of reliability. As these procedures had been followed in turn by King (1979), Tuckwell (1980), and Wodlinger (in progress, 1980), they were adopted by the present researcher as well and are now outlined.

Holsti (1969:138) had used the following formula to establish a reliability coefficient for coding "dichotomous decisions", such as whether or not a portion of data could be classified as "interactive" or "non-interactive":

$$\text{Coefficient of reliability} = \frac{2M}{N_1 + N_2}$$

M represents those decisions agreed upon by the two coders and  $N_1$  and  $N_2$  refer to those decisions made by each coder respectively. The use of this formula resulted in a reliability coefficient of 88% for intercoder reliability and a coefficient of 93% for intracoder reliability for coding "interactive" versus "non-interactive" data.

The segmentation, or unitization of data, was examined in the second reliability check for which Connors (1978:107) cited Guetzkow's claim that for this purpose, it was appropriate to "express the difference between two coders as a percentage of the sum of the units obtained by each coder." Thus for unitizing, the formula used in the reliability checks was:

$$U = \frac{O_1 - O_2}{O_1 + O_2}$$

A ratio of 0 (zero) would indicate that the coders were in perfect agreement.

$O_1$  and  $O_2$  refer to the number of units established by the two coders. Using this formula the intercoder reliability coefficient was .06 and the intracoder reliability coefficient was .02 for unitizing the data.

For the coding process of categorization, use was made of Scott's formula which makes adjustments for the probable frequency with which each of the numerous categories are used by chance alone. Scott's formula is:

$$\text{Reliability} = \frac{Po - Pe}{1.00 - Pe}$$

$Po$  represents the agreed-upon decisions and  $Pe$  represents the chance occurrence of such agreements. The use of this formula for the intercoder reliability check resulted in a coefficient of 81% and for the intracoder reliability check a level of 85% was reached.

An acceptable level of reliability is determined by considering

the complexity of the content analysis system used. Marland (1977), Conners (1978), King (1979), and Tuckwell(1980) had defined a reliability coefficient of .70 as an acceptable level of reliability in their respective studies. In the present study both the intercoder and the intracoder reliability coefficients were above this established level of acceptability.

High inference scales measuring Teacher Behavior. Project Quest's data collected on high inference rating scales were used in the present study to describe predominant teaching behaviors exhibited by the teacher subject. Thirty-one high inference variables were worded to reflect observable teaching strategies which were deemed to be desirable teaching behaviors from previous research in teaching. The high inference variables were rated on a five point scale. The ratings of 1 and 2 were coded as "agreements" as were ratings of 4 and 5 for the purpose of determining intercoder reliability.

Reliability for high inference scales measuring Teacher Behavior. The following formula was used to calculate the inter-rater reliability for this high inference scale:

$$\text{Percentage agreement} = \frac{T_A}{T_A + T_D} \times 100 \text{ percent}$$

$T_A$  and  $T_D$  represent the total numbers of agreements and disagreements. The present researcher acted as the reliability check in several classrooms under study in Project Quest, one of which was the classroom used in the present research project. The level of agreement reached with the Project Quest coder was 80.6% for this intercoder reliability check.

General Interviews and Stimulated Recall Interviews. Eight stimulated recall interviews (completed within three weeks in April) and five long general interviews (ranging from March 6 to June 7th) plus many shorter recorded conversations were conducted with the teacher. The general purpose of all these interviews was to collect the teacher's thoughts, perceptions, and feelings about his students and their academic progress.

The stimulated recall interviews elicited those teacher thoughts about particular students during actual instruction which may have influenced teacher treatment of these students. Hence in this study the content analysis of teacher interactive thoughts was not the only information of value. In all, three types of analyses were applied to the interview data. A micro Content Analysis (Conners, 1978) of teacher interactive thoughts (was contained in the stimulated recall data) determined the nature of thoughts about students in particular during instruction. A macro analysis of interactive thoughts helped to identify which expressed attitudes and priorities may have influenced his treatment of particular students in specific instructional situations. A perusal of all non-interactive data from both stimulated recall interviews and general interviews helped to determine what general beliefs about teaching this teacher appeared to hold and finally, perhaps the most important analysis of all, a search of all interview data to collect all comments about particular students in order to clarify and corroborate numerical scores assigned to these students by the teacher on the many different data collection instruments.

#### SPECIFIC RESEARCH QUESTIONS

In this study five major areas of interest gave rise to the general, overarching research question addressed in this study:

To what extent is it possible to explain how or why differential treatment of students occurs by examining the teacher's perceptions of his students?

...and to the following, more specific research questions:

- 1.0 What are the common characteristics of students assigned by the teacher to each of four attitude-to-student groups (attachment, concern, indifference, and rejection)?
  - 1.1 What were the perceived personality characteristics which might serve to explain the teacher-expressed attitudes and affective feelings toward these groups of students?

The required information concerning each of the 26 students in the classroom was obtained by having the teacher assign a numerical rating specifically for each child on 19 attribute measures which dealt with student characteristics such as personality traits, work habits and effort, teacher-assessed ability levels, and the expectancy held for each child for academic performance. In addition verbal interaction information, age, I.Q., achievement scores were collected for each child as well as information about each child from the series of interviews held with the teacher.

The teacher assigned all 26 students into one of four attitude to student groups which reflected the teacher's affective reaction to each individual student. The scores received on the teacher-assigned measures, and on the other data sources, were averaged for the four groups in the collective attempt to describe all children belonging to a specific attitude-to-student group. While this masks individual differences to a certain extent, some characteristics emerged which may help to describe commonalities shared by members of the four groups and these results were compared to findings from previous research on teacher attitudes to students.



- 2.0 What evidence is there, if any, of expectancy effects?
- 2.1 What evidence is there, if any, of product expectancy effects? What is the relationship of teacher-held expectancy to end of the year achievement results?
- 2.11 for students assigned to high, middle, and low "probable highest achiever" levels (for general achievement in all subjects)?
- 2.12 for students assigned to high, middle, and low "probable achievement in language arts" levels?
- 2.13 for "good" and "poor" reading groups?
- 2.14 for boys and for girls?
- 2.15 for the four attitude-to-student groups?
- 2.2 What evidence is there, if any, of process expectancy effects? What is the relationship of teacher-expressed expectations to the amount and kind of verbal interaction exchanged?
- 2.21 for students assigned to high, middle, and low "probable highest achiever" levels (for general achievement in all subjects)?
- 2.22 for students assigned to high, middle, and low "probable achievement in language arts" levels?
- 2.23 for "good" and "poor" reading groups?
- 2.24 for students assigned to high, middle, and low "probable achievement in math" levels?
- 2.25 for boys and for girls?
- 2.26 for the four attitude-to-student groups?

The expectancy information required in order to answer both parts of Research Question II was obtained in the form of teacher-assigned numerical score (from 1 to 7; 1 being "high") on three of the 19 attribute measures which were concerned with teacher-held expectancy for students. The three expectancy measures used in the present study were:

probable highest achiever (for general, overall achievement in all academic subject areas).

probable achievement in language arts

probable achievement in mathematics.

Students who were assigned expectancy scores of 1 or 2 were classified as "high" expectancy students. Student receiving scores of 3, 4, or 5 were considered to be "middle" expectancy group students and in the same manner, students with expectancy scores of 6 and 7 were considered to be in the "low" expectancy group for each of the three expectancy measures. For the two reading groups, the average expectancy score for "probable achievement in language arts" only was used. Expectancy scores assigned to boys and girls were averaged as were the expectancy scores for the four attitude-to-student groups for all three expectancy measures.

The product measures used were the end of the year, system-wide Grade 3 language arts achievement test and the Grade 3 mathematics achievement test. The process measures used in this study were the percentage ratios of specific types of dyadic verbal interactions which were exchanged between the teacher and a specific student. The various groups' "product" and "process" scores were derived by averaging their individual member's scores for these product and process measures.

- 3.0 Using all available information, to what extent is it possible to construct a comprehensive student profile which would describe the student's behavior, his achievement, his membership in various grouping patterns, and the relationship he had with this teacher?

Since most of the data included in the student profiles were provided by the teacher, each profile tends to present the student as the teacher perceived him (which is what was desired). In part, Research Question 4.3 (To what extent do these teacher-reported thoughts about students clarify/corroborate numerical scores assigned to the student by the teacher?) is similarly addressed in the composition of these student profiles.

The presentation format in each of these 26 student profiles, or mini-case studies, is meant to be uniform in that the numerical scores on the 19 attributes are presented in narrative form and interwoven with direct teacher quotations taken from the transcribed interview texts which relate to the same attributes for which a numerical rating exists. Other teacher-provided information about the student, gleaned from the interviews, is presented in these mini-case study descriptions as well. In short, a presentation of the student as the teacher claimed to have perceived and assessed him was attempted (not a description of the individual student as the researcher viewed him). Additional information concerning age, I.Q., achievement and time on task where available (as not all students had been chosen for engaged time observation) followed this description. A personalized dyadic verbal interaction set of data were included in each student's profile. A summary statement, which did incorporate views held by the researcher, as well as a review of the more salient student characteristics previously presented ended each student profile.

4.0 What information is obtainable from the interviews held with the teacher?

4.1 Which kinds of thoughts about students in particular were reported during stimulated recall interviews?

- 4.2 What teacher attitudes and priorities are revealed in all interview data?
- 4.3 To what extent do teacher-reported thoughts clarify/corroborate numerical scores assigned on the different student ratings?

Eight videotaped lessons during both language arts and math instruction were shown to the teacher in order to elicit the interactive thoughts he had been considering concurrently during instruction. Of particular interest to the researcher, were those interactive thoughts about students which the teacher reported during stimulated recall interviews for these expressed thoughts were presumed to indicate the kinds of student information which was processed by him during his actual teaching.

An examination of the eight stimulated recall interviews and the more general interviews held with the teacher over the three month period was undertaken in the attempt to identify and reveal the more global teacher-expressed priorities and attitudes which appeared to relate to observed teaching behaviors and which appeared to exert an influence on his teaching style.

The extent to which comments from the many interviews supported the numerical data was explored more fully during the compilation of all teacher-provided information about each student when the case study profiles were being assembled. Apparent discrepancies in the two types of information were clarified by asking the teacher for information which would resolve any misunderstanding on the part of the researcher.

- 5.0 How could the teaching behavior of the teacher subject be described?
- 5.1 What are the predominant teaching behaviors of this teacher?
- 5.2 What are the predominant verbal interaction behaviors of this teacher?

This teacher was observed by a coder from Project Quest on ten occasions during the teaching of language arts and math and was rated on his observed performance on 31 teaching variables. The average of these scores has been used to describe his predominant teaching behaviors during the same time period as the present study and to compare his performance with that of 60 teachers who participated in Project Quest.

Data obtained on the DIOS in the present study have been averaged to indicate this teacher's usual verbal behavior, across the three month period, which was directed to the class as a whole and toward various student groupings which existed in the classroom.

#### ASSUMPTIONS

A major assumption established in previous research (Good and Brophy, 1975, and King, 1979) is that both teachers and students hold performance expectations which are formed and exchanged reciprocally through classroom interaction. These teacher-held expectations exert an influence on the way the teacher reacts to and treats the students.

It is assumed that "self reporting" techniques are valid ones for collecting introspective data (Harré and Secord, 1972:154).

In particular, it is assumed that the technique of stimulated recall is especially suited for this purpose. It is further assumed that the

researcher was able to develop and maintain a rapport with the teacher and that the teacher was able and willing to recall and articulate his interactive thoughts and decisions to an accurate degree.

The researcher assumed that by observing the familiarization procedures (suggested by Marland, 1977, Connors, 1978, and King, 1979) that the presence of the researcher and the video equipment was of minimal distraction to the subjects in the study.

It is assumed that the samplings of verbal interaction patterns teacher perceptions and ratings and the interview data accurately represent the ongoing instructional processes in the classroom.

#### LIMITATIONS

As this study was conducted in one classroom, the generalizability of results is somewhat limited.

There was a possible observer bias in the data collection because, of necessity, the researcher was aware of the teacher's perception of and feelings toward the students.

There is always the possibility that the intrusion of the researcher may have distorted some of the behaviors in this naturalistic setting.

This study was not able to investigate the students' thoughts and perceptions and focused only on the teacher's perceptions of ongoing classroom instructional processes.

#### PROCEDURES

In this section the different phases of the study are described and the procedures followed during each phase are outlined.

### The Preparatory Phase

Prior to the pilot study the instruments for use in the study were selected and their formats were adapted where necessary to suit the purposes of the research.

With two fellow doctoral researchers, Tuckwell (1980) and Wodlinger (in progress), who were also involved in stimulated recall research, the researcher spent several sessions in the Audio Visual Laboratory in the Faculty of Education learning to operate the video recording equipment. Helpful hints and suggestions were shared during the data collection for all three studies. King (1979) gave advice concerning familiarization procedures and stimulated recall techniques.

All required video recording equipment was made available to the researcher on long-term loan for the duration of the study from the Audio Visual Media Centre of the Education Faculty. This equipment consisted of: a small-format television camera (Sony 3200, B/W), a video tape recorder (Sony AV3600 Solid State), a television monitor (Panasonic 9", B/W receiver), a wireless microphone (Lectrosonics M30R/R31) worn by the teacher and its receiver, a set of headphones (Sony DR-9), a portable two-shelf metal cart, accompanying cord, plugs and extensions and 10 video tapes (half inch, open reel, B/W). The researcher used an audio cassette recorder (Sears 19298) and remote microphone (Sony one point stereo microphone F-99B) to audio-tape actual lessons on occasion and to tape the general interviews as well as the stimulated recall interviews conducted with the teacher.

Training of the second coder who would act as the reliability check for the study commenced at this time. King (1979), experienced in using varied data collection techniques and classroom observation procedures, had

used an adaptation of the Brophy and Evertson (1973) dyadic verbal interaction system in his own study and had assisted in Project Quest with coder training and the development of the simplified verbal interaction instrument used therein. Hence training on the DIOS (dyadic interaction observation system) was readily accomplished.

The selection of the two cooperating Grade 3 classrooms (for the pilot study and for the main study) was facilitated by the Research and Development Office of the Edmonton Public School Board and the Field Services Office in the Education Faculty on campus.

#### The Pilot Study

The pilot study which spanned a one month period (February 1-27th, 1979) was conducted in a different school than the one used in the main study. A female teacher and her 24 students in a self-contained Grade 3 classroom agreed to participate as subjects for this phase of the research.

This stage of the study was essential so that the researcher could become skilled in using the coding instruments, gain confidence and expertise in using the video and audio equipment, and could perfect questioning and interviewing skills for conducting the stimulated recall interviews.

As a result of the pilot study minor alterations were made on the DIOS(verbal) instrument resulting in more efficient coding. Having experimented from various locations in the classroom, the researcher decided to video record from the back of the room keeping the teacher in view. During the three stimulated recall interviews that were conducted it was found that the stimulated recall methodology had to be supplemented with probing questions which helped the teacher to focus on thoughts about students and not on the broader spectrum of interactive thoughts.



Ground rules were developed to guide these question probes. The transcripts of these stimulated recall interviews were scrutinized by a fellow researcher to see that protocols were being followed and that additional questioning techniques were appropriate. During the course of the pilot study ideas for collecting the data became the bases for the data collection procedures used in the main study. All intended purposes were accomplished in the month-long pilot study phase of the research.

#### Data Collection Plan

The main study extended over the three month period, March 1 to June 7, 1979. The bulk of the data were collected in March and April.

Lesson Context. Observations were confined to language arts and math periods for several reasons. The teacher did not teach all subjects to his own class. It was in these lesson contexts that the teacher behavior data ( for Project Quest) were being collected. The choice of these basic areas acknowledges their major importance in the elementary school curriculum. Also it was felt that sufficiently different instructional strategies and settings would be employed by the teacher in these subject areas.

Mathematics, with its relatively more formal structure would provide the opportunity of observing specific teaching behaviors. In the present study language arts settings were expanded to include the following activities: spelling drill, spelling workbook activities, handwriting instruction, student free-reading periods, teacher oral reading a novel to students, reading group instruction, creative writing, and general discussions. Since language arts in this classroom involved a high percentage of individualized or group work, certain social studies lessons

which provided suitable opportunities for observing the teacher and students participating in general discussions were included under the language arts general discussion category.

Familiarization period. The classroom subjects already were accustomed to the presence of the Quest observer who had begun collecting data for the larger study one month previous to the beginning of the present study. The researcher acted as the reliability check for this Quest coder. The percentage of agreement for coding on the Quest verbal interaction instrument was 86.0% and for coding on the high inference scales used in Project Quest the agreement percentage was 80.6%.

A period of about ten school days was allowed in order to learn the students' names (and identification numbers for coding purposes), to determine the scheduling of classes in language arts and math instruction, and to become knowledgeable about the teacher's operational routines. Eye contact with the student subjects was avoided in order to discourage their friendly attempts at interaction and to present a business-like appearance. This was difficult to do but was continued for the duration of the study. Some time was spent practice coding using the DIOS instrument to build up speed and accuracy before actual data collection began.

Beginning the first day, the researcher video-recorded lessons in order to allow subjects to become accustomed to the presence of the observer using the video equipment in the classroom. In both classrooms (in the pilot study and in the main study) the researcher was convinced that the subjects virtually ignored her presence and the video recording equipment after the ten day familiarization period was over.

### Data Collection Procedures

Verbal interaction data were recorded in a variety of instructional settings. Several lessons were coded before any interviews were conducted with the teacher or before any teacher-perceived data were obtained. This procedure was followed to ensure that at least some of the verbal interaction data could not have been affected by alerting the teacher to the researcher's purposes and concerns.

Over the three month period, dyadic verbal interactions for the present study were gathered during math (1191 interactions over 10.5 hours of math instruction) and language arts (1524 interactions over 14.9 hours of language arts instruction) periods. A total of 2715 separate dyadic verbal interactions were recorded in all, representing a total of 25.4 hours of instructional time sampled over the three month period. This allowed for the possibility that each of the 26 students could be involved in an average of 100 or more interactions gathered during a variety of instructional settings.

After about one month the teacher was asked to rank order the class members on the six ranking measures. These forms were completed on three different occasions to allow the teacher ample time for consideration. Names of all of the children were printed on small cards which could be arranged and rearranged before final decisions were made and the names copied onto the forms. The ranking lists were divided into seven "clusters" (described above). Within each cluster spaces were provided for three to five names and all students were considered equal within each of the clusters.

At this time the students were assigned by the teacher into the four attitude-to-student groups. Into the attachment category ("If you

could keep one student for another year for the sheer joy of it whom would you pick?) the teacher placed 15 students and one additional student, a boy, Nicholas. "Someone like Nicholas... He almost doesn't fit ..." He gave him a "conditional" placement in the attachment group. Because of the large number of students in this group the teacher was asked to identify his first three choices for the attachment group. Separate analyses for these three students were carried out and compared with analyses for the entire group of 16 attachment students (to which they belonged) and compared with the other attitude-to-student groups as well.

The definition provided for the concern group was "If you could devote all your attention to a child who concerned you a great deal, whom would you pick?" Into this group the teacher placed Ian (Case 14) and Tom (Case 15) who experienced academic problems and Bonnie (Case 18) who had emotional, medical, and academic problems.

The teacher hesitated to place any student into the rejection group ("If your class was to be reduced by one child whom would you be relieved to have removed?")...The teacher claimed that in other years he did have "rejection" students but he did not feel strongly negative about any student in this year's class. He eventually gave Pamela (Case 23) a "conditional" placement and Sonia (Case 26) who moved into the classroom in early April eventually received a "conditional" placement in this group as well. For the purposes of analyses these two girls were considered to belong in the rejection group.

The provided definition for the indifference category ("If a parent were to drop in unannounced for a conference whose child would you be least prepared to talk about?") seemed to fit Marilyn (Case 12) and John (Case 17). Three other students, Sharon (Case 1), Keith (Case 2),

and Mason (Case 20) were not all that noticeable and the teacher had neutral or "blah" feelings about them. The literal definition of indifference seemed to apply to these children who were placed in this group as a result.

The teacher was given a separate copy of the instrument, 13 Attribute Scales (Brophy et al, 1976), for every student in the class and was asked to consider the student as an individual when assigning a "low", "medium", or "high" rating along the line continuum. Brophy et al had used the values of "low", "medium", and "high" in their analysis of the 13 attributes. However the teacher in the present study chose a position along the line continuum thereby disregarding the specific "low", "medium", and "high" markings. This occurrence had not been anticipated by the researcher but it was mutually decided that this method yielded more precise information. Subsequently the researcher was confronted with a conversion problem. The line was segmented into seven clusters and a numerical score ( of 1 to 7) was assigned to each student for his score on each of the 13 attributes. With recognized limitations, this procedure enabled cross comparisons with the class rankings for now all teacher-perceived measures ( six rankings and 13 attributes) for each of the 26 students ranged from one (high) to seven (low) in possible numerical value. Within these 19 items there were two "maturity" measures and two "cooperative/compliant" measures. It was of interest to compare the two separate ratings for each child on these two particular characteristics for these ratings had been completed with at least two weeks intervening and by using two relatively different rating methods.

Spontaneous conversations with the teacher were audio-recorded when possible as well as the more formal, six general interviews. These taped conversations were transcribed and typed into 133 pages. The eight stimulated recall interviews averaged about 50 minutes each and were audio-taped and later transcribed into 113 typed pages. In all 246 typewritten pages of combined interview data were prepared for content analyses.

Although not included in the present report, data on engaged time (time on task) were collected for selected students in the class. These data appear, where available, in the Case Study Profiles in Chapter VI. Continual observation of the student under surveillance resulted in a minute-by-minute account of his use of time. Resultant percentages of time on task for teacher-directed settings, for self-paced-independent work settings, and for combined settings are interesting additions to the profiles of these selected students. An account of these findings for engaged time will appear separately in a later report.

In June, data from cumulative cards were gathered for each student. Precisely this information included the age of the student, three I.Q. (Verbal, Quantitative, and Non-Verbal) scores for each student, and the end of the school year (1979) achievement marks (with total scores and sub-category scores) for language arts and math.

#### Data Preparation and Analyses

Varied forms of data resulted from the data collection methods utilized in this study. Each type of data is described and the methods of analyses are outlined.

Verbal Data. Data for each of the 2715 dyadic verbal interactions were punched onto separate IBM computer data cards to retain both the frequency counts for each of the 60 possible coding categories for each interaction and to preserve the sequence of occurrence of these interactions. Verbal data for eight types of language arts lesson contexts and five types of math lesson contexts were separately computed. This enabled the researcher to summarize for each student his specific verbal interaction occurring within certain kinds of lesson contexts subsumed under the broader subject area, or within the whole subject area, or within the total instruction observed. This procedure also provided teacher data on such verbal behaviors as the number of questions posed (eg., process questions or self-reference questions) in each lesson context, in each subject area, or for the total instructional time that was coded. This information was stored in a 48 page computer file entitled "Verbal".

Percentages or "ratios" for each student on each measure were computed by dividing the student's specific total by the total delivered by the teacher to all students in the class. A separate computer file was created for each of the 26 students in which these ratios were stored. These 26 verbal student files had to be "tailor-made" for 13 of the students as they had been absent periodically during the verbal data collection (resource room appointments, medical appointments, etc.) and their "possible" total had to be altered by deleting data from the time periods for which they had not been in attendance. This procedure was complicated but was eventually accomplished and thought to represent a more accurate account of the amount and kind of interaction received by

these students. If adjustments had not been made for these absences an average score of 3.8% should have resulted for all verbal interaction behaviors. As a result of the adjustments, this average ratio rose to the 4.1 - 4.2% range for all verbal behavior.

Student ratios could be used singly (as for developing the Case Study profiles which appear in Chapter VI) or combined with other students' data into the various grouping patterns under study. (Two examples of the individualized verbal data files have been included for perusal in the Case Study Chapter VI, specifically for Case Study #1-Sharon, and Case Study #3- Geoffrey.

Attitude Groups. Each student had been placed into one of four attitude groups by the teacher and was thereby assigned a 1, 2, 3, or 4 designation which was entered into a column in the computer file called "Students". Whenever computations concerning attitude groups were needed, data for members of the groups were easily retrieved.

Rankings. Data obtained on the 13 Attribute Scales had been converted from a three point scale to a seven point scale because the teacher provided more discriminatory information than had been anticipated. Certain limitations of this procedure are acknowledged but this conversion enabled a number (from 1 to 7) to be assigned to each student for each of the 13 attributes. This information on attributes of students was entered into 13 columns in the computer "Students" file and was used in the same manner as data collected on the six class rankings which also resulted in scores from 1 to 7. All 19 measures were treated similarly in the analyses that were conducted.



Additional Data. I.Q. scores, age and achievement scores were entered into the computer "Students" file and were used to compute means for the different group memberships and were used to conduct correlational analyses.

Interview Data. Interview data were subjected to several analyses. Conners' Micro Content Analysis and Conners' Macro Content Analysis systems were both used on interactive data and a "sieve" code (Guetzkow, 1950) was conducted on all data which included both interactive and non-interactive data. The fourth analysis technique used with the interview data was a comb through of all 246 typewritten pages in order to retrieve all references to a particular student and to combine all such references together into a student file. These teacher comments were compared with the teacher-assigned scores on the 19 dimensions, with the various scores achieved by the student, and with the amount and kind of verbal interaction received by the student in order to develop a composite profile of all available information which could be obtained about each particular student. Such a profile was developed for each of the 26 students in the class. (These student profiles appear as the "Case Studies" in Chapter VI and are to be used as a glossary when additional information is desired about certain group members).

### Correlations

Pearson Product Moment Correlations were conducted in order to ascertain the relationships between presage variables of teacher-perceived student attributes, process variables of student verbal

interaction and product variables of achievement and I.Q. tests.

### Analysis of Variance

The extent of the differences in the various scores received by boys and girls and by the two reading groups was determined using t tests.

Differences in the various scores assigned to the three general achievement expectancy groups, the three language arts expectancy groups, the three math expectancy groups, and the four attitude-to-student groups were identified by f tests. Scheffé procedures pointed out the extent of these differences between specific groups.

### SUMMARY

In this chapter the design of the study and the instrumentation used therein were described. The phases in the research were outlined as well as the procedures used during each phase. The ways in which the various data sources were prepared and analyzed were also presented.

CHAPTER IV  
TEACHER ATTITUDE TO STUDENTS

In this chapter the information presented is in response to Research Question I-What are the common characteristics of the students assigned to the four attitude to student groups? What factors (perceived personality characteristics) might serve to explain the teacher-expressed attitudes (affective feelings) towards these groups of students?

INITIAL SELECTION OF STUDENTS INTO THE FOUR ATTITUDE-TO-STUDENT GROUPS

Several weeks after data collection began, the teacher was requested to select several students for placement in each of four attitude-to-student groups. In his original study, Silberman (1969) had requested that only one child be placed in each group. Willis and Brophy (1974) had requested three, and Brophy and Good (1974) obtained as many as five names from the teacher for each attitude group. In this study the teacher was presented with the instrument used by Silberman (1969, 1971) and Willis and Brophy (1974) which asked four questions:

- (1) If you could keep one student for another year for the sheer joy of it, whom would you pick?
- (2) If a parent were to drop in unannounced for a conference whose child would you be least prepared to talk about?
- (3) If you could devote all your attention to a child who concerned you a great deal, whom would you pick?
- (4) If your class was to be reduced by one child whom would you be relieved to have removed?

There was no hesitation in providing three attachment choices or concern choices. There was some confusion about the indifference category (question #2) but eventually he provided three names.

Although one student was seriously considered as a possible candidate, no name was provided for membership in the rejection group. At a later date in May when data collection was ending, the teacher was questioned

about indicating possible rejection group students, At this point the student previously considered (case #23) was given "conditional" placement in the group. In June during a follow-up interview the teacher was requested to place all 26 students into one of the four attitude-to-student groups which he was eventually able to do by assigning three "conditional" placements in all. All of the original placements were reassigned to the same groups. The different stages in the selection of students into the attitude groups and the teacher's comments while performing this task are now presented.

#### Attachment Group

The difficulty the teacher had with choosing three attachment students was to limit his favorites to just three. "Someone like Joanne (case 25) ...I really like Joanne you know and the thing is we have a lot of interaction after school and so on and she's enthusiastic about everything. ...She's into this and into that and a kid who really has her head together, knows where she's going, what she's doing and yet she's still a kid. She's not a pseudo-adult."

The second choice was Geoffrey (Case 3). "Good old Geoff. I like Geoff because I admire idiosyncratic behavior and Geoff calls his own too. He's bright.... He stands out a little bit and has ...well he's not one of the sheep."

"There are lots of them I'd like to keep for another year... I should put others down because there's a whole mess of them that I would like to keep but anyway Edward (Case 4) is a kid who....You know he's really bright. I shouldn't say this right after saying he's bright but he's the sort of a kid that I was. He's into sports. He's a bit of a leader"

in class... Actually he's younger than a lot of the kids too, by months, not by a long time, but he's younger than most of them... He's quite cooperative."

#### Indifference Group

The teacher had considerable trouble placing students into the indifference category. He attempted to interpret the literal definition and encountered difficulty. "A lot of parents drop in and come in and so I've had to do it... a possibility?... Well I'm prepared to say a lot of things about Sharon (Case 1) but I don't have a lot of answers. Is that the kind of thing? I could describe a lot of behavior for her mother that I have questions about but..."

"Well I'd have to say that Marilyn (Case 12) would be the first choice and I could typify her as being a nice little girl but one of the ones you can... Its partly because of her location in the class. She's at the back. It's partly because she's not... you know someone like Nicholas (Case 19) demands attention. She doesn't. She's not that kind of individual ... I have a general idea of where her strengths and weaknesses are generally but if somebody wanted to pin me down about something specific I'd have to say 'Hey, let me check my records.'"

"Someone like John (Case 17). I had had more contact with his parents and have talked to them but well, you know, some kids are not leaders and I'm not saying he isn't, or won't be, but he's younger... He's not the most visible person in class but he's somebody I would typify as being a reasonable, good average student; nothing outstanding but nothing I need to worry about a lot. The only thing I might say about him is with respect to the maturity thing... but in terms of academics, you know, if I wanted to put my fingers on where he's at I might have a little more trouble doing that."

He considered Sharon again. "Sharon. I know pretty well where she's at in terms of her academic achievement but the kinds of questions that remain unanswered... Well I find a lot of her behaviors a little unusual, shall we say. She's a little...uh, sneaky...at times really negative about things, at times really turned off on friends, on things that are happening, and yet at other times the opposite end of the stick so that she's a little "enigmatic" I guess is the word. And I guess I haven't got a real "fix" on her and that's why I would bring her up."

#### Concern Group

The teacher had three ready choices for the concern group. "I guess my first choice, the person in class who in terms of personality... Well I'll just put down Bonnie (Case 18) and tell you why. She's a bright child. She's hyperkinetic and on medication for that... She's had terrible eye/hand coordination difficulties. She's a frustrated girl in a lot of ways because she knows that she's bright but at the same time the prospect of keeping up with the brighter members of the class is something that she just has to say 'Well mentally I can do that but I'm unable to...' " He sometimes allowed her to do less work volume. "She knows. She knows exactly what's going on and she finds that quite frustrating... We've had some frank discussions about some of the problems she has... Recently she's been really upset with some peer group things as well. Kids are not as kind to her as they might be. At the same time it's a two-way street, it always is with kids. But anyway she's a kid that I think for example, if I could spend all my time with her that she could really move along. "Another kid that I could spend a lot of time with... going through

my mind here, someone like Ian (Case 14)...mostly cause I like the kid I guess and because he has some problems. (He had repeated Grade One and one month prior to the beginning of the study his mother had died following a lengthy illness). "Ian isn't the brightest kid across the board, he isn't. Not withstanding that he's a nice lad to work with. He's a kid who I think with a lot of attention, a lot of drill, well a lot of work...well he's not going to be a 'scholar' but obviously I think a one on one situation would improve whatever skill level, obtain a somewhat higher skill level, whether it would be retained I don't know but anyway he's the one I would try."

"Let's see...I'm sitting here thinking I've got kids like Tom (Case 15) who really needs a lot of work and tries pretty hard. He's willing to, at times intermittently at least, he's willing to really force himself to concentrate." (The teacher indicated that there was a possibility that Tom might have to repeat the grade.) " I think that both these kids, Ian and Tom, are really approachable young people who are...well I've taught in other schools where kids have learning problems but they also have really severe personality problems. These kids have learning problems but they're fairly open about them...The important thing I think is to say 'Well just cause you don't know math doesn't mean you're dumb, it means you don't know math,' this kind of approach. And well if I had lots of time those are the kinds of people that I would spend a lot of time working with."

#### Rejection Group

In March the teacher provided no names for the rejection group.

"Geez, you know another year I would have people for you. I'm not sure

that I can honestly say... There isn't a person there that I would like to see leave the class..."(Concerning Pamela, Case 23, as a possibility) ... "Okay if you pressed me to choose someone today I would say 'no'. Yesterday I would have said 'yes'- well not yesterday but last week I would have said 'Yes'... I don't feel terribly negative about any of them. I really don't. That's a genuine thing. In previous years I could have given you a list of five."

#### FINAL SELECTION OF STUDENTS INTO THE FOUR ATTITUDE-TO-STUDENT GROUPS

In May the topic was reopened. "Who would I like to 'unload'? Um... you know there are so many ways of looking at that. In terms of the amount of time that I'm required to spend with an individual I could say 'Well this could lighten my load. Like I could think of two. Someone like Ian (Case 14) and someone like Bonnie (Case 18). Those two for that reason ... I suppose the one who would be most marginal in terms of personality traits would be Pamela (Case 23).

Because Sharon (Case 1) and Keith (Case 2) had received low scores on the "attachment" attribute (Item 10 on the 13 Attribute Scales) their names were mentioned by the researcher. "Well the thing is with ones like Sharon and Keith they're a kind of quiet people. I don't find their personalities as attractive as some of the other children but they're not disruptive, that sort of thing."

In May the indifference choices were discussed again. "Of all three...you know they don't stand out in class. They sort of, in each case, John, Marilyn, and Sharon... I guess in a sense their demands on me are not as great. They don't stand out positively and they don't stand out negatively either. I'm just sort of ... 'blah' about them. That's my perception and that's my feeling... During the May interview the teacher was informed of the general characteristics of indifference



students from previous research and of the theory (Brophy and Good, 1974) that the negative attitudes of indifference students often "conditioned" teachers to become "turned off" and to avoid them. "You know I can almost buy that. In a sense I think of someone like Sharon (Case 1). She's somebody who, when you ask kids to get out books... 'groan', ask kids to do this or do that and it's never approached with enthusiasm. I shouldn't say never but frequently enough that it can be 'off-putting' to the teacher. 'If that's how much you care then'....."

You know I could buy it for Marilyn and Sharon but John... I don't know whether my perceptions change or what happens. There can be that as well you know. He's occasionally almost in a purposeful way, he's negative and thinks it's cute to tease a little bit. But he's not in quite the same category as the other two who tend to have somewhat negative approaches to lots of their tasks, or appear to have... You know the kinds of demands he (John) makes when he wants to volunteer. It's not sufficient to put up a hand it has to be 'oh, oh, oh', this sort of thing... Sort of lacking in self control."

Keith (Case 2) received a low score on the "attachment" attribute and the teacher was asked if Keith was viewed in this manner. "Someone like Keith, a quiet boy, but he's not a kid who completely lacks enthusiasm for anything... I don't see him that way." Thus in the May interview the three first choices for attachment, concern, and indifference remained the same and Pamela had been "conditionally" designated as the only rejection student.

In June the teacher was requested to attempt to place all 26 students into one of the four categories. He was given the class list to work from

so that no student would be overlooked. He was informed that if any student would fit into two categories he could place the student in both. "They won't... Gosh it's hard you know... I find this really difficult in a sense. I have one possibility here of keeping someone because I think he's super but no possibility for someone I feel 'blah' about. Like I know a lot about them. I'm not 'concerned' about them. I wouldn't 'reject' them but at the same time I don't feel really 'attached' to them. Do you see what I'm saying? I've got several of those. Like one I see is Keith. That's why I stopped, you see. So what do I do with him?" (Rejection?) No reply. (Indifference?) "but I know a lot about him... If you took this out, the definition, and just had 'indifferent' I could put him in indifference because 'indifference' that's neither positive or...well it's sort of negative, but it's a kind of a default."

"Sharon, if we can reject the definition, belongs in here. Marilyn would certainly be put in this category." (with the actual definition?) "with the definition although now she doesn't really any more because since it was brought to my attention, you know... you start doing some work that way. "

"I'd sort of put John into this list without the definition. Mason (Case 20) was added to the group. Keith's name remained as one of the few unfiled names. It appeared that the teacher felt rejection too strong a reaction to him. "He and I... It's kind of funny and it's probably a genuine change in my attitude toward him too. We've talked to each other a bit more. He's been working a little harder. He's done very well. He seems, I don't know, a little happier with the way things are going... something along these lines. That can change my approach to things."

The teacher placed Keith into the indifference group but without the definition. Thus the only indifference student for whom the provided definition seemed to fit at all was Marilyn and as the teacher indicated, he had begun to find out more about her after he had realized he lacked such information. This resulted in five students being placed into the indifference group in all.

A total of 16 students were placed into the attachment group. "It's easy to put these ones down. There's a whole crew of them." In all there were eight boys and eight girls. Nicholas (Case 19) was the last student placed in this group. "Someone like Nicholas... Where will I put him? I'm not indifferent about him. I'm not sure I'd want him for another year. I don't reject him. He almost doesn't fit. Like he's not one of these kids (indifference and rejection) who are sort of ones that I see without marvellous personalities and that sort of thing... I guess I'd be closer to attached to him more than anything else- but not as close as some of these others. Maybe I'll do this to him...\*(conditional placement in the attachment group).

The teacher assigned Pamela (Case 23) to the rejection group with a "not-definite, conditional" rider attached. As well..."I'd put Sonia (Case 26), the new girl, in that sort of category... She's sort of a funny kid... I guess the 'chemistry's' wrong or something... "

No more children were considered for or added to the concern list. In fact by this time in June, Ian had just moved to British Columbia. The teacher noted the great improvements that Tom (Case 15) had made recently and that his achievement marks were fairly good. "I wouldn't

fail him now because his math scores are high enough. He's got a lot of problems and he's going to need understanding teachers but I can't fail a kid and hope that... I wouldn't do it anyway because he's been working very hard. I've had quite a lot of contact with his parents and they've really been working with him hard at home. He's been getting some positive results and feels a lot better about what he's doing, of course... If you know your basics and drill, drill, drill... That has made all the difference in the world."

"Bonnie, I'm really concerned about her. She's a little different than with Tom. I'm really concerned that she's emotionally disturbed... I wish I could put my finger on it but she's just so up and down and such wide swings in mood and so on. I've had a fair amount of contact with Mom and she seems quite supportive, and you never know... You can't get inside a person. There's no lack of money in the family. They have just put in a swimming pool in their place and we are going over there for the year end party which is all very nice and lovely but the girl is very unhappy quite frankly. I'm really concerned about her but I don't know if all my attention would do any good... She's different than Tom, you see. Tom is kind of a rewarding experience right now. I'm really concerned about her state of mind."

#### CHARACTERISTICS OF THE GROUPS

In the attachment group the first three choices who were originally made in March and verified as the first three choices in June, were noted. In the following discussion they are sometimes isolated for comparison with the total group of 16 attachment students (which includes them) and with the other attitude groups as well. The 16th assignment to this group was "conditional" because the teacher could not decide on a better fit in another group.

The indifference group was comprised of three boys and two girls.

Membership in the concern group totalled three students. A girl, Bonnie, who was hyperactive and who had emotional as well as medical problems which led, in turn, to academic problems in some subject areas and two boys who were low achievers. One of these boys, Ian, had repeated Grade One and was experiencing emotional and adjustment problems directly due to a recent death in his immediate family.

Only two students were placed into the rejection group. Both were girls and both were "conditional" placements for the teacher wondered whether this might be too negative a reaction on his part. One of these students was a new girl, Sonia (Case 26) who joined the class in early April and who, by June, had earned a negative group castigation from the teacher. From time to time both girls would cooperate and put forth a good effort but most of the time they earned rejection group status.

#### CORROBORATION OF TEACHER AFFECT TOWARD THE FOUR ATTITUDE-TO-STUDENT GROUPS

Substantiation of attitude group placements is plentiful in the many general and stimulated recall interviews held with the teacher. In addition, two of the traits measured on the 13 Attribute Scales were really measures of teacher affect toward students. Brophy et al (1976) had relied solely on these measures for obtaining their measures of teacher affect toward students since they did not ask teachers to assign students into the four attitude-to-student groups. The scores received by the existing attitude groups in the present study should help to corroborate the teacher's affect toward them that was responsible for their original placement into the four attitude groups.

### Attachment

Item #10- Attachment read as follows: "Would like to have removed from class versus would like to keep for another year for the sheer joy of it. The scores received for the "attachment" attribute ranged from one to six. ( A score of one was high). These scores are presented as group scores and appear in Table 1.

Table 1  
ATTITUDE GROUP SCORES ON THE ATTACHMENT ATTRIBUTE

first 3 choices	1.00	Girls	Poys
attachment	1.687	2.0	1.37
indifference	4.60	4.0	5.0
rejection	4.50	4.50	-
concern	3.66	4.0	3.5
whole class	2.69	2.84	2.53

The whole class average was 2.69 and it appeared that he was slightly more attached to the 13 boys than to the 13 girls. Not unexpectedly the first three attachment students received an average score of 1. By definition the students in the rejection group would not be recipients of teacher attachment but in the present study indifference students received even lower scores than rejection students. Perhaps this was due to the "conditional" assignment of students to this rejection group.

In general the information gained from this "attachment, like to keep" measure provided support for the teacher's placement of students into the four attitude-to-student groups.

### Concern

The second measure dealing with teacher affect was Item #11 from the 13 Attribute Scales. This measure dealt with the amount of concern

the teacher felt about the child. Specifically Item #11 was worded: "Doesn't require special attention versus concerns me a great deal. I would like to be able to devote more attention." A score of one was high. The average scores received by the four attitude groups are presented in Table 2.

Table 2  
ATTITUDE GROUP SCORES ON THE CONCERN ATTRIBUTE

first 3 choices	6.66	Girls	Boys
attachment	6.14	6.0	6.25
indifference	3.40	2.0	4.3
rejection	1.50	1.50	-
concern	1.00	1.00	1.00
whole class	4.66	4.30	5.00

As expected the teacher was highly concerned about the three students he assigned to the concern group. He was also very concerned about the rejection group students. This concern is not restricted to academic matters and in the case of these two rejection girls his concern appeared to extend to their home background situations as well as to the academic difficulties they experienced. Coincidentally, perhaps, these were the only two students in this classroom to come from a broken home situation. In one case, Pamela (Case 23) was forbidden by her mother to see her father who did not have legal visiting rights and privileges but with the aid of an older sister she did manage to see him every week. A fair amount of tension and apprehension was apparent in this Grade Three student's behavior. In the other case, Sonia (Case 26), a series

of moves every year seemed to be part of the normal lifestyle. She joined the class in early April and subsequently, as traced by the researcher in an attempt to get a missing piece of information, had changed schools in September, 1979 and again in January, 1980. That was a total of four schools in two years. Different coping skills are required of a child who has to make a fresh start every six to eight months.

The following excerpt from the stimulated recall interview number six indicates that the teacher was beginning to form an impression of Sonia some two weeks after she had joined the class....

"Well okay, Here's this little interaction I have with Sonia. I guess I sort of think...I guess it maybe irks me a little bit to have someone tell me 'I hate doing that'...that sort of thing. Just challenging...

The kids in this class are largely from stable home situations where respect is an important thing and there's lots of money and they're kind of status quo people by and large and she may be somewhat outside that norm in this class... but she seems like a nice enough kid...I'm not concerned that I'm going to have any real problem with her I just think that her approach and attitude are somewhat different than many of the other kids in the class."

Researcher- Would you draw any similarities between Pamela and Sonia in that way?

"Well to the extent...I mean they're much different children, but to the extent that there are things that I can notice about their behavior that is in some ways different from most of the other kids and both of them are from broken home situations. I suppose there's that similarity..."



Researcher- Thinking specifically of the amount of respect...would the rest question your authority on occasion just as much?

" I think this far, maybe it's early to say. I would say that I haven't run into that at all in this class until now. Either that or it's been in a friendlier manner or something, I don't know. It hasn't been as noticeable or maybe as overt or something... It's unlikely that she and I will have difficulties that reach crisis proportions or anything like that."

Willis and Brophy (1974:526) stated that the rejection boys "were likely to come from intact families in which both parents were living..." and that "concerning girls in the rejection group the teachers frequently mentioned negative family patterns (broken home or poor parental cooperation)." Although no rejection boys exist to make the full comparison these are the only two students in the class (excepting Ian, whose mother had recently died) who came from single parent homes.

The two attitude-like measures for which numerical scores existed corroborated the memberships in the attitude groups to a satisfactory degree. The amount of attachment and concern the teacher expressed toward each student supported the teacher placement of these same students into the attitude groups. The rejection students were "conditionally" placed as they were not strongly rejected and they were of high concern to the teacher. Their scores on attachment and concern measures are less conclusive for these reasons.

The concern measure then confirmed the highest degree of concern was for concern students. A great deal of concern was felt for indifference students as a group but indifference girls in particular appeared to concern the teacher a great deal. Very little concern was expressed toward attachment group members.

PERSONALITY ATTRIBUTES OF THE FOUR  
ATTITUDE-TO-STUDENT GROUPS

In this section the average scores for the teacher-assigned attributes are presented for the four attitude-to-student groups. Originally these scores were assigned by the teacher to individual students and these scores were combined to provide an average attitude group score. The teacher rank ordered the entire class on some of these student characteristics and was asked to assign a score ranging from one to seven (low) while thinking only of a particular student for the remainder of these attributes. By combining these two forms of data, a general indication of the teacher's assessment of students on these measures is provided.

Two of these measures, "cooperation" and "maturity", were duplicated in that they appeared both as a class ranking scale and also as items #5 and 6 on the 13 Attribute Scales. Comparing these two sets of scores gave some indication of the consistency of the measures for a period of two weeks intervened and two slightly different methods were used to collect both sets of data. The teacher was asked in May to clarify any discrepancies between the sets of scores. The correlations using Pearson Product Moment Correlations to compare scores for these two measures of "cooperation" and "maturity" were  $.817 p < .001$  and  $.885 p < .001$  respectively.

All teacher assigned scores for the various student characteristics were obtained from the middle to the end of March (excepting those for Sonia who joined the class later on). These scores are assumed to represent the teacher's assessment at that time. In addition these scores are assumed to have remained relatively stable across the three months of the study.

The four attitude-to-student groups' average scores on all personality and academic attributes as provided by the teacher in this study are compared with similar information and findings from previous research on attitude groups. For each student descriptor the attitude-to-student group averages are noted, any within-group sex differences are presented, and any general class sex differences are identified along with class mean scores for all descriptors.

#### Work Habits and Effort

The average attitude group scores for "motivation to do school work" (Class Ranking #6), "careful/deliberate worker (Item #2) and "persistence" (Item #9) are presented together in Table 3. They give an indication of the teacher's assessment of the effort expended and the general work habits of the students in the four attitude-to-student groups.

Table 3  
ATTITUDE GROUP SCORES FOR WORK HABITS AND EFFORT

	motivation	careful	persistence
first 3 choices	2.0	1.3	1.0
attachment	2.4	1.7	1.4
indifference	4.2	4.0	4.2
rejection	5.5	5.0	5.5
concern	6.7	6.7	7.0
whole class	3.5	2.9	2.8
girls	3.7	3.2	2.9
boys	3.3	2.6	2.8

F tests using Scheffé procedures which were used to find the differences among the four attitude groups found significant differences between the attachment group scores and all other attitude group scores for all three measures.

The effort exerted by a student is seen to be personally rewarding to a teacher. This teacher was asked if the effort a child made was important to him. "Sure that's part of the interaction, maybe part of the way in which personalities mesh. You cannot avoid the thought that if someone is putting forth some kind of effort to respond to your work then the likelihood is that you are going to feel better about that and spend more time with him...There may be mitigating circumstances. I think of someone like Ian (Case 14) ... It's also important for the brighter kids to try. I think, for example, if there's a bright child who puts in little effort the kind of interaction they would have with the teacher would be different from the child who is working hard...The effort is a reward for the teacher, no doubt about that. That encourages you to extend further effort."

Weiner (1979:17) stated, "Surely a teacher will not particularly like a student who does not try, and failure perceived as due to a lack of effort does not elicit sympathy."

Part of the liking for the attachment group students is due to the consistently good effort they display. In the group of 16 attachment students there were some slight sex differences that favoured the girls. The teacher credited them with better work habits and with better effort expended over all. These findings are consistent with Brophy and Good(1974) and Brophy et al's (1976) findings for attachment group girls and the attachment group in general.

Table 4

## ATTACHMENT GROUP SEX DIFFERENCES FOR WORK HABITS AND EFFORT

	motivation	careful	persistence
attachment girls	1.9	1.3	1.1
attachment boys	3.0	2.1	1.6

Willis and Brophy (1974:524) noted that attachment boys had "high ability ...and rewarded the teachers by being dependent on them and by doing well in school work" but they said of attachment girls specifically that they were "achieving" and "good independent workers" suggesting somewhat more initiative on the part of attachment girls. The present findings tend to support some differences favoring attachment girls on the work habits and effort dimensions.

Indifference girls and boys showed some differences as well. This information is presented in Table 5.

Table 5  
INDIFFERENCE GROUP SEX DIFFERENCES FOR WORK HABITS AND EFFORT

	motivation	careful	persistence
indifference girls	5.0	4.0	5.0
indifference boys	3.7	4.0	3.7
(A score of one is high)			

Indifference boys were seen to be more motivated and persistent than the two indifference girls. Negligible sex differences existed for the concern group and the rejection group consisted of two girls only.

If all three sets of scores are collapsed and averaged, a summary view of effort and work habits as assessed by the teacher would result in the findings presented in Table 6.

Table 6  
ATTITUDE GROUP SCORES ON THE COMBINED WORK HABITS  
AND EFFORT MEASURE

attachment group	1.83
indifference group	4.13
rejection group	5.33
concern group	6.80

Scores for all groups would appear to fit patterns established in other research studies. Although positive attitudes to school were not measured as such in the present study an overt indication of same would be effort expended. As Brophy and Good noted (1974:153) noted, concern students were "in need of encouragement" and were "notably lacking in self confidence" which would interfere with the amount of effort put forth by these students.

For the class in general, the teacher assigned higher scores on all three traits to the 13 girls and the 13 boys were seen as somewhat less motivated, less careful and less persistent.

#### Age and Maturity

In March the average of of students in the class was 8 years 7 months. Ages of the students ranged from 8 years 1 month to 9 years 5 months.

The youngest attitude group was the indifference group with an average age of 8 years 5 months. The eight attachment girls were actually younger with an average age of 8 years 4 months but in all the attachment group age average was 8 years 6 months. The two rejection girls averaged 9 years 0 months in age. The concern group averaged 8 years 8 months but because Ian had repeated, his age was 9 years 5 months compared to the two other concern group members; Bonnie at 8 years 3 months and Tom at 8 years 4 months.

All girls in the class had an average age of 8 years 6 months and the boys averaged 8 years  $7\frac{1}{2}$  months in age.

Teacher-assigned ratings for "maturity" resulted in the attitude group averages shown in Table 7. The first maturity rating obtained was provided in the form of a class ranking (#5) and the second

Table 7  
ATTITUDE GROUP AVERAGES FOR AGE AND MATURITY

	Age in Months	Maturity I	Maturity II
first 3 choices	104.3	2.3	1.3
attachment	102.0	2.6	1.8
indifference	101.3	5.2	4.8
rejection	108.0	5.0	5.0
concern	104.0	6.0	5.7
whole class	103.61	3.69	3.07
13 girls	102.61	3.46	2.92
13 boys	103.61	3.92	3.23

set of maturity scores were derived from Item #5 on the 13 Attribute Scales which the teacher completed for each individual student about two weeks later. Both sets of scores which purport to measure the same student trait favor the students assigned to the attachment group with the attachment girls receiving slightly higher ratings than attachment boys.

The three indifference boys scored an average of 5.0 on both maturity measures but the two indifference girls received a lower (than boys) score on the maturity I scores and a higher (than boys) score of 4.5 on the maturity II scores.

Rejection girls received 5.0 on both measures. The girl in the concern group received a 6 and then a 5 on the two scores for maturity.

The Pearson correlations used to detect the relationship between the Maturity I and maturity II scores were:

.885  $p < .001$  for the whole class

.888  $p < .006$  for all girls

.906  $p < .001$  for all boys

The teacher was asked in May to clarify several discrepancies in

these rankings. For example, Brenda (Case 7) had received a 2 and a 5 on the maturity ratings. " I would use the upper one...Sometimes in our one on one interactions after school she's fairly immature but when it comes down to her approach to her work, the academic side of things, then she's very interested, persistent, works very effectively. These are all signs of maturity. So one one day I must have been thinking of some interaction that we had for she is the kind of kid who will stand two inches from your nose to make sure you heard her and go on and on. I probably was thinking more of an after-school thing."

#### Cooperation

Scores on measures of cooperation were obtained from the teacher. Cooperation I was the 6th class ranking and cooperation II appeared as Item #6 on the 13 Attribute Scales. The correlations for the two cooperation ratings were:

.817  $p < .001$  for the whole class

.806  $p < .001$  for all girls

.904  $p < .001$  for all boys

The teacher apparently assessed the attachment group students as more cooperative and compliant than the other three groups. Overall rejection group scores are the lowest and this result concurs with findings from previous research. Indifference students are not seen to be particularly cooperative. Concern students are almost as low in assessed cooperation as the rejection group students. Other studies imply that concern children are more cooperative and "conforming to class rules" ( as reported in Brophy and Good, 1974:188)

than the findings from this study indicate.



Table 8  
ATTITUDE GROUP SCORES FOR COOPERATION

	Cooperation I	Cooperation II
first 3 choices	2.7	1.3
attachment	3.0	1.6
indifference	4.2	3.2
rejection	6.0	5.5
concern	6.3	4.0
whole class	3.84	2.50
13 girls	3.46	2.61
13 boys	4.23	2.38

In the first set of scores for cooperation the 13 girls are seen to be more cooperative but the second set of scores which are closer in numerical value indicate that the teacher viewed the 13 boys as more cooperative overall.

#### Intelligence and I.Q.

The teacher ranked the whole class for his assessment of their "general intellectual ability" (Class Ranking #1). Scores for the attitude groups are presented in Table 9. In addition the three I.Q. scores ( Verbal, Quantitative, and Non-Verbal) have been combined and averaged to produce a "total I.Q.score" and are presented as well as an "objective anchor" (Brophy et al, 1976) for the teacher's assessment of ability level.

The teacher assessed the first three choice attachment students as very high in general intellectual ability and indeed their total I.Q. score was well above the class average of 112.2. In general the 16

Table 9  
ATTITUDE GROUP SCORES ON INTELLECTUAL ABILITY AND I.Q. MEASURES

	Teacher-Assigned General Intellectual Ability	Total I.Q. Scores
first 3 choices	1.7	121.2
attachment	2.6	118.5
indifference	5.2	106.13
rejection	6.0	99.3
concern	6.0	97.7
whole class	3.76	112.28
13 girls	4.07	111.94
13 boys	3.46	112.6

attachment students were rated above the class average by the teacher for general intellectual ability and the Total I.Q. score for the group seemed to justify his high assessment of them.

His assessment of the indifference group's intellectual ability may have been somewhat low since a score of 4 would have been "medium" or average and their I.Q. average of 106 indicates average ability overall but certainly less than average for this particular class which was the teacher's reference basis.

The rejection scores on general intellectual ability are essentially the same as the concern group scores. In previous research findings the rejection students, although rated low by the teacher in intellectual ability, are sometimes found to be of average or better intelligence. In the present study their Total I.Q. scores are still within an "average" range but are much below this class' average of 112. Concern students, as in most other studies of attitude groups had the lowest ability levels and were perceived to have low ability by their teachers.

Within the groups there are some interesting sex differences and these are presented in Table 10.

Table 10  
SEX DIFFERENCES IN ATTITUDE GROUPS FOR GENERAL INTELLECTUAL  
ABILITY AND TOTAL I.Q. SCORES

	General intellectual Ability	Total I.Q. Scores
8 attachment girls	3.0	118
8 attachment boys	2.3	119
2 indifference girls	6.0	102.2
3 indifference boys	4.7	108.7
1 concern girl	5.0	108.0
2 concern boys	6.5	92.6
(A score of 1 is high)		

The teacher assessed the attachment boys and the indifference boys higher than the girls in those two groups on the dimension of general intellectual ability. The total I.Q. scores show that the eight attachment boys have made marginally higher scores than the eight attachment girls but the three indifference boys' average total I.Q. is about six points higher than the average total I.Q. of the two indifference group girls. The concern group differences might be explained by the fact that Bonnie's (Case 18) placement in this group was largely because of medical, social, and emotional problems in addition to certain academic problems.

I.Q. scores in the class at large ranged from 84.6 to 135.0 and the class average for total I.Q. scores was 112.28.

The teacher assigned a higher general intellectual ability score for the 13 boys in the class (3.46) than for the 13 girls in the class (4.07). However, the average boys' total I.Q. score is only slightly higher at 112.6 than the girls' I.Q. average of 111.9. Contrary to many other

research studies ( as reviewed in Brophy and Good, 1974: 204 ) in which the girls received higher intellectual assessments than boys, the boys in this particular class were rated somewhat higher by the teacher on this dimension. Most other studies used female teachers as subjects. In the Brophy et al's (1976) study, for example, the 27 teacher subjects all were female elementary teachers.

### Creativity

The creativity descriptor appeared as Item #7 in the 13 Attribute Scales. It was precisely worded as "non-creative or unimaginative versus creative and imaginative". It is somewhat related in nature to the general intellectual ability dimension and so is discussed next. The non-verbal I.Q. scores have been presented in Table 11 as well as the creativity scores for they represent the best objective and corroborative information available for the teacher-assigned creativity scores.

Table 11  
ATTITUDE GROUP SCORES FOR CREATIVITY AND NON-VERBAL I.Q. SCORES

	Creativity			Non-Verbal I.Q.		
	1.3	girls	boys	122.6	girls	boys
first 3 choices	2.3	2.87	1.62	115.93	114.37	117.5
attachment	4.2	5.50	3.33	107.6	100.5	112.33
indifference	5.0	5.0	-	104.0	104	-
rejection	4.0	2.0	5.0	99.0	102.0	97.5
concern	3.03	3.54	2.53	111.46	109.6	113.23
whole class						

The relative accuracy of the higher creativity scores assigned to boys in the attachment and indifference groups (compared to the scores

given to girls) are reflected in the objective scores on the non-verbal I.Q. test for scores earned by the boys on this objective test are higher than those for girls in the attachment and indifference groups. Bonnie (Case 18) the concern girl, was assigned a fairly high score for creativity but her non-verbal I.Q. score of 102 was much lower than the class average non-verbal I.Q. score of 111.46. However when faced with any pen and paper task, especially one with an imposed time limit she was often unable to complete it. "She's a bright child... except that the physical aspect of writing is so difficult for her that it can be frustrating ..Verbally she's fine, creative, imaginative, perceptive, all of those things but if you asked me how she is going to achieve on a year-end test which requires other skills as well... Verbally she is reasonably creative. She can relate some interesting stories and experiences in an effective way. Her word usage is pretty solid so she expresses herself relatively well when I can persuade her that this is something she ought to do... If she could keep up with the written aspect I could probably have her in the other (good reading) group."

Generally speaking the teacher assessed the 13 boys in the class as more creative (2.53) than the 13 girls (3.53) and the non-verbal I.Q. scores of 113.23 for the 13 boys compared to the score of 109.69 for the girls would indicate that his perception of their relative creativity was fairly accurate.

#### Calm , Good Self Control

Item #1 on the 13 Attribute Scales dealt with the calm/good self control trait. "Restless, highly active versus calm, good self control" was the exact wording for this measure. Scores for the four attitude

groups are presented in Table 12.

Table 12  
ATTITUDE GROUP SCORES ON THE CALM DIMENSION

Calm			
first 3 choices	2.0	Girls	Boys
attachment	2.1	1.50	2.75
indifference	3.2	3.5	3.0
rejection	5.5	5.5	-
concern	6.0	6.0	6.0
whole class	3.04	2.76	3.30

Attachment students, particularly the eight attachment girls, received the highest scores on the calm attribute. Previous studies described the concern students as "restless" and the rejection students as "notably restless". These two groups of students in the present study received the lowest scores on the calm dimension but the "conditional" rejection students' scores were not as low as previous findings would suggest for true rejection students. Pamela (Case 23), one of the rejection girls did receive a 7 on the calm attribute but Sonia (Case 26) on the basis of having her in the class for less than a month, was assessed as 4 by the teacher. The two indifference girls were rated as less calm by the teacher than the three indifference group boys. The concern group students received an assessment of 6 uniformly.

The teacher rated the 13 girls in the class (2.76) as calmer overall than the 13 boys in the class (3.30) resulting in a class mean score of 3.04 for this descriptor.

#### Noticeable

The noticeable descriptor (Item #12 on the 13 Attribute Scales) was worded "not noticeable versus stands out, very noticeable". Table 13

presents the teacher-assigned scores for the four attitude-to-student groups and for the class in general.

Table 13  
ATTITUDE GROUP SCORES FOR THE NOTICEABLE ATTRIBUTE

Noticeable			
first 3 choices	1.7	girls	boys
attachment	2.2	2.5	1.87
indifference	4.8	4.5	5.0
rejection	2.5	2.5	-
concern	3.0	5.0	2.0
whole class	2.80	3.0	2.61
A score of 1 is high.			

The lowest overall score on this dimension was received by the indifference group students as verified in previous research. (Brophy and Good, 1974:133). This attribute is one of the major descriptors of indifference children and was originally thought (by Silberman, 1969) to be the main reason why teachers interacted so infrequently with this group of students. Within-group differences show that the three indifference boys (5.0) are even less noticeable to this teacher than the two indifference girls (4.5).

Attachment boys (1.87) were rated as more noticeable than attachment girls (2.5) and the two concern boys were seen to be much more noticeable than Bonnie, the only concern girl.

Generally all boys in the class (2.61) were assessed by the teacher as more noticeable than all girls (3.0) in the class in keeping with previous research findings (Brophy and Good, 1974:231).

### Eye Contact

Item # 13 on the 13 Attribute Scales was "averts eyes versus looks you straight in the eye." The lowest scores went to the indifference students on this trait. The indifference boys (4.0) averted their eyes even more than the indifference girls (3.5). Brophy and Good (1974: 153 ) had described how the indifference students "notably avoided eye contact." Scores for the attitude groups for eye contact are presented in Table 14.

Table 14

ATTITUDE GROUP SCORES FOR THE EYE CONTACT ATTRIBUTE

Eye Contact			
first 3 choices	1.3	girls	boys
attachment	1.6	1.62	1.62
indifference	3.8	3.50	4.0
rejection	3.5	3.5	-
concern	3.3	3.0	3.5
whole class	2.38	2.30	2.46

Attachment boys and girls received equal scores on this dimension while concern and rejection group scores were almost as low as scores received by indifference groups. Overall the boys and girls in the class were rated fairly evenly on this measure.

### Attractiveness

The "unattractive versus attractive" measure was Item #8 on the 13 Attribute Scales. Scores received by the different attitude groups and the class as a whole are presented in Table 15.

The class average for all 26 students was 1.65 with the boys somewhat higher than the girls in perceived attractiveness. The first three attachment students were given the highest possible scores as were



Table 15  
ATTITUDE GROUP SCORES ON THE ATTRACTIVENESS ATTRIBUTE

first 3 choices	1.0	girls	boys
attachment	1.2	1.37	1.0
indifference	2.8	2.0	3.33
rejection	1.5	1.5	-
concern	2.3	4.0	1.5
whole class	1.65	1.69	1.61

the eight attachment boys (who included two of the three first choice attachment students). Attachment girls were seen as a bit less attractive.

Rejection group girls were rated higher than the class average. The concern group average is lower than class average because the score assigned to Bonnie was 4 compared to the two concern boys' scores averaging 1.5.

Indifference children were seen by the teacher as the most unattractive group and received an average score of 2.8 on this measure. The three indifference boys (3.33) were perceived by the teacher to be far less attractive than the two indifferent girls (2.0).

#### Happy

The teacher assigned ratings for how "happy" he perceived the children to be. This measure appeared as Item #3 on the 13 Attribute Scales and was worded simply as "unhappy versus happy." The resulting group averages are presented in Table 16.

The teacher rated the attachment group high on this attribute with no differentiation between the attachment girls and the attachment boys. Indifference group average for this attribute was below the class average with indifference girls rated as less happy than the three

Table 16

## ATTITUDE GROUP SCORES ON THE HAPPY ATTRIBUTE

first 3 choices	1.3	girls	boys
attachment	1.5	1.5	1.5
indifference	3.6	4.0	3.3
rejection	5.0	5.0	-
concern	5.7	7.0	5.0
whole class	2.65	2.84	2.46

indifference boys. The individual scores of 3 and 7 in the rejection group averaged out to 5 for the two members of the group. The concern group averaged 5.7 for although both Bonnie and Ian received a teacher rating of 7 for being happy, Tom (Case 15) was assigned a higher score of 3 for this dimension. Poor achievers tend to be unhappy and this is partly due to a lack of success in their school work. Two of the three concern children were affected by additional problems which accounted for the teacher-assigned scores of 7 for these two students.

All girls in the class were rated as a bit less happy (2.84) than the 13 boys (2.46) in this study.

## SUMMARY

The 16 attachment students in the present study were of average age, were assigned high expectancy scores for achievement in both subject areas, were rated as highly intelligent, mature, cooperative, and attractive. The teacher assigned high scores for their work-related behavior and effort expended. In short they were model students who behaved well, tried hard, and were seen as having academic potential.

The first three choices of attachment students received even higher scores on all measures and a general positive halo effect appeared to be associated with these children.

The five indifference students were younger than most children in the class, were perceived to have lower than average ability, and received lower than average achievement expectancy scores. They were perceived to be less persistent, careful, and motivated. The teacher felt that members of this attitude group were not making an adequate effort. They were viewed as less cooperative and mature than most children in the class. They received very low scores for being noticeable, maintaining eye contact with the teacher, and for being liked by the teacher.

The two conditional rejection girls were viewed as attractive, fairly noticeable, uncooperative, immature and restless. They received low scores on the work-related attributes as little effort on their part was perceived by the teacher. He was, however, very concerned about their academic progress. He held low achievement expectations for them. They were not well-liked by the teacher and were seen to be basically unhappy students.

The three concern students were perceived to exhibit very poor initiative and poor work habits and were assigned low achievement expectancy scores by the teacher. Generally speaking they were immature and uncooperative and fairly unhappy. The teacher's concern for their mental and academic well-being was considerable. Two of the three students had emotional problems that required patience and understanding which the teacher seemed willing to provide. They received higher scores on

"wanting to keep" attribute than either the indifference or rejection students and were perceived to be in need of constant encouragement which appeared to result in sporadic bursts of effort on their part.

In general the descriptions of the four groups tended to confirm findings from many other studies and it would appear that characteristics of students such as their effort and cooperation appeared to elicit specific affective reactions from the teacher in this study.

CHAPTER V  
EXPECTANCY EFFECTS

This chapter presents the results of the search for any product expectancy effects and/or any process expectancy effects in operation in this study. By examining the relationships among different kinds of data collected, certain trends were noted and speculations are offered for their possible cause.

PRODUCT EXPECTANCY EFFECTS

- 2.1 What evidence is there, if any, of product expectancy effects? What is the relationship of teacher-held expectancy to end of the year achievement results?
  - 2.11 for students assigned to high, middle, and low "probable highest achiever" levels (for general achievement in all subjects)?
  - 2.12 for students assigned to high, middle, and low "probable achievement in language arts" levels?
  - 2.13 for "good" and "poor" reading groups?
  - 2.14 for students assigned to high, middle, and low "probable achievement in math" levels?
  - 2.15 for boys and for girls?
  - 2.16 for the four attitude-to-student groups?

The Product Measures

In expectancy research, "product" or "outcome" measures are frequently the scores received on a standardized test. The particular product scores used in this study were the scores obtained on school system-developed tests in language arts and math which were administered to all students in Grade 3 in Edmonton in the spring of 1979. The student subjects in this study, who could be described as middle-high S.E.S. children with an average I.Q. score of 112, would be expected to score well on these tests compared to the larger student population in the city.

In language arts the class mean of 63.3 (out of a possible 77; S.D. 8.84) for the "comprehension" section was well above the test mean of 56.3 (S.D. 12.1) for the "decoding" section of the language arts test the class mean was 57 (out of a possible 63; S.D. 4.62) compared to the test mean of 50 (S.D. 7.38). The actual percentage scores derived from these tests ranged from 66 to 98 and the average class percentage mark was 85.1% in language arts.

In math the class mean was 56.2 (out of a possible 60; S.D. 3.52) compared to the test mean of 48.3 (S.D. 9.13). The percentage scores in math ranged from a low of 80 to 100 and the class average percentage mark was 93.6%. This suggests that the "product" measures available to the researcher did not provide much discriminatory information about the students in this class since the student subjects scored so well on these tests. This was especially so in math. However, these were the only product measures collected and are consequently the ones used in the analyses in this study.

### Expectancy Measures

The teacher provided general overall performance expectancy ("probable highest achiever") scores for all students and also the more subject-specific performance expectancies for math and language arts achievement. These three lists differed as the students were regrouped to reflect the teacher's different subject area expectations for them.

Originally the expectation data were gathered by having the teacher assign the students to one of seven distinct clusters on a class ranking form for math and language arts. In the case of the probable highest achiever attribute measure the teacher assigned each student to a

point along a line continuum ( which was later converted to a numerical score from one to seven). These 1-7 expectancy scores were collapsed into "high", "middle", and "low" ratings by combining scores of 1 and 2 for "high", scores of 3, 4, and 5 for "middle", and scores of 6 and 7 for "low". The membership in the three groupings for each expectancy measure changed slightly as the teacher regrouped the students to reflect his specific expectancies for "probable highest achiever", "probable achievement in math", and "probable achievement in language arts".

#### Overall General Expectancy and Product Expectancy Effects

As recorded in March, the "probable highest achiever" (#4 Attribute) provided an indication of how the teacher anticipated the students would perform on overall achievement in all subject areas. It was a general prediction of probable achievement and was not subject-specific. The possible expectancy scores ranged from 1 (highest) to 7 (lowest).

Table 17 shows the achievement (product) scores received in language arts and math on the end of the year exams by these "high", "middle", and "low" probable highest achievers.

Table 17  
PROBABLE HIGHEST ACHIEVER GROUPS AND PRODUCT SCORES

Probable Highest Achiever Groups	Language Arts Scores	Mathematics Scores
High N=12	92.9%	97.5%
Middle N=10	80.5%	89.8%
Low N=4	73.0%	91.0%

The range in language arts achievement scores is about 20 points across the three levels of expectancy and about 7.5 points in math achievement. The teacher's predictions seem more accurate in the language arts area than for math.

### Language Arts Expectancy

A more precise expectancy prediction for language arts achievement was obtained when the teacher ranked the students for "probable achievement in language arts". The membership in these "high", "middle", and "low" language arts expectancy groups was roughly the same as the three groupings in the "probable highest achiever" rankings. The correlation between the two sets of rankings was strong ( $r=.9110$ ,  $p<.001$ ). Table 18 presents the results of the language arts exam for the three language arts expectancy groups.

Table 18  
LANGUAGE ARTS EXPECTANCY GROUPS AND PRODUCT SCORES

Language Arts Expectancy Groups	Language Arts Achievement Scores		
		Girls	Boys
High N=8	93.6%	94.0% N=3	93.4% N=5
Middle N=12	* 86.2%	87.8% N=6	84.5% N=6
Low N=6	* 71.5%	72.7% N=4	70.0% N=2

When examining the actual language arts scores achieved by each expectancy group a range of 22 points can be noted between the highest group average and the lowest group average. When grouped this way the girls' scores ranged over 11 points and the point spread for the boys' scores is 23.



### Reading Groups Expectancy

The 26 students in the three above language arts expectancy groupings were placed into two reading groups for parts of the language arts instructional program. These groups have been labelled the "good" and "poor" reading groups for discussion purposes. The average language arts expectancy scores and the actual language arts achievement scores received by members of these two reading groups are of interest and are presented in Table 19.

Table 19

#### READING GROUPS' EXPECTANCY SCORES AND ACHIEVEMENT SCORES

Reading Groups	Language Arts Achievement Score	Language Arts Achievement	
		Girls	Boys
Good Group	90.3% N=17 E=2.5	91.0% N=7 E=2.6	89.8% N=10 E=2.5
Poor Group	75.2% N=9 E=5.9	76.8% N=6 E=5.6	72.0% N=3 E=6.3
All 26 Students	85.1% N=26 E=3.7	84.5% N=13 E=4.0	85.7% N=13 E=3.4

Overall the teacher expected the 13 boys (E=3.4) to achieve better language arts scores than the 13 girls (E=4.0), which they did. Upon close examination of the sub-groupings it was noted that the teacher expected the 10 "good" reading group boys to achieve slightly higher scores than the 7 "good" reading group girls (which they did not) and the teacher expected that the three "poor" reading group boys would receive lower language arts scores than the six "poor" reading group girls (which they did). The resultant difference between the averages

of girls' marks (comparing the two reading groups) was 14 points and slightly more for boys, comparing the average boys' marks in the two reading groups, at 18 points.

The result of comparing these language arts expectancy groupings, including both reading groups, with the end of the year achievement scores could be summarized as follows. In March the teacher reported his expectation that the boys' end of the year achievement in language arts would be more varied in range than the girls' which turned out to be the case. His predictions, when compared with the "product" measures, which determined the "accuracy of prediction", produced the following negative and significant correlations (1 was the highest score in expectancy ratings):  $r = -.893$ ,  $p < .001$  for the whole class;  $r = -.9294$ ,  $p < .001$  for boys only; and  $r = -.8661$ ,  $p < .001$  for girls only. In other words, the teacher was fairly accurate in his expectancy predictions for language arts achievement, especially for boys.

#### Math Expectancy

Initially the teacher ranked all 26 students for "probable achievement in math" by assigning them to one of seven clusters on the ranking form. The resultant numerical scores were collapsed into "high", "middle", and "low" groups (as described above) for math expectancy. The membership in these groups was roughly the same as for the language arts expectancy groups. The membership correlation between the two groups was  $.8100$ ,  $p < .001$  and between the math expectancy groups and the "probable highest achiever" groups was  $.8500$ ,  $p < .001$ .

The scores attained by the students belonging to these three math

expectancy groups are presented in Table 20 as well as the average expectancy (E) rating for each group.

\* One boy in the "low" math expectancy group moved away in the spring before the math tests were taken. This is the only data missing from his file and although he is excluded from the math analyses, his data is included in all other analyses in the study.

Table 20

## MATH ACHIEVEMENT SCORES OF MATH EXPECTANCY GROUPS

Math Expectancy Groups	Math Achievement Scores		
		Girls	Boys
High	*97.5% N=8	98.5% N=4	96.3% N=4
Middle	94.0% N=13	93.2% N=6	94.7% N=7
Low	85.0% N=4	84.0% N=3	88.0% N=1*
All 25 students	93.6% N=25 E=3.6	92.7% N=13 E=3.7	94.7% N=12 E=3.5

The specific math expectancy scores were more accurate for predicting math achievement than were the more general "probable highest achiever" ratings (See Table 17). The difference in average math achievement scores across the three math expectancy groupings was 12.5 points. For girls in particular, the average group scores differed by 14.5 points and for boys across all three groups, about 8 points. The teacher held a slightly higher average math expectancy for the 13 boys (E= 3.5) compared to the 13 girls (E= 3.7). The boys did perform slightly better overall, but less well than the girls in the high math expectancy group in particular.

The correlations for these math expectancy predictions (gathered in March) compared to the end of the year math achievement test scores were  $-.7622$ ,  $p < .001$  for all 26 students;  $-.6643$ ,  $p < .009$  for boys; and  $-.8027$ ,  $p < .001$  for the girls. Thus the teacher was somewhat less successful in predicting math achievement scores than he was in predicting language arts achievement scores. Looking only at math predictions, the teacher was more accurate in predicting the girls' math achievement than in predicting the math achievement scores which the boys would receive.

#### Attitude-To-Student Groups and Expectancy

The 26 student subjects had been placed in one of the four attitude-to-student groups by the teacher. In earlier studies which investigated teachers' attitudes towards students, as few as one student was nominated to each group and the resultant findings tended to be fairly clear-cut. Very briefly, students assigned to the four attitude-to-student groups often possessed the following characteristics (Willis and Brophy, 1974: 520):

Attachment - model students, high achievers, who respond warmly.

Concern- low achievers, dependent on the teacher, making extensive but appropriate demands, receiving most total interaction.

Indifference- recipients of low rates of interaction and teacher apathy, passive, often display poor attitudes to school (no universal characteristics really).

Rejection- often low achievers, behavior problems, defiant.

By asking the teacher to place all 26 students into the four groups the more prevalent attitude group expectancy effects may have been somewhat obscured but general trends may indicate an expectancy effect

due to placement in certain attitude-to-student groups. By regrouping the students this way and again looking at their expectancy scores in language arts and math and their achievement scores in the same subjects a more complex set of relationships develops because the interaction of expressed teacher attitude-to-student with sex of student, expectancy scores for students, and achievement scores received by students has been taken into account.

A separate analysis was carried out for the "first three attachment choices" because of the larger number of students (16) assigned to the attachment group. The information pertaining to expectancy and achievement in language arts for the attitude-to-student groups is presented in Table 21.

Table 21

## ATTITUDE GROUPS' LANGUAGE ARTS EXPECTANCY AND ACHIEVEMENT SCORES

Attitude to Student Groups	Language Arts Expectancy and Achievement Scores		
		Girls	Boys
All Attachment Students	89.4% N=16 E= 2.8	88.0% N=8 E=3.3	90.9% N=8 E=2.4
First Three Choices Attachment	93.3% N=3 E=1.3	98.0% N=1 E=1	91.0% N=2 E=1.5
Indifference Students	78.7% N=5 E=4.6	73.5% N=2 E=6	82.3% N=3 E=3.7
Rejection Students	79.0% N=2 E=4.5	79.0% N=2 E=4.5	0
Concern Students	76.3% N=3 E=6.3	89.0% N=1 E=5	70.0% N=2 E=7
All 26 Students	85.1% N=26 E=3.7	84.5% N=13 E=4.0	85.7% N=13 E=3.4

On average the teacher held a higher expectancy ( $E=3.4$ ) for boys than for girls (4.0). Within the attitude-to-student groups he assigned much higher language arts expectancy scores ( $E=2.4$ ) for the eight boys to whom he was "attached" than to the eight "attachment" girls (3.3). The attachment boys scored 90.9% on the language arts exam compared to the 88.0% language arts score received by the eight attachment girls, thereby confirming his prediction.

Within the attachment group itself, the language arts expectancies held for the "first three choices" were considerably higher ( $E= 1.3$ ) as were their achievement scores averaging 93.3%, than the whole attachment group's expectancy scores and language arts achievement scores; and these, in turn, were higher than scores for all other attitude groups.

It is of interest to note that one "concern" girl, Bonnie (Case #18), who scored 89%, was in the concern group primarily because the teacher was concerned about her emotional and social development. These factors plus medical problems interfered with her academic development. The teacher recognized her strengths in the language arts area and assigned her an expectancy score of 5.

Generally speaking "indifference" students were average ability students, not obviously different from fellow students who were assigned instead to the attachment group. One might speculate that by being placed into the "indifference" group that a student is likely to be assigned a lower expectancy score and subsequently the student is likely to receive a lower "product" achievement score (about 11 points lower in the case of the indifference students in language arts achievement in the present study). Thus assignment into certain attitude-to-student

groups may function as an expectancy of its own and may serve to influence the academic expectancy that the teacher develops for a particular student. Willis and Brophy (1974:527) suggested that the sheer personal reactions and feelings towards students held by the teacher can influence expectancy ratings for these students.

The attitude-to-student groups were re-examined similarly in terms of the math achievement information. Sex differences within attitude groups were noted again as well. The resulting average scores for both math expectancy and math achievement by the attitude-to-student groups are presented in Table 22.

Table 22

## ATTITUDE GROUPS' MATH EXPECTANCY AND ACHIEVEMENT SCORES

Attitude to Student Groups	Math Expectancy and Achievement Scores		
		Girls	Boys
All Attachment Students	96.5% N=16 E=2.5	96.9% N=8 E=2.5	96.1% N=8 E=2.5
First Three Attachment Choices	98.3% N=3 E=2	100% N=1 E=1	97.5% N=2 E=2.5
Indifference Students	92.4% N=5 E=4.4	91.5% N=2 E=5.0	93.0% N=3 E=4.0
Rejection Students	83.5% N=2 E=5.5	83.5% N=2 E=5.5	∅
Concern Students	84.0% N=2 E=7	80.0% N=1 E=7	88.0% N=1 E=7
All 26 Students	93.6% N=25 E=3.6	92.7% N=13 E=3.7	94.7% N=12 E=3.5

The overall scores on the math exam ranged from 80% to 100% with an average class mark of 93.64%. In math, between-group differences were not as pronounced as in language arts. Overall the teacher expected the boys ( $E=3.5$ ) to achieve higher marks in math than the girls ( $E=3.7$ ), which they did.

It is notable that the only "concern" girl, Bonnie, received the lowest score of the class on the math exam and had been assigned an expectancy score of 7 by the teacher compared to her higher expectancy and achievement scores in language arts (see Table 5-5).

The indication is not as strong for math as for language arts that the product expectancy effect is in operation. The average scores for the different attitude-to-student groups reflect some differences but stronger main effects may remain undetected because of the lack of discriminatory power of the product measures and because of the large number of students assigned to certain attitude-to-student groups.

#### Summary of Product Expectancy Effects

The teacher did hold differing performance expectations for the 26 students in his class. He held an average higher expectancy for boys for both language arts and math achievement and they did achieve better average scores in both academic areas than the girls in this study. This trend differs from most previous research findings as noted by Brophy and Good (1974:204):

...when a sex difference is operating it appears that teachers are more likely to overrate the intelligence and potential of girls and underrate the intelligence and potential of boys.



Brophy and Good continue (p.231):

These findings are remarkably consistent across many different studies by many different investigators, and they stand as general sex differences. However, there is an additional complication which we have alluded to at times but have not specifically discussed: teachers' expectations and attitudes usually interact with the level of achievement of boys much more than with the level of achievement of girls. Thus, for example, while boys in general are more salient in the classroom, the high achieving boys tend not only to be more salient, but to be seen as active, well-adjusted, successful, and generally positive in the eyes of the teacher. The low achieving boys are also more salient, but they tend to be seen as lazy, immature, maladjusted, and troublesome.

By comparing the teacher's general expectancy for all academic subjects for the "high", "middle", and "low" groups on the "probable highest achiever" measure with the end of the year marks, the results show this was a better projective indicator for language arts achievement than for math achievement. The more specific "probable achievement in language arts" and "probable achievement in math" expectancies provided much better predictive accuracy with the respective end of the year tests.

The teacher was able to make more accurate predictions in the language arts area and although the boys' results were more wide-spread, he was able to predict their particular language arts achievement better than for girls. Conversely in math he was far less accurate in his predictions for boys' achievement in math.

By regrouping the students into attitude-to-student groups and by comparing average attitude group expectancy scores with average attitude group achievement ("product") scores, the results indicate that teacher predictions were accurate. Likewise general accuracy is noted in the

math expectancy scores held for the attitude-to-student groups.

However, in math two "first choice attachment" boys and one "concern" boy performed surprisingly better than the teacher-held expectancy would indicate. In March the teacher had intimated the possibility that Tom (Case #15) should repeat Grade 3. In a June interview the teacher explained how much more effort Tom had been making of late and how much better he was progressing academically.

Overall the teacher held fairly accurate expectancies in March for the results his students would achieve on the end of the year exams in the academic subjects of language arts and mathematics.

#### PROCESS EXPECTANCY EFFECTS

If teacher behavior has the potential of communicating differential performance expectations to students (as Lockheed, 1976:15 and Cooper, 1977:419 have suggested) then process expectancy effects can be said to be occurring. For instance, teacher behavior such as the selection of students into different reading groups could be considered as a process expectancy behavior. In this section only the teacher's verbal behavior is considered. Aside from the actual words the teacher may use to communicate a direct expectancy message to the student, more subtle forces are at work during verbal exchanges with the teacher and his class.

Often students in a classroom do not receive equal amounts of verbal interaction or the same quality of verbal interactions from the teacher (Haigh, 1974:104; Brophy and Good, 1974:14; and Firestone and Broudy(1975:544). Several reasons may account for this fact; The

student may display certain characteristics ("attributes") such as shyness or aggressive behavior which might provoke two different verbal reactions from the teacher. The teacher may hold different affective feelings ( or "attitudes") toward students but may not realize that he is actually avoiding some, criticizing others, and spending a large proportion of class time enjoying exchanges with others. Research has shown that the sex role behavior of girls in elementary school is usually more compliant and conforming than that of boys and that the resultant higher percentage of verbal interaction with boys may be in reaction to their more unpredictable behavior (Brophy and Good, 1974: 229).

Most teachers hold private differing performance expectations for the students in their classrooms but certain teachers tend to reveal these expectations through the amount and kind of verbal interaction they exchange with individual students. Researchers (Brophy and Good, 1974:330; Haigh, 1974:98; and Muttart, 1977:128) have found that overt communication of expectancies is exhibited in varying degrees by different teachers. The teacher who has a working knowledge of naïve psychology and who is aware of the "expectancy" phenomenon is often on guard against exemplifying it in his own teaching and is able to correct the natural human tendency to react to others on the basis of performance expectations held for them. Smith and Luginbuhl (1976:267) and Brophy et al (1976:46) emphasized the need for making teachers aware of their natural tendency to treat high and low ability students differentially.

Brophy and Good (1974:114) described three types of teachers in the attempt to explain why some teachers are more susceptible to displaying expectancy effects. The overreactive teacher notes the existing differences

in students, keeps these expectations rigid and acts in a way that further exacerbates these differences in students. The expectancy effect would be most obvious with this type of teacher. The reactive teacher gives and takes in his dealings with the students allowing some to dominate and some to recede from the verbal limelight. His behavior is somewhat controlled and influenced by the actions and characteristics of the students with whom he is interacting. "If the teacher merely passively reacts to the differential pressure that different students give her, she will be spending most of her time with boys" (Brophy and Good, 1974:234). Traces of the expectancy effect can be found with the reactive teacher. Brophy and Good (p.327, and preface p.viii) claimed that most teachers would fall into this "reactive" category. The proactive teacher is also able to assess differences in students and does hold differing performance expectations for the students in her room but is able to keep these perceptions in check while compensating for student differences and is able to diagnose and prescribe what is best for each student, purposely minimizing personal affect towards the student and controlling and shaping student behavior in order to challenge each student academically in the most beneficial way. Each of these three types of teachers holds performance expectations for her own students but each reveals these privately-held convictions to varying degrees. Due to time pressures, complexity in the classroom, the amount of their teaching experience, and the degree of their awareness of the expectancy effect, most teachers would fall into the reactive category.

It appears from research studies that the degree to which expectancy effects are exhibited is quite unique to each teacher. Haigh (1974:98) speculated that "one reason for negative findings in some studies may be that teacher expectancy operates as an idiosyncratic effect" dependent on a wide variety of factors.

To the extent that they are communicated, performance expectancies self-perpetuate because the student learns to conform to them over time. It may be that the age of the student is one factor that allows the effect to operate. Kester and Letchworth (1972:54) who conducted a study of expectancy at the junior high school level, suggested that "associated with the idea of the younger child being more susceptible to the teacher's expectations is the idea that the teacher may be seen as a more valuable source of rewards in the lower grades, where in the seventh grade, students may be less anxious to conform to teacher expectations."

Also these revealed expectancies communicate information to peers in the classroom. Research has indicated that student peers have fairly accurate perceptions of which class members get the most verbal attention, and what kind of attention (Silberman, 1969:405). This has the side effect of shaping peer behavior toward the individual student who is the recipient of teacher-communicated expectancies. Silberman (p.406) maintained that although the teacher's remarks are aimed at one pupil, they are overheard by all pupils and tend to guide the perceptions of all and the behavior towards those students by peers. Nash (1976:28) asked 30 students (aged 12 years) to rank order each other by ability. He found a considerable degree of shared perception among teacher and pupils.

Dusek (1975:680) described the expectancy effect as the functional relationship between the teacher's own self-generated expectancies and the student's academic achievement.

To the extent that the teacher self-generated expectancy, as reflected in class ranking, is based on sound objective data regarding student abilities, then the teacher is not biasing the student's education. Rather the teacher's differential behavior toward the student in the classroom may reflect effective teaching-style differences for students with differing needs.

It is to these differential teaching behaviors, or process expectancy effects, which seem to have been exhibited in the present study that the discussion turns.

#### Process Expectancy Measures

As mentioned above the assignment of students into one of two reading groups is, in itself, a kind of process expectancy effect. Any differential teacher behavior exhibited toward these two groups was noted.

The teacher's dyadic verbal interaction with each of the 26 students in the class was examined and the data was used to develop 26 individualized profiles of this interaction in the subject areas of language arts and math and in the three grouping modes of "individual", "small group", and "whole class" teaching situations. It is these dyadic verbal interactions between the teacher and the individual student that serve as the process expectancy effect measures in the present study. Thus it was possible to consider whether process expectancy effects were in operation with a particular student (see Chapter VI ) and combine and re-combine individual profiles into the several grouping patterns as in the previous section on product expectancy effects.

For 35 of the 60 variables on the DIOS (dyadic interaction observation system) the frequencies for each individual student were calculated. As a result, ratio percentage scores were derived by dividing the actual number of pupil responses by the total possible student opportunities to respond. A tailor-made computer program was used to adjust for any student absences so the student's ratios used were truly the ones operating for the times the particular student was present during instruction when the dyadic verbal interaction data was collected.

If all 26 students had been present for all interaction observed and if equal amounts of verbal interaction had been received by all students, each student would have a ratio of 3.8 on each variable on the DIOS instrument. However, due to the adjustments that were made to account for absences the class average ratios for these variables are often somewhat higher, in the 4.2% range.

In all, 2715 separate interactions were recorded over 25.35 hours of classroom instructional time in language arts and math combined and over the time period extending from March 1 until May 16, 1979. In language arts specifically, 1524 interactions were recorded representing 14.85 hours of language arts instructional time and 1191 interactions were collected during 10.5 hours of math instructional time. The 2715 provided the opportunity that each student might have as many as 100 interactions with the teacher which might be assumed to provide an indication of the typical dyadic verbal interaction received by the child over the school year.

For each student's verbal file, ratios for specific verbal categories were calculated for "combined subjects' instructional time", for "language arts time" (further subdivided into eight different types of language arts lesson settings) and for "math instructional time" (further subdivided into five different types of math instructional settings). For each student the summary totals of these ratios were also subdivided into "individual", "small group", and "large group" settings. Therefore, if a certain student received a high percentage of interaction during math lessons such as many "process questions", many "behavioral reminders" or "Sinitis" (student-initiated) it could be determined whether most of these occurred in the "individual" (one-to-one private) grouping mode or whether most of it took place during "whole class" instruction.

All of the above considerations of how teacher expectations might be communicated to students gave rise to Research Question 2.2, the communication of these expectancies to students.

- 2.2 What evidence is there, if any, of process expectancy effects?
  - 2.21 for students assigned to high, middle, and low "probable highest achiever" levels (for general achievement in all subjects)?
  - 2.22 for students assigned to high, middle, and low "probable achievement in language arts" levels?
  - 2.23 for "good" and "poor" reading groups?
  - 2.24 for students assigned to high, middle, and low "probable achievement in math" levels?
  - 2.25 for boys and for girls?
  - 2.26 for the four attitude-to-student groups?



By concentrating on sex differences, other more influential causes of differential verbal interaction are temporarily disregarded. (These sex differences are examined first and reappear in subdivisions in the expectancy groups examined later). However the results of looking for sex differences on eleven summary interaction variables with both subject areas' data combined produced a fairly conclusive set of findings which are presented in Table 23.

The boys incurred a greater percentage of verbal interaction for all eleven types of interaction. On a straight comparison by sex, the 13 boys in this classroom did receive more total dyadic verbal interaction than the 13 girls in the class.

Table 23

## SEX DIFFERENCES AND THE PROCESS EXPECTANCY EFFECT

Type of Verbal Interaction	Girls, N=13	Boys, N=13
Total Interaction	3.74	4.61
All Tinitis	3.62 *	4.75
Process Questions	3.57	4.68
Product Questions	3.78	4.57
Get Attention Qu.	2.80	5.61
Behavioral Reminders	3.34	5.11
Teacher Comments	3.54	4.96
Sustaining	4.01	4.40
Tinit Praise	3.91	4.56
Tinit Criticism	3.67	4.72
All Sinitis	3.94	4.34

O

Attitude-To-Student Groups and the Process Expectancy Effect

The four attitude-to-student groups received differing amounts and kinds of verbal interaction as in other studies (Good and Brophy, 1972:620 and Good and Brophy, 1974:130). The average of the summary types of dyadic verbal interaction are presented in Table 24.

Table 24

ATTITUDE GROUPS AND AMOUNT AND KIND OF VERBAL INTERACTION RECEIVED

Verbal Interaction Variables	Attitude-To-Student Groups				
	Attachment	First Three Choices	Indifference	Concern	Rejection
Total Interaction	4.08	4.73	3.40	5.50	4.85
All Tinitis	3.87	4.57	3.76	6.10	4.90
All Process Questions	4.77	5.50	2.90	3.80	2.45
All Product Questions	3.96	4.07	4.00	5.70	4.05
Get Attn Questions	3.62	4.87	2.84	8.07	6.60
Behavioral Reminders	3.46	5.70	3.66	6.80	7.90
All Sustaining	3.93	4.07	4.78	4.07	5.25
All Sinitis	4.53	5.03	2.74	4.17	4.50

The concern group got the most total interaction (5.03) (as Silberman, 1969:406, had found) and the indifference group got the least (3.40). Specific kinds of verbal interaction were more prevalent with certain groups. As might be expected, rejection students received the highest number of behavioral reminders and the most criticism. One of the two students in this group, Sonia, was the new

student who joined the class in April (see Case Study #26). She received a considerable number of verbal interactions from the teacher who was in the process of trying to assess her academic standing and who purposely sought her out in math to try and determine the extent of her knowledge here. Although he was satisfied that she fitted in well in the language arts area he felt concerned that she was far behind the rest of the class in math. As a result the average math Tinitis for the rejection group are 5.80 in math compared to the attachment group average of 3.63. The rejection group averages in certain types of verbal interaction may have been higher because of this reason.

The concern group were the recipients of the most Tinitis (6.10) overall. Many of these fell into categories like Get Attention Questions (8.07), Behavioral Reminders (6.80) or Teacher Comments (8.17). Compared to the attachment group (3.96) they received a greater percentage of all Product Questions (5.70). This was particularly true in math (6.33). For the total Process Questions however the concern group received 3.80% compared to the attachment group average of 4.77% and the first choice attachment group average of 5.50. However the amount of Process Questions directed at the concern group depended on the subject area for they received 7.86% Process Questions during math instruction compared to the 2.33% of Process questions they received during language arts instruction.

Within the attitude-to-student groups sex differences were noted favoring the boys who received greater amounts of the various types of verbal interaction from the teacher. Both attitude group differences and sex differences are to be kept in mind when considering the other factors which seemed to influence this teacher and his dyadic verbal interaction

with the students in his classroom. Additional differences in the amount and kind of verbal interaction received are due to the differential expectations the teacher held toward class members and these are considered next.

#### General Academic Performance Expectancy and Process Expectancy Effects

The "probable highest achiever" rankings reflected the teacher's overall achievement expectancy for his students. It is a predictive measure for general achievement in all school subjects. The verbal categories presented in Table 25 are the general summary verbal categories that combined instructional time from both subject areas. Trends can be noted that seem to favor the highest expectancy group on several verbal dimensions. Haigh (1974:104) found a significant relationship between teacher rankings and the number of teacher-initiated contacts with students. He concluded that the quantity of verbal interaction was influenced by teacher expectations.

In their review of the research on expectancy, Smith and Luginbuhl (1976:265) cited studies concerned with how teacher expectancy affected interaction patterns. Some found quantitative differences (Jeter, 1972; Rothbart et al, 1971) and others found qualitative differences as well (Beez, 1970; Brophy and Good 1970; Rosenthal and Jacobson, 1973. Good, 1970:192; Rubovits and Maehre, 1971). Cooper (1977:470) agreed that teacher expectancy for students contributed to feedback and interaction differences exhibited when dealing with students in the classroom.

Firestone and Broudy (1975:544) felt that a "knowledge of interaction patterns significantly increased one's ability to predict academic

performance independently of I.Q." which suggested the process expectancy effect role of verbal interaction in the classroom.

Table 25 presents the total verbal interaction percentages received by high, middle, and low general performance expectancy groups on the "probable highest achiever" measure.

Table 25

## GENERAL ACHIEVEMENT EXPECTANCY AND PROCESS EXPECTANCY EFFECTS

Verbal Interaction	Probable Highest Achiever Groups								
	High	girls	boys	Middle	girls	boys	Low	girls	boys
Total Interaction	4.00			3.50			5.20		
All Tinit	4.0			3.86			5.40	3.90	6.90
Process Q.	5.3	*		3.16	Math Tinit		3.85*		
							3.05	1.85	4.25
Product Q	4.00			4.00	Math Process		2.65		
							4.50	3.20	6.35
Get Atn Q	3.67			3.26			8.23		
Behavioral Reminders	3.69	2.56	4.50	3.67			7.23	6.45	8.00
Teacher Comments	3.33		*	4.19			7.18		
Sustaining	3.88			4.61			4.17		
Tinit Praise	3.81			4.50			4.85	3.25*	6.45
Tinit Crit	4.00			3.44	1.93	5.70	6.68		
All Sinit	4.67			3.07			5.20		

The data in Table 25 show that the low group got the most verbal attention but a high percentage of this was correctional for maintaining good behavior or for focusing attention on the lesson. When the data for the most instructional kind of verbal interaction, the process question, are averaged across subject areas and students, the low group received the smallest amount (3.05%). Upon closer examination one would find that process questions in math accruing to the boys in this same low group averaged 9.70% but this information becomes lost in general averaging. The low group received the most praise and criticism and it initiated (Sinitis) the greatest amount of interaction with the teacher. By contrast the high group received the greatest amount of the process questions overall and the least amount of praise.

The three sets of expectancy rankings (for general highest achiever, for achievement in language arts, and for achievement in math) were roughly the same in membership but some students occupied quite different place orders on these lists. The correlations for the lists for rank order of group membership were in the .8 range.

The scores received by the high, middle, and low groups on this general expectancy ranking reflect differential interaction patterns. However in this study this general ranking compared to the summary verbal interaction categories, while it does reveal some differences, masks some interesting subject area differences which can be picked up by comparing the subject-specific expectancy rankings with the respective subject area verbal interaction data.

Language Arts Expectancy and Process Expectancy Effects

It was decided that looking for any differences among high, middle, and low language arts expectancy groups using only the data collected during language arts instruction would be appropriate. The verbal interaction data is presented in Table 26. For each group an average score was computed. The groups were further sub-divided by sex (see Table 27 so any within-group sex differences could be detected.

Table 26

LANGUAGE ARTS, EXPECTANCY AND PROCESS EXPECTANCY EFFECTS

Language Arts Interaction Variables	Language Arts Expectancy Groups		
	High	Middle	Low
Total L.A. Interaction	5.21	3.34	4.18
L.A. Tinitis	4.76	3.73	4.01
L.A. Process Q	6.42	3.79	1.52
L.A. Product Q	5.08	3.78	3.50
L.A. Get Attn Q	4.08	2.09	7.30
Behavioral Reminders	3.46	3.41	6.42
L.A. Long Duration	5.20	3.79	3.92
L.A. Explanation	2.89	4.39	6.53
L.A. Comments	3.20	3.19	6.03
L.A. Sustain	4.93	3.99	3.10
L.A. Tinit Praise	4.48	4.01	4.13
L.A. Tinit Criticism	3.76	2.70	7.35
L.A. Sinitis	6.18	2.51	4.53
L.A. Sinit Prai	5.95	1.77	6.27
L.A. Sinit Crit	3.13	2.78	8.33
L.A. Achievement Scores	93.62%	86.16%	71.50%

Language Arts Interaction Variables	Language Arts Expectancy Groups											
	HIGH	girls	boys	MIDDLE	girls	boys	LOW	girls	boys			
Total L.A. I/A	5.21	5.13	5.26	3.34	2.83	3.88	4.18	3.45	5.65			
L.A. Tinitis	4.76	4.56	4.88	3.73	3.06	4.40	4.01	3.15	5.75			
L.A. Process Q	6.42	6.83	6.18	3.79	2.91	4.66	1.52	1.13	2.30			
L.A. Product Q	5.08	5.36	4.92	3.78	3.55	4.01	3.50	2.70	5.10			
L.A. Get Atn Q	4.07	0.0	6.52	2.09	0.0	4.18	7.30	6.25	9.40			
Behavioral	3.46	2.63	3.96	3.40	2.23	4.58	6.41	5.67	7.90			
L.A. Long	5.20	5.06	5.28	3.79	3.00	4.58	3.91	2.12	7.50			
L.A. Explain	2.89	1.96	3.44	4.39	4.96	3.81	6.53	4.07	11.45			
L.A. Comments	3.29	2.53	3.76	3.18	1.78	4.60	6.03	4.98	8.15			
L.A. Sustain	4.92	5.40	4.64	3.99	3.53	4.45	3.10	2.15	5.00			
L.A. Tinit Prai	4.47	4.16	4.66	4.00	3.35	4.66	4.13	3.57	5.25			
L.A. Tinit Crit	3.76	2.93	4.26	2.70	2.20	3.20	7.34	8.07	5.90			
L.A. Sinitis	6.17	6.23	6.14	2.51	2.33	2.70	4.53	4.07	5.45			
L.A. Sinit Prai	5.94	4.93	6.56	1.77	1.68	1.85	6.26	4.62	9.55			
L.A. Sinit Crit	3.12	0.0	5.00	2.78	5.55	0.0	8.33	12.5	0.0			

Table 27

LANGUAGE ARTS EXPECTANCY AND PROCESS EXPECTANCY EFFECTS



In Table 26 the high language arts expectancy group received a great deal more total language arts interaction than the middle group; in particular, more Tinit, more #2 Tinit-Process questions (significantly more than either of the two groups), more #1 Tinit-Product Questions (significantly more than either of the other two groups), more praise, more sustaining behavior. By contrast the low language arts expectancy group received less of the above variables but did receive more overall Tinit criticism, Sinit criticism, and more explanation, behavioral reminders and more Get Attention Questions.

The middle language arts expectancy group received less total language arts interaction than either the high group who got the majority of the process and product questions or lows who received the most teacher comments, behavioral reminders and get attention questions. The middle group also received less Tinit and Sinit praise and criticism than either group especially in comparison with the high expectancy group.

Table 27 presents the same information but sex differences within the three groups are noted. In the high group although boys generally receive the higher percentage of verbal attention it is interesting to note that the high girls outscore the high boys in the number of process and product questions they receive in language arts as well as more sustaining behavior from the teacher. Girls in the high group required no get attention questions and fewer behavioral reminders than the boys in the high group.

Compared to the boys in the same group the girls in the middle language arts expectancy group received less of most verbal interaction, none of the get attention questions, but did receive more explanations. The girls in the high and middle language arts expectancy groups appeared,

from this data, to be exhibiting cooperative classroom behavior for the most part while data from the boys in the high and middle groups suggest more misbehavior although they received both more praise and criticism from the teacher.

The greatest sex differences within groups occurred in the low language arts expectancy group. Here significant differences were found in the number of product questions, explanations, and in the length of the interactions, with the boys receiving many more of these. Overall the boys in the low group received (5.65) more total interaction in language arts than the girls (3.45), more language arts tinitis (5.75) than the girls (4.01), more process questions (2.30) than the girls (1.13), and more behavior related interaction as well. Looking only at the data collected one could speculate that the low girls in language arts were not challenged to the same extent academically as the boys in the low language arts group, for on the instructionally related verbal behavior such as process questions, product questions, sustaining, explaining and praise they received much lower amounts. It is notable that they did receive more Tinit (8.07) and Sinit (12.5) criticism than the boys (Tinit= 5.90 and Sinit=0.0 respectively).

#### Reading Groups and the Process Expectancy Effect {

Members from the middle language arts expectancy group either joined the high group to form the "good" reading group or the low group members to form the "poor" reading group. Trends remain generally the same as for the three language arts expectancy groups. Although the poor group received more total language arts interaction and more language arts Tinitis, these contacts were managerial in nature with get attention questions, behavioral

Table 28  
 READING GROUPS AND PROCESS EXPECTANCY EFFECTS

Language Arts Interaction Variables	READING GROUPS					
	Good Reading Group			Poor Reading Group		
	N=17	Girls N=7	Boys N=10	N=9	Girls N=6	Boys N=3
Total L.A. Interaction	4.04	3.67	4.31	4.23	3.41*	5.87
L.A. Tinitis	4.07	3.54	4.44	4.20	3.32*	5.97
L.A. Process Q	5.07*	4.75	5.29	2.20	1.53	3.53
L.A. Product Q	4.20	3.97	4.36	3.96	3.40*	5.10
L.A. Sustain	4.42	4.30	4.51	3.41	2.65	4.93
L.A. Explain	3.41	4.01	2.98*	6.34	3.93*	11.06
L.A. Comments	3.29	2.52	3.83*	5.00	3.43	8.13
Behavioral Reminders	3.21	2.17	3.94*	5.83	4.80	7.90
Tinit Praise	4.00	3.30	4.50	4.51	3.97	5.60
Tinit Crit	3.67	3.14	4.05	4.90	5.38	3.93
L.A. Sinitis	4.00	3.90	4.08	4.30	3.61	5.66

reminders and criticism accounting for this greater percentage. The more instructionally oriented interaction such as process questions, product questions, and sustaining was accorded to the good group in large measure.

Within-group sex differences were more apparent in the poor reading group with boys receiving more of all types of interaction except for criticism.

The group membership of 17 in the "good" reading group was predominantly of attachment students, except for one rejection girl, Sonia (the new girl), and three indifference boys. The group of nine students in the "poor" reading group was comprised of one rejection

girl, three concern children, two indifference children, two attachment children, and one conditional attachment boy, Nicholas. Therefore since part of the differential interaction afforded both groups is believed to be influenced by the teacher's affective response (attitude) toward the student (see Table 21) it is not overly surprising to find that the good group, made up mostly of high-achieving attachment students, should receive more interaction of the instructional type and the poor reading group who were mostly low achievers and children belonging to attitude groups other than attachment should be the recipients of more overall interaction, often involving non-academic matters. Perhaps as a compensatory measure, the teacher directed more praise to the poor reading group which also received more overall criticism.

Thus for the language arts interaction the amount and kind of interaction received depends very much on the way the children are grouped. A general statement concerning girls would be that the highest language arts expectancy girls were challenged to a greater extent with academic questions than high expectancy boys but when the two reading groups' girls are compared, the girls in the good group do not appear to receive as many process and product questions. The four girls in the lowest language arts expectancy group received a minimal number of process questions and a significantly lower number of product questions than their boy counterparts. Although two girls joined the low expectancy girls to form the poor reading group, the results are much the same.

Girls seemed to receive a lesser amount of various types of interaction from which they might have benefitted academically. In addition, they received more criticism than praise. Conversely, the boys for whom he held a low language arts expectancy seemed to receive compensatory attention. The teacher provided proactive behaviors to assist low expectancy boys achieve better results in language arts but seemed to neglect the low girls in various ways which led the researcher to speculate that a negative process expectancy effect was in operation for the low girls during language arts instruction.

#### Math Expectancy and Process Expectancy Effects

The verbal interaction for the high, middle, and low math expectancy groups appears in Table 29. Most of the total math interaction was received by members of the low math expectancy group. In particular, they received the most math process questions, the most math product questions (significantly more than the high group received), the most sustaining and the most explaining. They received the most praise and the least amount of criticism. In addition, they continued to receive the most non-academic kinds of verbal interaction; namely behavioral reminders and get attention questions.

The high math expectancy group received the fewest number of product questions, sustaining, explaining and praise interaction, fewer process questions than the low group and they received a lot more criticism than praise overall.

The middle group varied in the amount of certain kinds of math interaction it received. The group received the most criticism of all

Table 29

MATH EXPECTANCY GROUPS AND PROCESS  
EXPECTANCY EFFECTS

Math Verbal Interaction Variables	MATH EXPECTANCY GROUPS		
	High, N=8	Middle, N=13	Low, N=4
Total Math I/A	4.13	3.82	5.66
All Math Tinitis	3.84	3.88 *	6.12
Math Process Q	4.53	3.68	6.16
Math Product Q	3.53 *	4.12	5.88
Math Get Atn Q	5.03	2.83	6.88
Behavioral	4.90	3.23 *	6.30
Math Long Duration	1.49	5.14	6.01
Math Explain	1.14	4.34	9.96
Math Comments	3.85 *	3.60 *	7.14
Math Sustain	3.66	4.65	5.18
Math Tinit Prai	2.86	4.42	6.04
Math Tinit Crit	4.45	4.92	2.24
Math All Sinitis	4.89	3.67	4.38
Math Sinit Prai	5.30	2.55	5.88
Math Sinit Crit	7.09	1.28	6.68
Math Achievement	97.37% *	94.00% *	85.00%

three groups, the lowest amounts of behavioral reminders and get attention questions and the least amount of math interaction overall.

Within-group sex differences for math expectancy groups are presented in Table 30. General sex differences were overshadowed by group differences although boys in all three math expectancy groups received more total interaction and more total math Tinitis. However, some interesting within-group sex differences occurred. The low group

Math Interaction Variables	MATH EXPECTANCY GROUPS									
	HIGH	girls	boys	MIDDLE	girls	boys	LOW	girls	boys	
Total Math Interaction	4.13	3.75	4.50	3.82	3.77	3.86	5.66	4.40	7.55	
All Math Tinitis	3.84	3.55	4.13	3.88	3.62	4.10	6.12	4.50	8.55	
Math Process Q	4.53	4.18	4.88	3.68	4.48	3.30	6.16	3.80	9.70	
Math Product Q	3.53	3.70	3.35	4.12	3.70	4.71	5.88	4.43	8.05	
Math Get Atn Q	5.03	5.95	4.10	2.83	1.82	3.70	6.88	1.67	14.70	
Behavioral	4.90	3.50	6.30	3.23	2.07	4.24	6.30	4.93	8.35	
Long Duration	1.49	1.03	1.95	5.14	6.23	4.20	6.01	4.50	10.55	
Math Explanation	1.14	0.95	1.33	4.34	5.72	3.16	9.96	6.60	15.00	
Math Comments	3.85	2.73	4.98	3.60	3.23	3.91	7.14	5.30	9.90	
Math Sustaining	3.66	3.60	3.73	4.65	5.82	3.64	5.18	4.80	5.75	
Math Tinit Prai	2.86	3.88	1.85	4.42	4.02	4.76	6.04	4.50	8.35	
Math Tinit Crit	4.45	4.83	4.07	4.92	1.73	7.64	2.24	1.87	2.80	
Math All Sinitis	4.89	4.30	5.48	3.67	4.15	3.26	4.38	3.97	5.00	
Math Sinit Prai	5.30	4.15	6.45	2.55	2.77	2.37	5.88	6.10	5.55	
Math Sinit Crit	7.09	4.18	10.00	1.28	2.78	0.0	6.68	5.57	8.35	
Math Achievement	HIGH= 97.37%			MIDDLE= 94.00%			LOW= 85.00%			

Table 30

MATH EXPECTANCY GROUPS AND PROCESS EXPECTANCY EFFECTS

boys received 14.7% of the Get Attention questions compared to the 1.67% received by the low math expectancy girls. The low group boys also received much more instructional interaction with 9.70% for Process questions and 8.05% for Product questions than the girls who received the respective scores of 3.80% and 4.43% for the same variables. The boys received twice as many explanations and interactions of long duration than the girls in the low group received.

A reverse trend of that encountered in language arts interaction seemed to be operating for math interaction. More instructional verbal interaction (Process and Product questions) was accorded the low math expectancy group. The comparison of averages for the subject areas of language arts and math are presented in Table 31.

#### Subject Area Interaction Differences.

For six of the seven interaction variables represented in Table 31, the high group in language arts received the greatest percentage and the low group in math received the greatest percentage. Only in the Sinit category did the highs continue to maintain the greatest amount for both subject areas. Brophy and Good (1974:103) had noted that high expectancy students manage to create more response opportunities for themselves by initiating them. Brophy and Good (1974:336) stated that "teachers usually do not compensate for differences in student initiation rates so that highs receive noticeably more teacher contact." Hence differences are allowed to widen. "Teachers enjoy contact with high group students. These contacts are rewarding and they subtly condition and reinforce teacher behavior."



Table 31

## EXPECTANCY GROUP SCORES FOR LANGUAGE ARTS AND MATHEMATICS

LANGUAGE ARTS		MATHEMATICS	
Language Arts	5.21 High	Mathematics	4.13 High
Total Interaction	*3.34 Middle	Total Interaction	3.82 Middle
	4.18 Low		5.66 Low
Language Arts	4.76 High	Mathematics	3.84 High
Tinits	3.73 Middle	Tinits	*3.88 Middle
	4.01 Low		*6.12 Low
Language Arts	6.42 High	Mathematics	4.53 High
Process Questions	*3.79 Middle	Process Questions	3.68 Middle
	*1.52 Low		6.16 Low
Language Arts	5.08 High	Mathematics	3.53 High
Product Questions	*3.78 Middle	Product Questions	*4.12 Middle
	*3.50 Low		5.88 Low
Language Arts	4.93 High	Mathematics	3.66 High
Sustaining	3.99 Middle	Sustaining	4.64 Middle
	3.10 Low		5.18 Low
Language Arts	4.48 High	Mathematics	2.86 High
Tinit Praise	4.01 Middle	Tinit Praise	4.42 Middle
	4.13 Low		6.04 Low
Language Arts	6.18 High	Mathematics	4.88 High
Sinits	*2.51 Middle	Tinits	3.66 Middle
	4.53 Low		4.38 Low
Language Arts	93.62 High	Mathematics	*97.37 High
Achievement	*86.16 Middle	Achievement	*94.00 Middle
	*71.50 Low		*85.00 Low

Perhaps because more "quality" instructional interaction (Process questions, Product questions, and Sustaining behavior) was directed at the low group in math, the range in average achievement scores was less for math (12 points) than for language arts (22 points). Perhaps because of the grouping patterns utilized for language arts instruction, the teacher's mental set towards the two different reading groups may have contributed to the resultant differential treatment received. Perhaps remedial teaching in math may be easier generally and the skills required for remedial work in language arts may be

more complex. At any rate, and for whatever reason, there was a difference in both the quality and quantity of interaction directed towards high and low groups in the two subject areas.

It was found that the middle groups in both subject areas either received an amount between the average high group and low group scores or received the lowest amount of interaction for all variables.

Brophy and Good (1974:341) sum up the differing teacher treatment of highs and lows as follows:

Highs receive better treatment in part because of their own behavior and their general attractiveness to teachers. Teachers may have some minor aversions to selected lows, but a major related problem is that they do not possess specific and effective skills for dealing with failure. Their own resultant uneasiness and their students' discomfort in public situations subtly encourages teachers to avoid students who fail frequently and/or to react emotionally to their failure with sharp criticism. Furthermore, since classrooms are so busy and teachers possess few conceptual labels for monitoring their own behavior, teachers are largely unaware of their behavior. This lack of awareness allows the process to continue so that, ultimately, teachers overreact to student behavior (anticipating failure and so on).

#### A Contingency Model for Expectancy Effects

When differences for sex were examined for this class, it was found that there was a difference in the amount and kind of verbal interaction recorded, and that difference favored the boys.

When interaction was examined from the perspective of attitude-to-student groups, differences in the amount and kind of interaction were again found. For example, attachment students received more Process questions, concern students received more Product questions as well as more overall interaction, and indifference students often

received the least amount of interaction for the variable under consideration.

Differences in the amount and kind of interaction were found for the three levels of expectancy for both subject areas and in addition these differences appeared to be unique to the subject area.

Many different variables appeared to be operating to produce process expectancy effects in this classroom. It was as if dyadic interaction was based on a contingency model. For example, if a student were a low expectancy girl in language arts, she would likely receive few Process questions (for, in addition, she would automatically be a member of the "poor" reading group). If a student were a low expectancy math girl, she would receive a much higher percentage of Process questions as the teacher concentrated on looking for students who needed help in this subject area. If the student were a boy, but also a low expectancy math student, he would receive more Process questions because the teacher tended to interact more frequently with boys in both subject areas.

No simple explanation of expectancy effects could describe the interaction pattern in this classroom satisfactorily, if indeed a pattern exists. In this study support exists for sex differences in interaction favoring boys (Brophy and Good, 1974:297), for attitude-to-student differences favoring concern children and avoiding indifference children (Brophy and Good, 1974: 125 and 140), for high, middle, and low expectancy differences in general achievement and in language arts (Haigh, 1974:109 and Brophy and Good, 1974:14) and for these reverse results with high, middle, and low math expectancy

Figure 1

CONTINGENCY MODEL OF EXPECTANCY EFFECTS

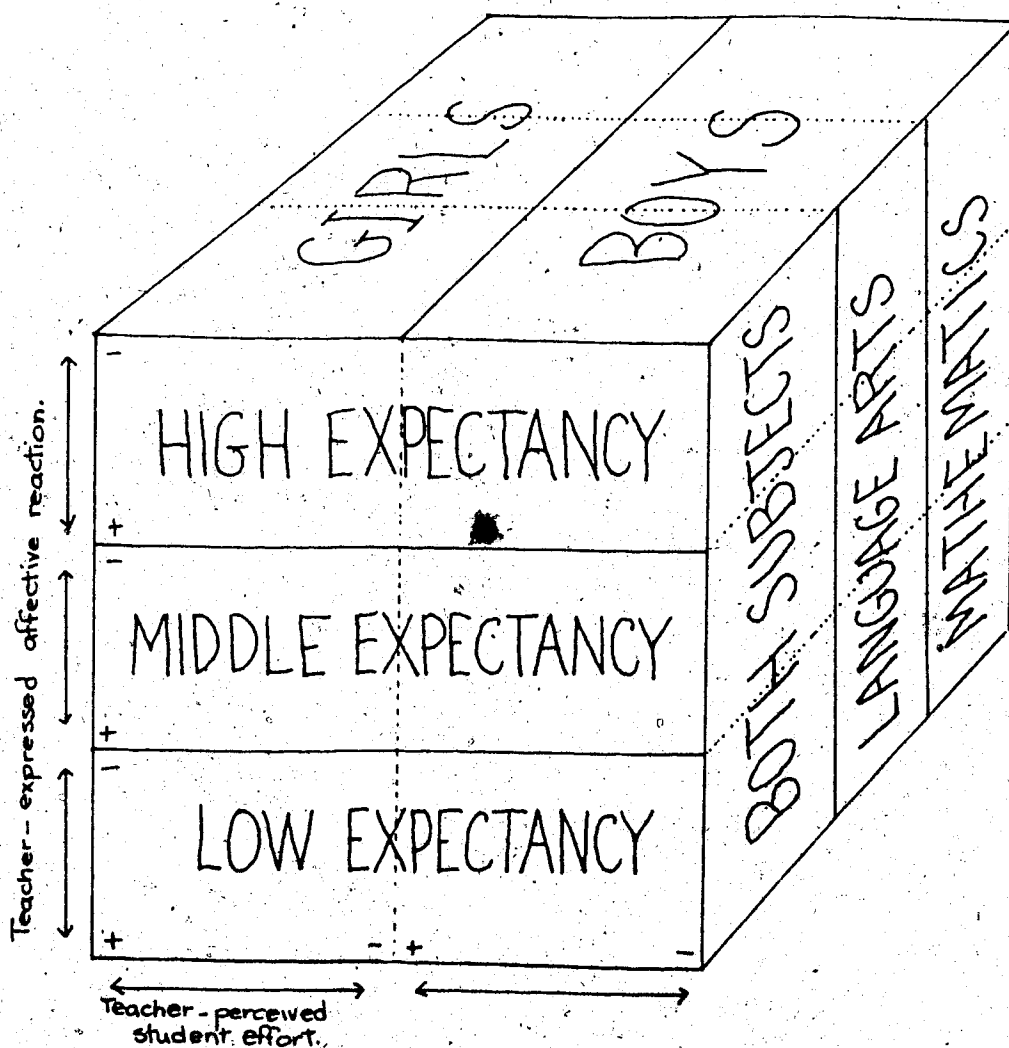
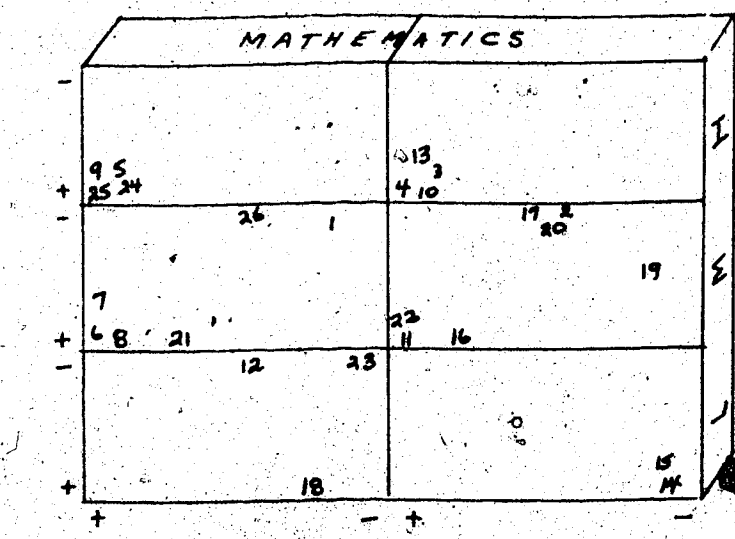
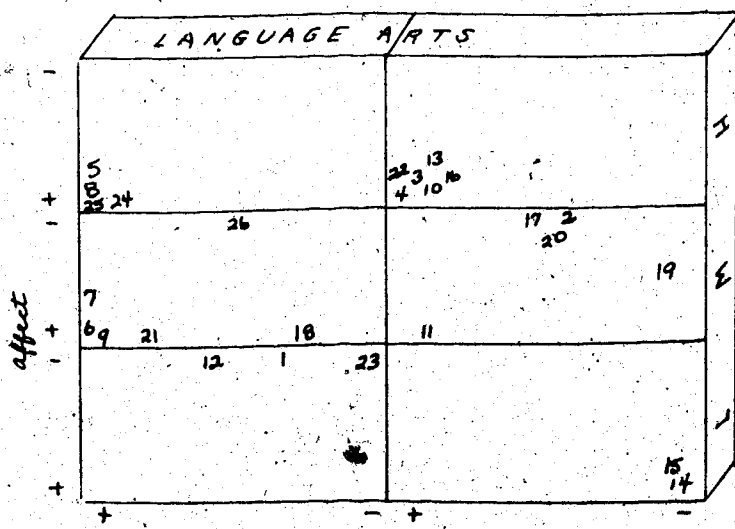
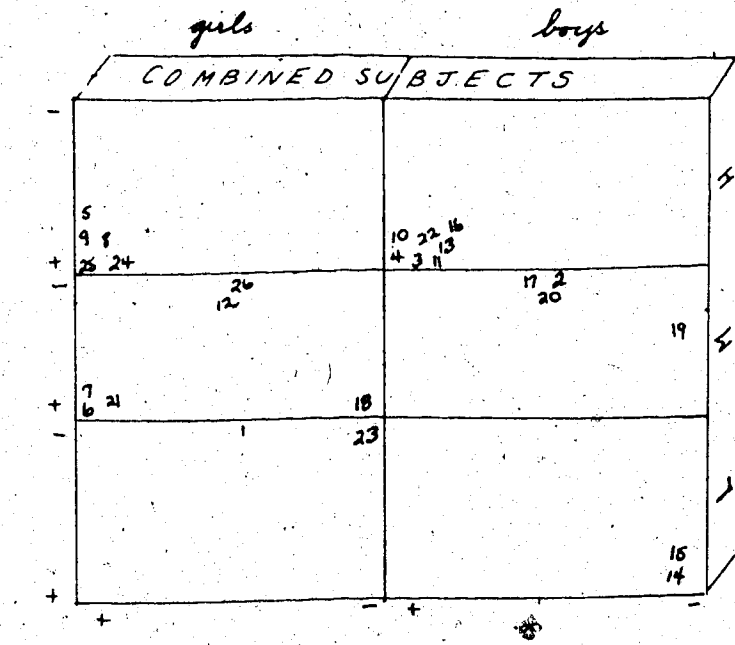


Figure 2



effects (Good and Grouws, 1977:52). Singly each explanation is much too simplified, for it appears that the interaction of all these factors acted to individualize the treatment given to each student, which, in turn, resulted in differing averages for the various groups. Brophy and Good (1974:327) hinted at the need for adopting an eclectic approach when examining this research area:

It has been argued that teachers' expectations other than their expectations for individual students need to be studied, and that a combination of general affective and cognitive expectations is more likely to predict teacher behavior than a single set of expectations.

While the following proposition may still be an overly simplified way of looking at this phenomenon of process expectancy effects in this classroom and the ways in which this teacher treated each student, it is offered as an attempt to visualize the interaction among the variables which all contribute to the process expectancy effect (see Figure 1).

The model presented in Figure 1 presents a Contingency Model for Process Expectancy Effects. By viewing its three dimensions it may be possible to speculate whether this combination of factors serves to explain process expectancy effects in operation generally and for this classroom under study in particular. Sex differences are reflected vertically, subject area differences by the third dimension and levels of expectancy are depicted in horizontal layers. Attitude-to-students is represented by a plus to minus continuum which represents "attachment" to "concern" to "indifference" to "rejection" and this is placed vertically within each layer of expectancy. The perceived effort of the student as reported by the teacher and calculated by taking an average of scores assigned for

"motivation to do school work", "persistence" and "careful, deliberate worker" is reflected on a plus to minus continuum running horizontally across each layer of expectancy stopping in the middle to reflect sex differences. In Figure 2 the three subject area settings (combined, language arts, and math) have been separated in order to plot each student's position using information provided by the teacher on all of these dimensions. This diagrammatic plotting indicates that although the three configurations are basically the same, there are certain differences seemingly contingent on instructional setting.

#### SUMMARY

The first section of this chapter presented a series of findings suggesting the existence of product expectancy effects in the classroom. Teacher-provided expectancy scores for students individually and for groupings were compared to their end of the year achievement marks and positive correlations were found for both language arts and math.

In the second section of the chapter, process expectancy effects were noted by examining the quantity and quality of verbal interaction exchanged between the teacher and members of high, middle, and low expectancy groups, reading groups, attitude to student groups, and the individual student.

It appeared as if expectancy effects were in operation to a certain degree in this classroom but were contingent on various factors. A model showing these factors in interaction helps to describe the contingency basis on which expectancy effects seemed to operate in this particular classroom.

## CHAPTER VI THE STUDENT PROFILES

In this chapter all 26 case studies are presented. These individual student descriptive profiles were developed by combining all teacher-provided data about each student and the additional data about each student that was obtained during the three month study.

In the first general interview, conducted in March, the teacher was asked to describe each individual student. In the first three weeks of the study the teacher was requested to rank order all students in the class on six ranking scales which included both expectancy and attribute measures. He was asked to rate each student individually on 13 additional student attribute measures. During the course of the study as comments were made about students either during stimulated recall interviews or during general interviews, they were recorded, transcribed, and eventually combined with numerical data concerning the particular student. At the end of the study, data on achievement, I.Q. and age were added to the file information. As the study progressed certain students were selected for more intense observation in order to determine their rate of engagement (or time on task) during ongoing classroom instruction. Where available, this information in percentage form has been included in the case study profiles.

In the first part of each case study both the numerical scores and the comments provided by the teacher are interwoven in the attempt to describe each student as the teacher perceived him or her. Such information, presented in narrative form, includes the teacher's expectancy for the student's achievement, ratings on the various personality attributes, teacher-expressed affect toward the student, and teacher comments that helped to explain and corroborate the ratings given.



Additional information about age, I.Q. and achievement is then presented. Selected aspects of the dyadic verbal interaction exchanged by this particular student and the teacher are presented in the form of percentage ratios and are summarized in table form. A discussion of the information in the case study follows and briefly integrates the characteristics pertinent to the student himself and to his relationship with the teacher.

Table 32 presents each of the "rankings" which appear in numerical form ( a score of 1 to 7) in each of the student profiles. A brief description of what each of the six measures represents is included as well as the class average score for each of the six rankings.

Table 32  
THE SIX RANKING SCALES

Descriptor Label	Class Average	More Complete description
probable achievement in language arts	3.69	How well the teacher expected the student to perform on end of the year language arts tests.
probable achievement in math	3.62	How well the teacher expected the student to perform on end of the year math tests.
general intellectual ability	3.77	The teacher's assessment of the relative intelligence of the student compared to his classmates.
cooperation (I)	3.85	How cooperative and compliant and conforming the student was to classroom procedures and rules.
maturity (1)	3.69	how mature the teacher felt the student was in relation to his classmates
motivation to do school work	3.50	The teacher's assessment of the the student's apparent motivation.

Table 33 presents the brief descriptor used for each of the 13

attribute scales, the class average for each of the 13 attributes, and the descriptive sentence presented to the teacher about each of the 13 attributes.

Table 33  
THE THIRTEEN ATTRIBUTE SCALES

Descriptor Label	Class Average	Definition of each attribute to be rated from 7 (low) to 1 (high).
calm	3.04	Restless, highly active versus calm, good self control.
careful	2.96	Careless, hasty worker versus careful, deliberate worker.
happy	2.64	Unhappy versus happy.
probable highest achiever	3.31	Probable lowest achiever versus probable highest achiever.
mature (II)	3.08	Immature versus mature.
cooperative, (II)	2.50	Uncooperative, defiant versus cooperative, compliant.
creative	3.04	Non-creative or unimaginative versus creative and imaginative.
attractive	1.65	Unattractive versus attractive.
persistent	2.88	Gives up easily, needs to be prodded versus tries hard, persistent worker.
like to keep	2.69	Would like to have removed from class versus would like to keep for another year for the sheer joy of it.
of concern	4.65	Doesn't require special attention versus concerns me a great deal. I would like to be able to devote much more attention.
noticeable	2.81	Not noticeable versus stands out, very noticeable.
Eye contact	2.38	Averts eyes versus looks you in the eye.

The twelve dyadic verbal interaction ratios that have been included in each student's profile in table form are explained briefly in Table 34.

Table 34  
DYADIC VERBAL INTERACTION VARIABLES

Descriptor	Definition
All Tinit	all teacher-initiated (Tinit) interactions which included the six question types and teacher comments making seven types of Tinit overall.
Product Q	A Product question was one of the seven types of teacher-initiated interactions which asked a factual question.
Process Q	A Process question was one of the seven types of teacher-initiated interactions and which required that the student integrate facts in order to explain the question asked. It was considered to be a higher level question.
Get Atn Q	A Get Attention question was one of the seven types of teacher initiated interactions which was primarily designed to recapture the student's lagging attention. It was often anticipated in advance by the teacher that the student would not be able to answer the question because of inattention.
Comments	A comment was one of the seven types of teacher-initiated interactions that was not a question and which often included a behavioral reminder, praise, criticism, or some personal observation.
Sustaining	Sustaining behavior referred to the fact that further probing questions had been asked following an initial question, either because the initial question had been answered incorrectly or because the teacher wanted to extend the answer given.
Tinit Prai	Tinit Praise refers to praise received by the student who had successfully responded to one of the six question types or who had received a comment from the teacher about the positive evaluation of his work and/or effort.
Tinit Crit	Tinit criticism was received by the student in the context of a teacher-initiated question or comment and was a negative evaluation of either his work or effort expended.
Behavioral	Behavioral reminders occurred when the teacher found it necessary to comment on a student's classroom behavior.
All Sinit	All Sinit refers to all student-initiated verbal interactions which included both questions and comments.
Ss Accepted	Sinit accepted refers to the ratio of student-

	initiated questions or comments accepted by the teacher in comparison to all of the Sinitis posed by the student to the teacher which were ignored, delayed, or not accepted.
Total Verbal	Total verbal refers to the total, across both subject areas, including all Tinitis and Sinitis, amount of dyadic verbal interaction in which the student was involved.

#### DYADIC VERBAL INTERACTION VARIABLES

The average class score for most of these dyadic verbal interaction variables across the three subject area settings (math, language arts, and both subjects combined) was between 4.1% and 4.2% in the majority of cases. Individual student's scores can be set in perspective by keeping that class ratio in mind.

It can not be stated strongly enough how deeply grateful the researcher was for the candid honesty and full cooperation of this teacher without whom the study would not exist. Such information was elicited on the assurance that it would be treated confidentially and used for research purposes so his contribution can not be acknowledged in a more direct way. The student subjects were assigned pseudonyms and identity numbers in the interests of confidentiality. These identity numbers were used for the purpose of brevity when recording the rapid-paced live verbal interactions and for later analysis purposes.

It is assumed that the teacher provided his honest reactions and assessments of the students in his classroom. The researcher had every reason to believe that he did so once a comfortable and trusting rapport had been established and anonymity was assured.

One reason for obtaining the teacher's perceptions of his students using varying methods was to be able to determine how consistently the

numerical scores were substantiated and corroborated by his expressed thought processes about students during actual instruction, and also by his general comments about them. This information was also compared to the more objective information about the student and to the dyadic verbal interaction experienced by the student.

The major reason for obtaining his perceptions of students is the premise that a teacher acts on the basis of his perceptions of students and a knowledge of these may help to explain the teacher's treatment of individual students.

The length of each case study is a source of information in itself. In addition to the basic information provided by the teacher for each student, differences occurred in the amount of additional information the teacher was willing and able to provide about the student. This may be indicative of the relative salience of certain students in the classroom.

In order to help to counteract the effect of 'first impressions' the reader might form, it should be noted that coincidentally Case studies #1 and #2 were about students who belonged to the indifference group and some negative impressions about them are expressed. Although these teacher impressions seemed to be well justified, they were not characteristic of the ways in which he viewed most members of the class.

The final case (Case #26) in the chapter concerns a girl who joined the class about one month after the study had commenced. The researcher deemed this an opportune occasion to collect the thoughts about this student as the teacher formed his opinions about her. The case study is therefore longer as more time was spent talking about the formation of his impressions and the information and cues he used

in doing so. Of particular interest are both the gradual change in his affective reaction to her from the time she entered the study to the time the study ended and also the reasons provided for the eventual shift in his feelings toward her.

These case studies of the individual students in the class were the 'building blocks' for the class grouping patterns considered elsewhere . The knowledge that the individual characteristics of students become lost when combined with those of other students into group scores led the researcher to develop these individualized profiles which are of interest in themselves and which contain the information which was combined in various ways with other students' data to attain group scores which were also of importance in the study.

The teacher described her as a moderately "noticeable (4) and "attractive" (3) little girl. Her parents (one of whom was a teacher) were interested in her progress. She was socially unpredictable in that she occasionally became "negative towards friends and school work" and was a bit "sneaky" at times. The teacher found her a little "enigmatic" overall. He rated her as fairly "unhappy" (6).

Partly because she was "quiet" and he did not "find her personality as attractive as some of the others" he considered placing her in either the rejection or the indifference group. He assigned a 4 in "wanting to keep for another year". However he decided that the "indifference" category, minus the provided definition, for he felt he could judge her academic ability and achievement level) seemed a more appropriate placement. He felt she was a student who actively rejected teacher overtures by "groaning when asked to do something" and by "seldom approaching tasks with any enthusiasm". She was habitually late coming into a group which he interpreted as "attention-seeking behavior." The type of behavior was exhibited "frequently enough that it was off-putting." She was not a frequent volunteer. Not surprisingly he ranked her low on two separate ratings of "cooperativeness/compliance" (6 and 6). Overall he felt "sort of blah about her" and claimed she did not "stand out in class either positively or negatively."

His assessment of her "general intellectual ability" (6) was low as was the rating for "creativity" (6). His expectation for her as a "probable highest achiever" was low as well (6) as was his expectation for her achievement in language arts (6) but was higher for her "probable achievement in math" (4). She was in the lower reading group.

He felt the work related attributes (calm (5), careful/deliberate worker (6) and persistence (6)) were consistently low and he noted that "she needed quite a bit of direction... reinforcement... and attention." His perception of her time on task depended on the task in question. For example he claimed "she is not a good attender in language arts." The teacher assigned 6 and 6 for the two ratings for "maturity". The teacher was very "concerned" (1) about her academic progress.

Additional Data

age: 8 years 10 months (mean 8 years 7 months)

I.Q.: Verbal 97 (mean 112.7)  
 Quantitative 101 (mean 112.6)  
 Non-Verbal 104 (mean 111.5)

Achievement: Language Arts 81 (mean 85.07)  
 Math 98 (mean 93.64)

In June..."She's always done quite well on math."

Time on Task

	Teacher Directed	Self-Paced	Total
Lang Arts	94% 3.63 hours	64% 2.76 hours	81% 6.4 hours
Math	93% 1.6 hours	72% 2.36 hours	80% 3.9 hours
Combined Subjects	93% 5.23 hours	68% 5.13 hours	81% 10.36 hours

Engaged time data show that she kept on task better during independent math activities than for independent language arts activities.



Verbal Interaction Data:

Sharon	Language Arts	Math	Both Subjects
All Tinit	3.3	3.5	3.4
Product Q	2.6	3.9	3.2
Process Q	2.5	3.9	3.0
Get Atn Q	0.0	0.0	0.0
Comments	4.0	2.1	3.1
Sustaining	3.8	5.2	4.3
Tinit Praise	1.6	4.0	2.6
T. Criticism	5.9	0.0	3.6
Behavioral	3.9	0.6	2.5
All Sinit	6.1	3.6	5.1
Ss Accepted	25/29	10/11	35/40
Total Verbal	4.2	3.5	3.9

The teacher's lower assessment of her general intellectual ability (6) seemed to be substantiated by her I.Q. scores. He recognized her better performance potential in math by assigning a higher expectancy rating in this subject area. He felt she was "not a good attender in language arts." She did achieve a very high math mark on the math achievement test but a lower than average mark on the language arts test. She belonged to the poor reading group who as a group made lower language arts marks. The behavioral reminders (3.9) and the Tinit criticism (5.9) she received in language arts did not occur during Math instruction. No Get Attention Questions were received by her at all so these interactions were because of behavioral infractions. More praise (4.0) was received during math instruction than during language arts (1.6) instruction. More Product questions (3.9) and Process questions (3.9) were asked of her during math compared with the

language arts Product questions (2.6) and the language arts Process questions (2.5) she received. Both averages here were well below the class mean of 4.11 and 4.07 for language arts Product and language arts Process questions respectively.

Overall she received (3.4) a less than class average amount (4.18) of Tinitis and more of the Tinitis she received occurred in private settings than in public settings. She initiated (5.1) more Sinitis than the class average of 4.1. Almost twice as many of her Sinitis were in language arts. The 9.4 Sinit rate that occurred in language arts private settings compared to her L.A. public Sinitis (2.2) was frequently a result of her inattention during the giving of directions for independent L.A. work activities.

Overall her verbal interaction average was slightly less than class average. She was involved in more language arts interactions because of a high percentage of Sinitis in private L.A. settings.

Case #1  
Sharon  
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STUDENT: 1  
TOTAL INTERACTIONS: 2715. INTER-N'S PUPIL PRESENT: 2715. RATIO: 1.000 Sharon was present for all verbal data collection.

LAT: V57	V60	V62	V85	V86	V87	V119	V28	V29	V30	V31	V32	V33	V34	V35	V36	V37	V38	V39	V40	V41	V42	V43	V44	V45	V46	V47	V48	V49	V50	V51	V52	V53	V54	V55	V56	V57	V58	V59	V60	V61	V62	V63	V64	V65	V66	V67	V68	V69	V70	V71	V72	V73	V74	V75	V76	V77	V78	V79	V80	V81	V82	V83	V84	V85	V86	V87	V88	V89	V90	V91	V92	V93	V94	V95	V96	V97	V98	V99	V100	V101	V102	V103	V104	V105	V106	V107	V108	V109	V110	V111	V112	V113	V114	V115	V116	V117	V118	V119	V120	V121	V122	V123	V124	V125	V126	V127	V128	V129	V130	V131	V132	V133	V134	V135	V136	V137	V138	V139	V140	V141	V142	V143	V144	V145	V146	V147	V148	V149	V150	V151	V152	V153	V154	V155	V156	V157	V158	V159	V160	V161	V162	V163	V164	V165	V166	V167	V168	V169	V170	V171	V172	V173	V174	V175	V176	V177	V178	V179	V180	V181	V182	V183	V184	V185	V186	V187	V188	V189	V190	V191	V192	V193	V194	V195	V196	V197	V198	V199	V200	V201	V202	V203	V204	V205	V206	V207	V208	V209	V210	V211	V212	V213	V214	V215	V216	V217	V218	V219	V220	V221	V222	V223	V224	V225	V226	V227	V228	V229	V230	V231	V232	V233	V234	V235	V236	V237	V238	V239	V240	V241	V242	V243	V244	V245	V246	V247	V248	V249	V250	V251	V252	V253	V254	V255	V256	V257	V258	V259	V260	V261	V262	V263	V264	V265	V266	V267	V268	V269	V270	V271	V272	V273	V274	V275	V276	V277	V278	V279	V280	V281	V282	V283	V284	V285	V286	V287	V288	V289	V290	V291	V292	V293	V294	V295	V296	V297	V298	V299	V300	V301	V302	V303	V304	V305	V306	V307	V308	V309	V310	V311	V312	V313	V314	V315	V316	V317	V318	V319	V320	V321	V322	V323	V324	V325	V326	V327	V328	V329	V330	V331	V332	V333	V334	V335	V336	V337	V338	V339	V340	V341	V342	V343	V344	V345	V346	V347	V348	V349	V350	V351	V352	V353	V354	V355	V356	V357	V358	V359	V360	V361	V362	V363	V364	V365	V366	V367	V368	V369	V370	V371	V372	V373	V374	V375	V376	V377	V378	V379	V380	V381	V382	V383	V384	V385	V386	V387	V388	V389	V390	V391	V392	V393	V394	V395	V396	V397	V398	V399	V400	V401	V402	V403	V404	V405	V406	V407	V408	V409	V410	V411	V412	V413	V414	V415	V416	V417	V418	V419	V420	V421	V422	V423	V424	V425	V426	V427	V428	V429	V430	V431	V432	V433	V434	V435	V436	V437	V438	V439	V440	V441	V442	V443	V444	V445	V446	V447	V448	V449	V450	V451	V452	V453	V454	V455	V456	V457	V458	V459	V460	V461	V462	V463	V464	V465	V466	V467	V468	V469	V470	V471	V472	V473	V474	V475	V476	V477	V478	V479	V480	V481	V482	V483	V484	V485	V486	V487	V488	V489	V490	V491	V492	V493	V494	V495	V496	V497	V498	V499	V500	V501	V502	V503	V504	V505	V506	V507	V508	V509	V510	V511	V512	V513	V514	V515	V516	V517	V518	V519	V520	V521	V522	V523	V524	V525	V526	V527	V528	V529	V530	V531	V532	V533	V534	V535	V536	V537	V538	V539	V540	V541	V542	V543	V544	V545	V546	V547	V548	V549	V550	V551	V552	V553	V554	V555	V556	V557	V558	V559	V560	V561	V562	V563	V564	V565	V566	V567	V568	V569	V570	V571	V572	V573	V574	V575	V576	V577	V578	V579	V580	V581	V582	V583	V584	V585	V586	V587	V588	V589	V590	V591	V592	V593	V594	V595	V596	V597	V598	V599	V600	V601	V602	V603	V604	V605	V606	V607	V608	V609	V610	V611	V612	V613	V614	V615	V616	V617	V618	V619	V620	V621	V622	V623	V624	V625	V626	V627	V628	V629	V630	V631	V632	V633	V634	V635	V636	V637	V638	V639	V640	V641	V642	V643	V644	V645	V646	V647	V648	V649	V650	V651	V652	V653	V654	V655	V656	V657	V658	V659	V660	V661	V662	V663	V664	V665	V666	V667	V668	V669	V670	V671	V672	V673	V674	V675	V676	V677	V678	V679	V680	V681	V682	V683	V684	V685	V686	V687	V688	V689	V690	V691	V692	V693	V694	V695	V696	V697	V698	V699	V700	V701	V702	V703	V704	V705	V706	V707	V708	V709	V710	V711	V712	V713	V714	V715	V716	V717	V718	V719	V720	V721	V722	V723	V724	V725	V726	V727	V728	V729	V730	V731	V732	V733	V734	V735	V736	V737	V738	V739	V740	V741	V742	V743	V744	V745	V746	V747	V748	V749	V750	V751	V752	V753	V754	V755	V756	V757	V758	V759	V760	V761	V762	V763	V764	V765	V766	V767	V768	V769	V770	V771	V772	V773	V774	V775	V776	V777	V778	V779	V780	V781	V782	V783	V784	V785	V786	V787	V788	V789	V790	V791	V792	V793	V794	V795	V796	V797	V798	V799	V800	V801	V802	V803	V804	V805	V806	V807	V808	V809	V810	V811	V812	V813	V814	V815	V816	V817	V818	V819	V820	V821	V822	V823	V824	V825	V826	V827	V828	V829	V830	V831	V832	V833	V834	V835	V836	V837	V838	V839	V840	V841	V842	V843	V844	V845	V846	V847	V848	V849	V850	V851	V852	V853	V854	V855	V856	V857	V858	V859	V860	V861	V862	V863	V864	V865	V866	V867	V868	V869	V870	V871	V872	V873	V874	V875	V876	V877	V878	V879	V880	V881	V882	V883	V884	V885	V886	V887	V888	V889	V890	V891	V892	V893	V894	V895	V896	V897	V898	V899	V900	V901	V902	V903	V904	V905	V906	V907	V908	V909	V910	V911	V912	V913	V914	V915	V916	V917	V918	V919	V920	V921	V922	V923	V924	V925	V926	V927	V928	V929	V930	V931	V932	V933	V934	V935	V936	V937	V938	V939	V940	V941	V942	V943	V944	V945	V946	V947	V948	V949	V950	V951	V952	V953	V954	V955	V956	V957	V958	V959	V960	V961	V962</
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University of Alberta

CASE 1		INDIVIDUAL GROUPING MODE									
LANG ARTS			MATHEMATICS			COMBINED					
SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO
ALL TIMITS	8.	219.	0.037	10.	219.	0.046	15.	438.	0.041		
COMMENTS	6.	114.	0.053	5.	108.	0.045	11.	222.	0.050		
PRODUCT Q	0.	17.	0.0	1.	45.	0.022	1.	62.	0.016		
PROCESS Q	0.	8.	0.0	1.	11.	0.091	1.	19.	0.053		
CHOICE Q	0.	1.	0.0	0.	0.	9.999	0.	1.	0.0		
SELF R Q	0.	0.	9.999	0.	5.	0.0	0.	5.	0.0		
NON ACA	2.	75.	0.026	3.	49.	0.061	5.	125.	0.040		
GET ATTN	0.	3.	0.0	0.	1.	0.0	0.	4.	0.0		
BEHAVIORAL	4.	65.	0.062	1.	13.	0.023	5.	108.	0.046		
TINIT PRAISE	0.	14.	0.0	0.	26.	0.0	0.	40.	0.0		
TINIT CRITIC	0.	9.	0.0	0.	7.	0.0	0.	16.	0.0		
LONG	0.	46.	0.0	3.	46.	0.065	3.	92.	0.033		
TINIT SUST'N	0.	3.	0.0	0.	1.	0.0	0.	4.	0.0		
ALL SINITs	21.	224.	0.094	11.	193.	0.057	32.	417.	0.077		
SINIT PRAISE	0.	3.	0.0	0.	5.	0.0	0.	8.	0.0		
SINIT CRITIC	1.	2.	0.500	0.	0.	9.999	1.	2.	0.500		

CASE 1		SMALL GROUP GROUPING MODE									
LANG ARTS			MATHEMATICS			COMBINED					
SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO
ALL TIMITS	9.	178.	0.051	0.	0.	9.999	9.	178.	0.051		
COMMENTS	0.	33.	0.0	0.	0.	9.999	0.	33.	0.0		
PRODUCT Q	3.	56.	0.054	0.	0.	9.999	3.	56.	0.054		
PROCESS Q	2.	43.	0.047	0.	0.	9.999	2.	43.	0.047		
CHOICE Q	1.	1.	1.000	0.	0.	9.999	1.	1.	1.000		
SELF R Q	0.	7.	0.0	0.	0.	9.999	0.	7.	0.0		
NON ACA	3.	28.	0.107	0.	0.	9.999	3.	28.	0.107		
GET ATTN	0.	0.	9.999	0.	0.	9.999	0.	0.	9.999		
BEHAVIORAL	0.	28.	0.0	0.	0.	9.999	0.	28.	0.0		
TINIT PRAISE	0.	18.	0.0	0.	0.	9.999	0.	18.	0.0		
TINIT CRITIC	0.	7.	0.0	0.	0.	9.999	0.	7.	0.0		
LONG	2.	25.	0.080	0.	0.	9.999	2.	25.	0.080		
TINIT SUST'N	3.	24.	0.125	0.	0.	9.999	3.	24.	0.125		
ALL SINITs	4.	67.	0.060	0.	0.	9.999	4.	67.	0.060		
SINIT PRAISE	0.	5.	0.0	0.	0.	9.999	0.	5.	0.0		
SINIT CRITIC	0.	0.	0.0	0.	0.	9.999	0.	0.	0.0		

CASE 1		WHOLE CLASS GROUPING MODE									
LANG ARTS			MATHEMATICS			COMBINED					
SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO
ALL TIMITS	18.	652.	0.028	21.	683.	0.032	39.	1315.	0.030		
COMMENTS	5.	125.	0.040	0.	134.	0.0	5.	259.	0.019		
PRODUCT Q	7.	318.	0.022	13.	314.	0.041	20.	622.	0.032		
PROCESS Q	3.	150.	0.020	3.	82.	0.033	6.	242.	0.025		
CHOICE Q	0.	1.	0.0	1.	13.	0.077	1.	14.	0.071		
SELF R Q	2.	29.	0.066	4.	87.	0.060	6.	96.	0.063		
NON ACA	1.	16.	0.063	0.	24.	0.0	1.	40.	0.025		
GET ATTN	0.	13.	0.0	0.	19.	0.0	0.	32.	0.0		
BEHAVIORAL	5.	135.	0.037	0.	127.	0.0	5.	262.	0.019		
TINIT PRAISE	2.	95.	0.021	4.	73.	0.058	6.	168.	0.036		
TINIT CRITIC	2.	18.	0.111	0.	14.	0.0	2.	32.	0.063		
LONG	2.	60.	0.033	6.	50.	0.120	8.	110.	0.073		
TINIT SUST'N	1.	78.	0.013	3.	87.	0.053	4.	138.	0.030		
ALL SINITs	4.	184.	0.022	0.	118.	0.0	4.	300.	0.013		
SINIT PRAISE	0.	18.	0.0	0.	7.	0.0	0.	26.	0.0		
SINIT CRITIC	0.	1.	0.0	0.	8.	0.0	0.	7.	0.0		

Keith was described as a "fairly large kid... a bit clumsy... In Phys. Ed., for example, he's not a good athlete." Keith was "not interested in rough-and-tumble sporting activities that most Grade 3 boys are interested in so he'll be skipping with the little girls."

The teacher described him as "not interacting terribly well with other kids in the class" and he suspected "he would be a long way down on a sociogram... He's not an outgoing individual who makes friends easily ... He's quiet and at the same time he'll be a bit of a tattletale at times ... I have to remind him not to tell on others, and once isn't enough... You know he'll do things that cause him to be a little alienated, nothing terrible but kids pick up on that right away." His parents were concerned about his interaction with peers and the fact that other kids said unkind things to him and on one occasion his father discussed Keith's social development at length with the teacher. When the researcher asked whether these impressions could act as a "label," or something that influenced him, the teacher stated that "it's something that I use in dealing with him." The teacher rated Keith as fairly unhappy (6) and reasoned that it was because of the social isolation he experienced. "You often see him alone at recess bouncing a ball by himself." On two separate occasions the teacher assigned Keith a 5 for maturity.

Keith was considered as a possible candidate for the rejection group for, like Sharon, he was a "quiet person" whose "personality was not as attractive as some of the others." He rated him a 5 in physical attractiveness and a very low (7) score for being noticeable.

He also received a low score (6) for the amount of concern the teacher felt about him and 6 for "wanting to keep for another year." The teacher was dissatisfied with the provided definition for indifference for Keith because he "knew a lot about him" but he did feel "blah" and "indifferent" about him. Eventually he placed him in the indifference category. Questioned again in May, the teacher still hesitated to classify him as a rejection student. In an interview on June 7th the teacher stated, "He and I... it's kind of funny, and it's probably a genuine change in my attitude toward him too...we've talked to each other a bit more and we've...He's been working a little harder. He's done very well. He seems, I don't know, a little happier with the way things are going, something along these lines. That can change my approach to things..." and later...My changed attitude toward Keith it's not a violent shift it's more an adjustment in my feelings about the kid." Nonetheless at this time he reassigned Keith to the indifference category "without the definition" but with no hint of rejection.

The teacher rated Keith as below average (5) in general intellectual ability, 5 in creativity, and his expectations for Keith's achievement in both language arts and math were in the middle cluster (4) of the class. He was assigned a 5 for probable highest achiever. He was deemed "good solid average. Math is quite strong, language arts a little less so." He was in the good reading group. "He has a funny kind of voice in a way and that threw me off initially at the first of the year but his reading (oral) is fine."

During the oral reading of the novel, Watership Down, the teacher believed that Keith was "turned off completely." The researcher observed

that he usually sat behind the teacher, out of the line of vision. The teacher was convinced that Keith "positioned himself purposely" and "did not choose to be in the forefront answering." He could not ascertain why Keith was disinclined to participate in these read-aloud sessions but suggested "maybe he's the kind of kid who may not like to be put on the spot, to be asked a question." If asked a question in this context he "quite often will not answer but will just sit there." The result was that the teacher basically avoided asking him questions in this setting. He received a fairly low score (5) for eye contact with the teacher.

The teacher assessed his work habits in the 3 to 4 range (motivation-4, persistence-4 and careful/deliberate worker-3). Two separate ratings for cooperativeness/compliance were both 3. The teacher described him as "reasonably conscientious" and "able to get down to task without a lot of direction." He received a high score of 1 on the calm dimension.

#### Additional Information

Age: 8 years 5 months (mean = 8 years 7 months)

I.Q.: Verbal-111 (mean = 112.73)  
Quantitative- 97 (mean = 112.65)  
Non-verbal -100 (mean = 111.46)

#### Achievement:

Language arts 86% (mean = 85.07)  
Math 97 (mean = 93.64)

#### Discussion

Keith appeared to have about average or less than average ability as evidenced by scores on I.Q. tests. The teacher assigned a less than average (5) rating for intellectual ability and (5) for creativity.

His expectations for Keith's math and language arts achievement were just average at 4. His math mark was a bit higher supporting the

Keith	Language Arts	Math	Both Subjects
All Tinit	2.3	2.0	2.2
Product Q	2.6	3.1	2.8
Process Q	2.5	2.9	2.6
Get Atn Q	0.0	0.0	0.0
Comments	1.8	0.8	1.4
Sustaining	3.8	1.7	3.1
Tinit Prai	3.1	3.0	3.1
Tinit Crit	0.0	4.8	1.8
Behavioral	1.8	0.0	1.0
All Sinit	1.7	2.3	1.9
Ss Accepted	8/8	6/7	14/15
Total Verbal	2.1	2.1	2.1

Engaged Time

	Teacher directed settings	self-paced independent	Combined settings
language	93% 3.68 hours	85% 2.81 hours	89% 6.5 hours
Math	88% 1.88 hours	71% 3.13 hours	77% 5.01 hours
Combined	91% 5.56 hours	77% 5.95 hours	84% 11.51 hours

teacher's belief that he was a bit stronger in math but language arts was average. The teacher felt he put forth a fair effort and the time-on-task data would support this. His percentage of time on task falls within the mid-80% range. He spent more time on task during independent language arts activities than independent math activities. The researcher noted that when he was "off task" he often stared ahead with a blank expression for long periods of time or interacted quietly with his neighbor, Sharon.

His indifference status appears to have resulted because he was not noticeable to the teacher, was quiet, and was seen as a social



isolate. He had conditioned the teacher to avoid him during the novel reading sessions. This particular setting was one of the teacher's favorite times with his class and he enjoyed sharing the story with them and hearing their reactions to it as it progressed. The fact that Keith so obviously was disinterested must have been disappointing to the teacher. Keith's somewhat effeminate and lethargic behavior did not fit the more stereotyped Grade 3 boy's behavior and this appeared to be what the teacher implied.

Overall Keith received a lower than average amount of verbal interaction from the teacher. He was involved in only 2.7% of the more instructional Product and Process questions. Keith initiated a low percentage of Sinitis with the teacher, a behavior characteristic of indifference children. Keith received more Tinitis in private (2.7) settings than in whole class settings (1.8). This was particularly true in language arts where the private setting Tinit percentage was 3.2%.

It was evident on the basis of observations during the study that the teacher was developing more positive feelings toward Keith as the year ended and was beginning (by his own account) to interact with him more on a personal level which, in turn, appeared to affect Keith's sense of well being and accomplishment.

The teacher rated Geoffrey as a very attractive (1) boy who was one of the initial selections for the attachment group and as someone "he would like to keep for another year" (1). He described him as a "bit of an individual, not really going with the herd all the time...I like good old Geoff because I admire idiosyncratic behavior and Geoffrey calls his own too...Well he's not one of the sheep."

He rated him as fairly "happy" (2). "He takes an interest in other things that may not be the sort of normal things for kids of his age. He's perhaps more interested in books than he is in hockey." The teacher did not judge him to be socially isolated but noted "he tends not to get into the mainstream with the better athletes in sporting activities." It was as if he preferred to be doing something else.

On two separate ratings for "cooperativeness/compliance" he received a 2 and a 4. For although he worked well, as soon as he was finished he was often disruptive. For example he would "tap pencils, stick them in his ears, or wander around the room." The teacher tended to excuse a considerable amount of Geoffrey's disruptive behavior. "Geoffrey sometimes makes noises just for the hell of it but he is a good friend of mine and I put up with his idiosyncracies because of that." On a similar occasion when he had completed his work quickly, the teacher reasoned on his behalf that "he didn't get anything wrong on his sheet. It was boring for him and so he was fiddling around, surely distracting a couple of others in the vicinity so I got a little annoyed with him but maybe that's unfair." And although the teacher found the distraction "quite annoying, quite frankly", he also added that

"in defence of the kid he knew what we were doing, you know" and "that kind of behavior really isn't their (his) fault, that's really my fault and I know that."

After a particularly "wiggly" and "squirmy" week, the teacher was reflecting on the possible cause. "It could be with Geoffrey that I've just started noticing it and that he's been wiggly all year" or "maybe he's getting attention that he's needed but hasn't got all year. Sometimes we take kids for granted when they are doing well." and the teacher noted that he would "have to have things to occupy him in other ways."

For one math activity Geoffrey could not find his scissors and he became most insistent that the teacher interrupt the class to make a general announcement about them. "His damn scissors. I don't know. Geoffrey hadn't returned his report card to me yet, over a month, the little buggar, and then his scissors go missing for 30 seconds and he's upset about it." The teacher "tried to ignore it but it didn't work. He was very insistent." But he had to be content with the loan of a pair. On two separate ratings of maturity Geoff received a 2 and a 3.

On balance for the year the teacher rated him as a 4 "or a bit above" on the "calm/good self control" dimension. He rated him 2 for being "noticeable" and 2 for maintaining "eye contact". Geoffrey was assigned a 6 indicating a small amount of "concern" on the part of the teacher but "this has more to do with the behavioral aspect." There was no concern about Geoff's academic work.

The teacher described Geoffrey as "bright" and rated him 1 on "creative/imaginative", 2 on "general intellectual ability", and 1 for

"probable highest achiever". The teacher's expectation for Geoff's achievement in language arts was 1 and 2 for achievement in math. "He's a good solid average student; quite well above average." He was in the better reading group. "He likes to read. He's a good reader. He likes math and does well at that." In discussing the year-end achievement results in June the teacher pointed out that Geoffrey had "done really well. He had 57 out of 60 on the math and was over the 90th percentile in the reading area. Maybe he's real smart and I haven't given him enough to do there..."

The teacher perceived that Geoffrey did his work "quickly, effectively, and accurately. Until his work is done, Geoffrey attends well." The teacher assigned the following scores: "careful/deliberate worker"- 2, "persistent" - 1, and for "motivation to do school work"- 3. "He's a funny kid in a lot of ways, you know. Geoffrey, in math for example, he gets right down to work and does it but then when he's finished, if there's a two minute hiatus he's ... He wouldn't be 'off task', it's when he's finished. You see that's a problem and you're observing him not doing anything. Is he off task? or is he finished? (The teacher's usual expectation was that a free reading book kept in the desk might fill in any extra time quietly.)

#### Additional Data

Age: 8 years 7 months (mean = 8 years 7 months)

I.Q.: Verbal 122 (mean = 112.73)  
Quantitative 133 (mean = 112.65)  
Non-Verbal 122 (mean = 111.46)

Achievement: Language Arts 94% (mean = 85.07)  
Math 95% (mean = 93.64)

Engaged Time Data

	Teacher Directed	Self-Paced	Total Time
Lang Arts	90% 2.9 hours	88% 2.68 hours	89% 5.58 hours
Math	84% .91 hours	77% 1.43 hours	79% 2.35 hours
Combined Subjects	88% 3.81 hours	84% 4.11 hours	86% 7.93 hours

Verbal Interaction Data

Geoffrey	Language Arts	Math	Both Subjects
All Tinit	4.9	7.1	5.9
Product Q	2.4	5.1	3.8
Process Q	4.6	9.8	6.3
Get Attn Q	20.0	5.3	11.8
Comments	7.5	11.1	9.0
Sustaining	3.1	8.0	4.8
Tinit Praise	5.8	1.2	3.9
Tinit Crit	12.5	5.9	10.2
Behavioral	8.7	13.8	10.8
All Sinit	3.8	5.1	4.3
Ss Accepted	14/16	10/14	24/30
Total Verbal	4.5	6.6	5.4

Geoffrey's I.Q. scores indicated that he was indeed a "bright" boy, well above this class' average. He worked quickly and effectively but then lacked the self-control to use his extra time in a way that conformed to classroom rules. It was difficult to assess and record his time on task for this reason and the scores assigned may be too low. But if the implicit understanding was that free reading or quiet drawing, writing, or interacting with a friend was acceptable then most of Geoff's antics after his work was completed would have to be considered

as "off task" behavior.

His achievement, though good, might have been even better. He had the fifth highest mark in language arts and the 13th highest mark in math. With a quantitative I.Q. score of 133 it might be expected that he could have achieved a perfect score on the math achievement test as four of his classmates did.

On several occasions the teacher implied that Geoff was bored and that he knew the content well already and he therefore claimed responsibility for Geoff's misbehavior during instruction. He also reflected in June that he may not have challenged Geoff enough in the reading area.

Geoff received high percentages of most verbal contacts with the teacher. Aside from the fact that the teacher appeared to enjoy interacting with him, many of the contacts were for disciplinary reasons; hence the 11.8 for all Get Attention questions, 10.8 for Behavioral contacts, and 10.2 for total Criticism. The teacher directed a high percentage of high level, or Process questions, to Geoff in language arts (4.6) and especially in math (9.8) resulting in the high overall average of 6.3 for all Process questions. Geoff was more inclined to initiate Sinitis during math instruction.

STUDENT 3  
TOTAL INTERACTIONS: 2715. INTERNS PUPIL PRESENT: 2411. RATIO: 0.888

TYPE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)																	
LAT: T-PT-R	141.	7.	0.050	84.	3.	0.036	162.	10.	0.062	31.	4.	0.139	321.	15.	0.014	92.	2.	0.032	91.	5.	0.055	21.	1.	0.048	
V57	1.	0.000	2.	0.000	40.	0.000	1.	0.000	2.	0.000	0.500	8.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V60	34.	2.	0.059	10.	0.000	52.	5.	0.096	3.	0.057	76.	6.	0.079	18.	2.	0.111	12.	1.	0.083	3.	0.000	0.000	0.000	0.000	0.000
V62	8.	1.	0.125	5.	0.000	32.	2.	0.063	0.	0.000	25.	1.	0.013	6.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V85	23.	2.	0.087	22.	2.	0.091	13.	1.	0.077	6.	0.000	39.	1.	0.026	13.	0.000	5.	1.	0.200	0.	0.000	0.000	0.000	0.000	0.000
V86	2.	0.000	0.000	0.000	8.	1.	0.000	1.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V87	9.	0.000	6.	0.000	33.	3.	0.031	4.	0.000	0.000	0.000	38.	1.	0.026	10.	0.000	18.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V119	9.	0.000	7.	0.000	0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V28	51.	3.	0.059	62.	2.	0.032	8.	0.000	23.	1.	0.043	128.	2.	0.016	12.	0.000	13.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
V29	47.	2.	0.043	2.	0.000	6.	0.000	0.000	4.	1.	0.230	90.	5.	0.056	13.	0.000	32.	1.	0.031	0.	0.000	0.000	0.000	0.000	0.000
V30	1.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V31	1.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V32	8.	0.000	7.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V33	2.	0.000	3.	1.	0.000	2.	1.	0.500	1.	1.	1.000	7.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V22	31.	2.	0.065	10.	0.000	0.000	0.000	0.000	1.	1.	1.000	70.	6.	0.086	21.	2.	0.095	14.	1.	0.071	16.	1.	0.000	0.000	0.000
LAS: T-PT-R	53.	5.	0.094	18.	0.000	151.	3.	0.020	3.	1.	0.323	107.	5.	0.047	40.	1.	0.025	27.	0.000	0.000	0.000	0.000	0.000	0.000	0.000
V57	0.	0.000	0.000	1.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V60	0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V62	0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V85	9.	1.	0.125	0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V86	0.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V87	4.	1.	0.250	3.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V119	1.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V123	9.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V124	45.	4.	0.069	18.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V125.	10.	2.	0.200	0.	0.000	137.	3.	0.022	3.	1.	0.323	92.	4.	0.043	36.	1.	0.028	26.	0.000	0.000	0.000	0.000	0.000	0.000	0.000
V28	20.	4.	0.200	17.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
V99	32.	1.	0.031	1.	0.000	10.	0.000	0.000	3.	1.	0.333	87.	3.	0.034	13.	0.000	5.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

STUDENT 3 SUMMARY

TOTAL SPEC	X
LA	1365
MA	1046
T:MITLA	943
S:MITLA	422
T:MITM	770
S:MITM	276
T:MITTS	1713
S:MITTS	698

STUDENT 3 SUMS ACROSS ROWS

LANGUAGE ARTS	%	MATH	%	TOTAL	%
T-PT-R	288.	24.	0.063	3.	0.000
V57	8.	1.	0.125	0.	0.000
V60	60.	9.	0.150	3.	0.000
V62	8.	0.000	0.000	0.000	0.000
V85	35.	1.	0.029	0.	0.000
V86	9.	1.	0.111	0.	0.000
V87	13.	1.	0.067	0.	0.000
V119	18.	2.	0.111	0.	0.000
V28	127.	9.	0.071	0.	0.000
V29	53.	5.	0.094	0.	0.000
V30	9.	1.	0.111	0.	0.000
V31	17.	0.000	0.000	0.000	0.000
V32	8.	0.000	0.000	0.000	0.000
V33	9.	0.000	0.000	0.000	0.000
V22	65.	9.	0.138	3.	0.000
MS: T-PT-R	65.	6.	0.092	6.	0.000
V57	4.	0.000	0.000	0.000	0.000
V60	0.	0.000	0.000	0.000	0.000
V62	0.	0.000	0.000	0.000	0.000
V85	6.	1.	0.250	0.	0.000
V86	4.	0.000	0.000	0.000	0.000
V87	8.	0.000	0.000	0.000	0.000
V119	8.	0.000	0.000	0.000	0.000
V103	8.	0.000	0.000	0.000	0.000
V104	50.	5.	0.100	5.	0.000
V105	1.	0.000	0.000	0.000	0.000
V98	42.	2.	0.048	3.	0.000
V99	22.	4.	0.174	3.	0.000

CASE: 3

	INDIVIDUAL GROUPING MODE								
	LANG ARTS			MATHEMATICS			COMBINED		
	SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO
ALL TINITs	10.	189.	0.053	10.	161.	0.062	20.	350.	0.057
COMMENTS	6.	106.	0.057	7.	71.	0.099	13.	177.	0.073
PRODUCT Q	0.	9.	0.0	0.	40.	0.0	0.	49.	0.0
PROCESS Q	0.	8.	0.0	1.	11.	0.091	1.	19.	0.053
CHOICE Q	0.	1.	0.0	0.	0.	9.999	0.	1.	0.0
SELF R Q	0.	0.	9.999	0.	3.	0.0	0.	3.	0.0
NON ACA.	3.	62.	0.048	2.	35.	0.057	5.	97.	0.052
GET ATTN	1.	3.	0.333	0.	1.	0.0	1.	4.	0.250
BEHAVIORAL	4.	56.	0.071	6.	32.	0.188	10.	88.	0.114
TINIT PRAISE	1.	13.	0.077	0.	11.	0.0	1.	24.	0.042
TINIT CRITIC	1.	9.	0.111	0.	3.	0.0	1.	12.	0.083
LONG	3.	39.	0.077	0.	33.	0.0	3.	72.	0.042
TINIT SUST'N	0.	1.	0.0	0.	1.	0.0	0.	2.	0.0
ALL SINITs	4.	187.	0.021	5.	171.	0.029	9.	358.	0.025
SINIT PRAISE	1.	3.	0.333	0.	4.	0.0	1.	7.	0.143
SINIT CRITIC	0.	1.	0.0	0.	0.	9.999	0.	1.	0.0

	SMALL GROUP GROUPING MODE								
	LANG ARTS			MATHEMATICS			COMBINED		
	SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO
ALL TINITs	6.	178.	0.034	0.	0.	9.999	6.	178.	0.034
COMMENTS	2.	33.	0.061	0.	0.	9.999	2.	33.	0.061
PRODUCT Q	0.	56.	0.0	0.	0.	9.999	0.	56.	0.0
PROCESS Q	1.	43.	0.023	0.	0.	9.999	1.	43.	0.023
CHOICE Q	0.	1.	0.0	0.	0.	9.999	0.	1.	0.0
SELF R Q	1.	17.	0.059	0.	0.	9.999	1.	17.	0.059
NON ACA.	2.	28.	0.071	0.	0.	9.999	2.	28.	0.071
GET ATTN	0.	0.	9.999	0.	0.	9.999	0.	0.	9.999
BEHAVIORAL	2.	28.	0.071	0.	0.	9.999	2.	28.	0.071
TINIT PRAISE	1.	18.	0.056	0.	0.	9.999	1.	18.	0.056
TINIT CRITIC	1.	7.	0.143	0.	0.	9.999	1.	7.	0.143
LONG	0.	25.	0.0	0.	0.	9.999	0.	25.	0.0
TINIT SUST'N	0.	24.	0.0	0.	0.	9.999	0.	24.	0.0
ALL SINITs	1.	67.	0.015	0.	0.	9.999	1.	67.	0.015
SINIT PRAISE	0.	5.	0.0	0.	0.	9.999	0.	5.	0.0
SINIT CRITIC	0.	1.	0.0	0.	0.	9.999	0.	1.	0.0

	WHOLE CLASS GROUPING MODE								
	LANG ARTS			MATHEMATICS			COMBINED		
	SPEC	ALL	RATIO	SPEC	ALL	RATIO	SPEC	ALL	RATIO
ALL TINITs	30.	576.	0.052	45.	608.	0.074	75.	1185.	0.063
COMMENTS	11.	114.	0.096	14.	119.	0.118	25.	233.	0.107
PRODUCT Q	8.	264.	0.030	17.	293.	0.058	25.	557.	0.045
PROCESS Q	8.	143.	0.056	8.	81.	0.099	16.	224.	0.071
CHOICE Q	0.	1.	0.0	1.	11.	0.091	1.	12.	0.083
SELF R Q	1.	27.	0.037	3.	65.	0.046	4.	92.	0.043
NON ACA.	0.	15.	0.0	1.	22.	0.045	1.	37.	0.027
GET ATTN	2.	12.	0.167	1.	18.	0.056	3.	30.	0.100
BEHAVIORAL	12.	124.	0.097	14.	113.	0.124	26.	237.	0.110
TINIT PRAISE	5.	90.	0.056	1.	73.	0.014	6.	163.	0.037
TINIT CRITIC	2.	16.	0.125	1.	14.	0.071	3.	30.	0.100
LONG	1.	56.	0.018	1.	43.	0.023	2.	99.	0.020
TINIT SUST'N	3.	71.	0.042	4.	49.	0.082	7.	120.	0.058
ALL SINITs	11.	168.	0.065	9.	105.	0.086	20.	273.	0.073
SINIT PRAISE	1.	19.	0.053	1.	7.	0.143	2.	26.	0.077
SINIT CRITIC	0.	1.	0.0	2.	5.	0.400	2.	6.	0.333

University of Alberta



Case #4  
Edward  
Page 1

The teacher rated Edward as very "attractive" (1), "happy" (1), "quite small", "short, freckles, and some new front teeth". He was rated 1 for "wanting to keep for another year" and was one of the three first choices for the attachment group. "He's the sort of a kid that I was. He's into sports. He's a bit of leader in class. He's the one...He can run things when I'm not there...He's quite "cooperative" (1 and 3) and actually he's younger than a lot of the kids too, by months, not by a long time, but he's younger than most of them... He's just a real nice kid to be around." He was assigned a 1 for being "noticeable" and a 1 for maintaining "eye contact".

He sat beside Geoffrey and was frequently involved in mischief although he often managed to escape notice. On one occasion while viewing a videotape, the teacher admitted, "It's funny. I focussed on Geoffrey but Edward is no angel either...but he's so cute, what do you do?" and of both of them... "Well they're finished their work so- but they're not exactly being helpful." Edward received a 3 and a 1 on two separate ratings of "maturity".

The teacher assigned a 2 for "general intellectual ability", ("He's really bright.") and 2's for "creativity and imaginativeness", and for "probable highest achiever". For expected achievement in language arts and math he was assigned a 2 and a 3 respectively. " You know he's good at everything he does, no problems." The teacher was not at all "concerned" (7) about his academic progress. He rated Edward as 2 in "motivation to do school work", 1 in "persistence", 1 for "careful/deliberate worker", and 1 for being "calm".

Additional Information

Age: 8 years 11 months (mean= 8 years 7 months)

I.Q.: Verbal 106 (mean= 112.73)  
Quantitative 109 (mean = 112.65)  
Non-Verbal 116 (mean = 111.46)

Achievement : Language Arts 88 (mean = 85.07)  
Mathematics 100 (mean = 93.64)

Engaged Time Data

	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	99%	94%	98%
	1.51 hours	.51 hours	2.03 hours

Verbal Interaction Data

Edward	Language Arts	Math	Both Subjects
All Tinitis	4.4	4.1	4.2
Product Q	5.1	4.7	4.9
Process Q	5.0	3.9	4.6
Get Atn Q	0.0	0.0	0.0
Comments	2.9	2.5	2.7
Sustain	2.9	6.9	4.3
Tinit Praise	3.1	9.1	5.7
Tinit Crit	5.9	4.8	5.5
Behavioral	3.5	2.4	3.0
All Sinitis	5.7	2.3	4.3
Ss Accepted	22/27	7/7	29/34
Total Verbal	4.8	3.6	4.3

Discussion

Edward was one of the three first choice attachment students who was well liked by the teacher and seen to be fairly cooperative. He received a less than average amount of behavioral reminders and although the researcher noted he was frequently quite involved in some antics

with Geoffrey he maintained the impression of being on task. The 3 out of a possible 55 critical contacts he received resulted in a higher than normal ratio of criticism but this teacher behavior was exhibited infrequently overall.

Edward had a greater percentage of total verbal contacts in language arts with a higher than average percentage (5.1 and 5.0) for language arts Product and language arts Process questions respectively.

He initiated a high percentage of Sinitis (5.7) in language arts but a less than average amount (2.3) in math. From the teacher he received a high percentage of Sustaining (6.9) and Praise (9.1) during math instruction. The teacher had assigned a high expectancy for Edward's language arts achievement and an expectancy score in the middle range in math. However, Edward achieved a perfect score of 100% on the math exam.

Curiously the teacher felt he was younger than most students but in fact he was the third oldest child in the classroom. He was also perceived to be very bright but his I.Q. scores indicate that he was below average intelligence for this class. It appeared that by perceiving him as being younger and brighter than he really was, the teacher may have held a high expectancy for him. This may have been due to Edward's work habits for on the basis of two hours of observation in language arts Edward appeared to be an on-task student. The effort rating he was assigned was very high.

In all Edward was one of the top students who tried hard, did well, and got along well with the teacher.

The teacher described Lena as a very "attractive"

(1), "noticeable" (1), "happy" (2) and "calm (2) little girl.

Although not one of his initial choices, Lena was placed in the attachment group. "I don't find her personality as attractive as some of the other kids'... She's attention-seeking in a funny sort of way. She quite frequently will ask questions that she knows the answer to, and knows it very well. (because of the answers she gives me all the way along the line)...You know it's the little things, and it seems so damn petty... Well, you don't chew gum in class. I haven't come to school a day this year when Lena wasn't chewing gum. That's not an important item and I don't overstress it...but collectively, all those little irritants ..." She was assigned a 1 for maintaining "eye contact".

She received a 4 in "wanting to keep for another year". "After a year it's time to move on sometimes, but if I got her again it wouldn't break my heart either. Perhaps she is a little 'defiant' of authority and yet very interested in doing the things that are necessary to achieve good results." His comment in May was " I must say, to put it bluntly, I like her a lot better now than at the start of the year... That sort of attitude and approach on her part has disappeared, practically."

He rated her 3 and 4 on two separate ratings of "cooperativeness" but found her cooperative while waiting. "Lena is finished and she's good that way. She's not going to bug me about it. She'll get something out and start coloring or whatever, you know, for a moment or two while I help some of the others." He gave her credit for working well with her neighbor, Ellen, and often helping her quietly and discreetly. "If

you get little groupings like that, there's nothing wrong with that at all." He assigned her a 2 and a 1 in "maturity".

He described her as a "very bright student" and rated her 3 on "general intellectual ability" and 2 for "probable highest achiever". He assessed her as 4 for being "creative". She was in the better reading group and his expectancy for her achievement in language arts was a 2. Although "good in language arts" he saw her as "much stronger in math", and the 1 assigned for expected math achievement reflected this. On a couple of occasions, as evidenced by his interactive thoughts, he appeared to use her as a gauge while teaching mathematics. "I was a little surprised to find people like Lena making mistakes...She's usually pretty good and I'm starting to think- this is when I'm starting to pull my hair and wonder if I've got to reteach all of this or..."

As for her actual work habits, he described her as highly "motivated to do school work" (1), "persistent" (1), and a "careful deliberate worker" (1) and he had little "concern" (7) about her progress.

#### Additional Information

Age: 8 years 5 months (mean = 8 years 7 months)

I.Q.: Verbal 120 (mean = 112.73)

Quantitative 134 (mean = 112.65)

Non-Verbal 118 (mean = 111.46)

Achievement: Language Arts 93% (mean = 85.07)

Mathematics 100% (mean = 93.64)

Engaged Time Data: Little data were available.

Engaged Time Data

	Teacher-Directed	Self-Paced	Total Time on Task
Language arts	90% 20 minutes	0% 5 minutes	72 25 minutes
Mathematics	91% 17 minutes	100% 31 minutes	97% 48 minutes
Combined Subjects	91% 37 minutes	86% 36 minutes	88% 1.2 hours

Verbal Interaction Data

Lena	Language Arts	Mathematics	Both Subjects
All Tinit	5.1	4.8	5.0
Product Q	5.4	5.3	5.3
Process Q	9.0	4.0	7.3
Get Atn Q	0.0	18.8	9.4
Comments	2.9	4.3	3.6
Sustain	7.6	7.5	7.6
Tinit Praise	3.1	3.3	3.2
Tinit Crit	0.0	5.0	1.9
Behavioral	2.6	6.9	4.4
All Sinit	4.8	6.2	5.4
Ss Accepted	21/23	14/19	35/42
Total Verbal	5.1	5.2	5.1

Discussion

Lena appeared to be a self-assured student who had academic potential and who achieved good marks. By the teacher-assigned scores she was seen to be somewhat uncooperative. She was involved in a high percentage of verbal contacts with the teacher for three reasons: The teacher initiated many quality instructional contacts with her. For example, she received 9% of all the Language Arts Process questions the teacher asked. She was the recipient of a moderate amount of behavioral

reminders and Get Attention questions particularly in math settings. Also she created many verbal contact opportunities for herself by initiating a high ratio of Sinitis (5.4 overall), particularly in math (6.2) settings.

The teacher rated her as 3 in general intellectual ability and 4 in creativity although he commented that she was a "very bright student" and her I.Q. scores, particularly the Quantitative I.Q. score, are well above average for this class. One could speculate to what degree his somewhat negative affect ( 4 in "wanting to keep for another year, mean = 2.69) might have contributed to his general impression of her potential ( as expressed in March). It was interesting to note the positive change in teacher affect toward her over the course of the year.

Little time on task data is available for Lena but the teacher's assessment of her work habits reveals she was perceived to have excellent work habits and achievement motivation. Perhaps the indiscretions that did happen during math instruction may have resulted because she experienced little difficulty, worked quickly, and then had time to spare.

She was involved in a high percentage of verbal contacts and was considered to be one of the top achieving students.

Ellen was portrayed as a very "attractive" (1), "happy" (2), "cooperative" (2 and 2) and "mature" (2 and 2) little girl. "She's quite quiet but gets along quite well with other students in the class...in general a nice kid to have in class." She was assigned a 1 on the "calm" attribute. She was in the "attachment" group and received a 3 for "wanting to keep for another year". The teacher found her "persistent" (1) ("She works hard; she tries hard at things." ), a "careful/deliberate worker" (1), and "keen" or "motivated to do school work" (2). However she seemed hesitant and unsure and often showed her work in progress to the teacher for approval. "She's not one of those who jumps in with both feet by any means but...you know she really has come a long way this year too, I believe. She really is developing quite a bit of self confidence now...She had quite a bit of success this year largely attributable to the way that she's worked. I think she's beginning to recognize that she can do things just as well as the others." She received a 3 for maintaining "eye contact."

The teacher felt that sitting beside Lena and the interaction that occurred between them was beneficial to her. The assumption the teacher made was "she might be yacking with Lena but they're working."

He assessed her as 6 in being "noticeable". "You know the kind of little girl she is. She doesn't demand attention in any way really...In a group situation it's unlikely that she'll volunteer very frequently. She's not a wallflower or anything like that but she's certainly not a very assertive person." This perception of Ellen was utilized in an interactive decision concerning the selection of students. "Ellen is one that I asked because she's a quiet little girl and I often overlook her so



I try to say to myself 'There's an individual that I want to ask a question just to make sure that I know where she's at because she's not the kind, if she doesn't understand, to ask me (in a whole class setting)."

She was rated 4 in "probable highest achiever". She was in the better reading group and the teacher's expected language arts achievement rating for her was 4. Although "she's a stronger math student than she is in language arts" her expected mathematics achievement rating was 4 as well. "In math I'd say she is about average... Math is the kind of thing where you can perfect a skill whether you're in the top range or not and that's what she tends to do. By doing a little extra work she can perfect a skill and be able to work away at it but in terms of initial insight, for example, she's not by any means the first one to pick things up." He assigned a 5 in "creativity" and a 3 in "general intellectual ability"... not one of the top students ..." The teacher was not all that "concerned" (6) about her academic progress.

#### Additional Data

Age: 8 years 7 months (mean 8 years 7 months)

I.Q. Verbal 114 (mean = 112.73)  
Quantitative 117 (mean = 112.65)  
Non-Verbal 109 (mean = 111.46)

Achievement: Language Arts 86% (mean = 85.07)  
Math 100% (mean = 93.64)

Engaged Time Data

	Teacher Directed	Self-Paced	Total Time on Task
Language Arts	92% 3.33 hours	83% 2.9 hours	88% 6.2 hours
Mathematics	81% 1.16 hours	90% 1.66 hours	86% 2.8 hours
Combined Subjects	89% 4.5 hours	86% 4.56 hours	88% 9.06 hours

Verbal Interaction Data

Ellen	Language Arts	Mathematics	Both Subjects
All Tinitis	2.8	4.1	3.4
Product Q	3.1	5.3	4.1
Process Q	5.0	3.9	4.6
Get Atn Q	0.0	5.0	2.8
Comments	1.1	2.5	1.8
Sustaining	6.7	6.9	6.7
Tinit Prai	2.3	3.0	2.6
Tinit Crit	0.0	0.0	0.0
All Sinitis	3.6	4.2	3.8
Ss Accepted	16/17	13/13	29/30
Total Verbal	3.0	4.1	3.5

Ellen was of average age and had made slightly higher than class average scores on the Verbal and Quantitative I.Q. tests. She was a cooperative, quiet little girl who made a consistently good effort. The teacher recognized that she was dependent on him for feedback and encouragement and he attempted to give her Sustaining support and praise. Although her overall Praise percentage was 2.6, in individual grouping modes she received 7.1% praise in language arts, 3.8 of the praise allotted in individual group settings in math and 5.0% in individual group settings overall.

She initiated a high percentage of language arts Sinitis (5.8) , math Sinitis (6.2) and overall Sinitis (6.0) in the individual grouping mode. Many of these were approval-seeking contacts. In both small group and whole class settings she initiated very low percentages of Sinitis. Apparently she felt more comfortable approaching the teacher on a one-to-one basis.

She received a high percentage of Product questions in math (5.3) (more in individual settings) and a high percentage of Process questions (5.0) in language arts (most of which occurred in the good reading group setting). Corrective disciplinary contacts were few and the Get Attention question percentage of 5.0 she received in math was a result of the one contact out of the total of 20 such contacts the teacher delivered to the class. Her overall verbal interaction percentage is lower than the class average for, as the teacher had to keep reminding himself, she was quiet and was easily overlooked.

The teacher rated Brenda as 4 in "attractive" (mean 1.65), 2 in "happy", and 2 in "noticeable/stands out". She received a 1 and a 2 in two ratings of "cooperativeness". She was placed in the "attachment" group and was rated 2 on "wanting to keep for another year". She was assigned 2 for "eye contact". Her father was anxious that she do well in school. He was not satisfied with general comments about her progress. "He really pressed me for an exact ranking and so I said, 'about 12th of 13th on certain things'...He was going to tell her this as a means of persuading her to do better and move up." By comparison Brenda was not so "fiercely competitive. At the same time she likes to know where she's at and likes to achieve as well as she can... She's also competitive in that she likes to be the first done."

He assigned a 1 in "calm", a 1 in "persistence", 2 in "motivation to do school work", and 2 for being a "careful/deliberate worker." However, he rated her 4 in "probable highest achiever", 5 in "general intellectual ability", and 4 in "creativity". "On balance she's a good solid average student." She was in the lower reading group. "Brenda is an on-task individual who works pretty hard...She just doesn't have the skills to be in the other group... Primarily and initially it was some little testing things we did at the start of the year to group according to ability and someone like Brenda, her comprehension skills aren't at the level that I really need for someone in that back group where I can sort of say 'read the directions' and then leave them." He rated her as 5 in "probable language arts achievement" and a 3 in "probable math achievement". "She's much stronger in math. She's one of the top students

Case #7

Brenda

Page 2

in math and the reading thing bothers her a little so she needs a lot of approval in the reading area."

Depending on the subject area she appeared to exhibit different degrees of self confidence. In math "she volunteers quite frequently" and her ability in math seemed to influence his selection of students to answer math questions. An interactive decision while teaching math was the choice of Brenda "just to get it underway here; somebody who probably knew the answer." However, in language arts settings... "Brenda isn't a frequent volunteer but she contributes when I ask her; not a fully developed answer but at least she knows where we're at and that sort of thing." On another occasion, during the reading of the novel by the teacher, Brenda gave a lengthy answer prodded along by sustaining feedback from the teacher. His interactive thoughts during this interchange were: "She was succeeding and so I thought 'Well here's someone who doesn't often get a chance to respond in this situation because there are the lions who are always wanting to answer'. So I thought 'I'll keep her going as long as I can'... Very often I know she has the idea but putting it into words is difficult for her."

She received marks of 2 and 5 in two separate ratings of "maturity". When questioned about this discrepancy in May the teacher explained, "I would use the upper one. Sometimes in our one on one interactions after school she's fairly immature but when it comes down to her approach to her work, the academic side of things, she's very interested, persistent, works very effectively. Those are all signs of maturity. So on one day I must have been thinking of some interaction we had after school. She's the kind of kid who will stand two inches from your nose to make sure that you heard her and go on and on ..."

Additional Information

Age: 8 years 2 months (class mean = 8 years 7 months)

I.Q.: Verbal 113 (class mean = 112.73)  
Quantitative 110 (class mean = 112.65)  
Non -Verbal 110 (class mean = 111.46)

No Engaged Time Data available

Achievement: Language Arts 83% (mean = 85.07)  
Math 93% (mean = 93.64)

Verbal Interaction Data

Brenda	Language Arts	Math	Both Subjects
All Tinit	2.7	2.5	2.6
Product Q	4.7	2.7	3.7
Process Q	2.6	3.1	2.8
Get Atn Q	0.0	0.0	0.0
Comments	0.4	1.7	1.1
Sustaining	4.6	2.0	3.7
Tinit Praise	7.1	4.5	5.9
Tinit Crit	0.0	5.6	2.1
Behavioral	0.5	0.6	0.6
All Sinit	3.4	4.4	3.8
Ss Accepted	12/13	9/12	21/25
Total Verbal	2.9	3.0	3.0

Discussion

Brenda was younger than most students in the class. Her somewhat unruly hair and protruding teeth accounted for her low score on "physical attractiveness". Her scores on I.Q. tests indicated she was of average ability for this class. Her score on the comprehension section of the language arts achievement test was 58/65. The class mean on this section as 63.3 and the city test mean was 56.3. His assessment that she lacked some necessary skills needed for the good

reading group may have been well founded. Her overall achievement in language arts confirmed his lower expectation for her and likewise her good score on the math achievement test reflected his higher assessment of her ability in this subject area.

His effort attribution for her was excellent and her good behavior and cooperation in class made him eager to reward her efforts with supportive praise and sustaining behavior; particularly in language arts. There is no instance of criticism in her 36 language arts contacts with the teacher.

Her overall verbal interaction record indicates a less than average amount of verbal contact with the teacher. Her sought her out (4.7) for language arts Product question Tinitis but overall Tinit percentages for her were low. Perhaps due to her confidence in math she initiated a slightly higher than average percentage of math Sinitis with the teacher.

The teacher described Anna as a very "attractive" (1), "happy" (1), "noticeable" (1), and "creative" (1) little girl. Her parents were interested in her academic progress. Her cultural background was Hungarian and "she was quite interested in talking about her heritage. For example, when they were working on some Christmas things, she talked about Christmas in Hungary and brought a bunch of items and articles and so on to describe the differences."

She was in the attachment group and he assigned a 1 for "wanting to keep for another year". "She has a personality that I like... She's kind of an amusing little girl. I like her... Good sense of humor." She received a 1 for maintaining "eye contact".

She was assigned a 1 and a 4 on two separate ratings of "cooperativeness". On both ratings for "maturity" she received a 2. He noted there were "a few interesting little problems in language arts... more maturational than anything... She does reversals from time to time, that sort of thing, letter reversals in her written work."

He described her as very "calm" (1), "persistent" (1), a "careful deliberate worker" (1), and "motivated to do school work" (2). He assigned a 2 in "probable highest achiever" and 2 for "general intellectual ability". "She's a good solid average student, not in the top two or three in the class, but a good solid student." She received a rating of 2 in "probable achievement in language arts" and a 3 for "probable achievement in math." She was in the better reading group. "She's a better than average reader... better than average in language arts... She's quite well spoken I find, and she is careful about the words she does use. I don't find her to be someone who can't form the



thoughts or who has the thoughts and can't speak them... verbally she's a very effective student...She's careful about what she says when she's in a formal answering situation and I find that her answers are usually pretty high quality answers." However he noted that "some of her word attack skills are not as well developed as you might expect for someone who is as verbally productive as she is... She's a little behind in those things." He had low "concern" (6) about her academic progress.

### Additional Information

Age: 8 years 4 months (mean 8 years 7 months)

I.Q.: Verbal 133 (mean= 112.73)  
 Quantitative 123 (mean = 112.65)  
 Non-Verbal 118 (mean = 111.46)

Achievement: Language Arts 91% (mean = 85.07)  
 Mathematics 95 (mean = 93.64)

Engaged Time: Little data was available

	Teacher-Directed	Self-Paced	Total Time on Task
Language	100%	89%	92%
	16 minutes	45 minutes	61 minutes

### Verbal Information Data

Anna	Language Arts	Math	Both Subjects
All	5.1	2.9	4.1
Prod	6.4	2.5	4.5
Proce	7.0	4.9	6.3
Get	0.0	0.0	0.0
Comme	2.9	2.9	2.9
Sustain	3.8	0.0	2.5
Tinit Prai	3.5	3.0	3.5
Tinit Crit	8.8	4.8	7.3
Behavioral	3.5	1.8	2.8
All Sinit	7.6	4.5	6.4
Ss Accepted	36/36	11/14	47/50
Total Verbal	5.9	3.4	4.8

Discussion

Anna was a bit younger than most of the other students and had very high I.Q. scores. The teacher assigned her high effort attribution scores. The one hour of observation of her work habits showed she was on task a high percentage of the time. She had good achievement scores and achieved a mark of 59/63 on the decoding sub-test in language arts. Although she was assigned a middle expectancy in math, she achieved a better than average mark on the test.

She was considered to be amusing, personable, and verbally skilled. It seemed to be rewarding to the teacher to interact with her. She received a higher than average percentage (4.8) of all interaction with the greater amount occurring in language arts (5.9) compared to math (3.4) settings. In public language arts settings she received 6.3 of the Product questions and 8.0 of the Process questions. In math, although she received a lesser amount of math interaction overall, a ratio of 4.9 Process questions were asked of her and of these 9.1 occurred in private math settings.

The Tinit interactions in which she was involved were mostly instructional interactions of either Process or Product questions. In addition she initiated a high percentage of Sinitis- 7.6 in language arts and 4.5 in math - resulting in a higher than average Sinit (6.4) ratio overall. This implies that she had sufficient self-confidence to initiate contacts with the teacher and the greater percentage of these took place in public settings.

She received a low percentage of behavioral reminders suggesting that her classroom behavior and cooperation was satisfactory despite

the one score of 4 she received on one of the "cooperation" measures. Higher ratios of Tinit Criticism resulted from only 4 such contacts for there were only 55 instances of Tinit Criticism delivered to the whole class.

In all she appeared to be a high expectancy student, who worked hard, was liked by the teacher and who received a high percentage of quality verbal interaction during instruction.

Case #9  
Emily  
Page 1

The teacher described Emily as a very "attractive"(1), "noticeable" (1) and "happy" (1) little girl. She was in the attachment group and received a 2 for "wanting to keep for another year." "Well she's a real nice little girl, a big smile all the time... She's a 'with-it' kid, and I think sort of knows it. She's got a personality that's very attractive to other people...She's one of my real favourites in the class, just a super kid. She's happy, that's the way I see her...She also enjoys a bit of banter with me, that sort of thing." She received a 1 for maintaining "eye contact".

She received a 1 and a 2 on two ratings of "maturity" and a 1 and a 2 on two ratings of "cooperativeness/compliance". The teacher assessed her as 2 in "general intellectual ability", a 2 in "creativity", and 2 in "probable highest achiever". "She's bright. She's actually a pretty good student." He assessed her as 2 for "probable achievement in math" and 3 for "probable achievement in language arts. "Emily has a little trouble with some word recognition things, spellings, and a few items like that... It almost seems like a perceptual distraction/disorder. She sees parts of words but will give a wrong ending, not too frequently. You could hardly notice it. It makes her perhaps a little apprehensive about her reading and so she's a little nervous about it too ... She's one who is really showing improvement in these areas... It's not a major problem... I could say she's not as good in language arts, for example, her reading, because her word recognition skills aren't as strong and yet on the creative side she's quite a creative individual- not as 'up there' as some of them but she's a fairly creative individual who writes stories

that are interesting and imaginative."

He rated her as "motivated to do school work" (2), very "persistent" (1), and a "careful, deliberate worker" (1). He was not "concerned" (7) about her academic progress.

Additional Information

Age: 8 years 10 months (mean = 8 years 7 months)

I.Q.: Verbal 119 (mean = 112.73)

Quantitative 119 (mean = 112.65)

Non-Verbal 110 (mean = 111.46)

Achievement: Language Arts 88 (mean = 85.07)

Mathematics 97 (mean = 93.64)

No engaged time data available.

Verbal Interaction Data

Emily	Language arts	Math	Both Subjects
All Tinit	3.5	3.5	3.5
Product Q	3.3	3.1	3.2
Process Q	4.8	3.9	4.5
Get Atn Q	0.0	0.0	0.0
Comments	2.3	2.5	2.4
Sustaining	2.0	5.2	3.2
Tinit Praise	2.5	5.1	3.6
Tinit Crit	6.9	9.5	8.0
Behavioral	1.8	1.8	1.8
All Sinit	2.6	2.9	2.7
Ss Accepted	12/12	8/9	20/21
Total Verbal	3.2	3.4	3.3

Discussion

Emily was a cooperative and mature little girl who received few behavioral corrections and whose I.Q. scores and achievement scores were

higher than average for this class. The teacher held a lesser expectancy for her in language arts due to some word recognition problems he felt she had but rated her high on her creative work in language arts.

She was seen to be pleasant and he enjoyed interacting with her. She initiated a low percentage of Sinit's with the teacher but more were initiated during private or individual settings in language arts (4.0) and in math (3.6).

Her high percentage of Tinit Criticism resulted from only four such comments out of the 50 the teacher delivered during times Emily was in attendance. She received a good percentage of Process questions in both language arts (4.8) and math (3.9). The researcher asked in June if the teacher would care to make any more statements about Emily as little information had been volunteered about her overall. "Gee, its odd...Very clearly she's one of my favorite people in the class you know and she's just a tremendous little individual as far as I'm concerned...What can I say? She's bright. She's happy."

The teacher described Brent as very "attractive" (1), "noticeable" (1) and "happy" (1). He was in the attachment group and received a 1 in "wanting to keep for another year". The teacher assigned a 1 and a 3 on two separate ratings of "maturity" and a 1 for "general intellectual ability". He was assigned a 1 for "probable highest achiever" and 2 for "creativity". "Well in terms of background experience and so on he's probably the brightest, well no, certainly close, certainly one of the brighter kids in the class... lots on the ball. Verbally he is an extremely bright child whose background of information and experience is well... The travelling he's done this year is really something. His Dad is a fairly successful lawyer and he takes Brent with him on a lot of business trips for a couple of days at a time. One trip he stopped a couple of days in Toronto, New York, Atlanta... I haven't travelled like that in my life...gives him a real sense of size of place and geography or even politics to a degree. He's the one who knows what the election is all about, this sort of thing. And at this grade unless you teach it, most kids are unaware and he's very aware of Canada and the political and provincial boundaries. Other children are not in this class... He has first-hand information. He has a good memory and seems to have a pretty stimulating kind of background."

The teacher was not at all "concerned" about Brent's academic progress. He was assigned a 1 in "probable math achievement" and a 2 in "probable achievement in language arts". "The interesting thing about him is that, especially in something like a written language arts assignment, he doesn't produce the kind of work that you would think, based on his verbal skills,

he would be able to do...It's not because I've been able to detect any deficiency in his skills, it's just this inclination to stall things as much as anything. Not a serious problem." The teacher suggested that perhaps "it doesn't turn him on...I'm not sure whether it's a reluctance to go that extra mile and do that or whether it's a case of not being able to generate the thoughts without questioning or whatever, I don't know. It is kind of interesting."

The teacher rated Brent as very "persistent" (1), a very "careful/worker" (1) and "motivated to do school work" (2). He received a 2 on the "calm" attribute and a 1 and a 4 on two separate ratings of "cooperativeness". "He's an enthusiastic kid... Brent loves to volunteer. One of the problems I have with Brent is getting him not to shout out and very frequently, well he is getting better, but often I have to remind him that 'Brent the procedure we use is hand-raising so I can get to a variety of people'." This behavioral tendency formed an antecedent for an interactive decision to select Brent to give an answer in one instance. "Also I like to satisfy Brent's need to speak out. If I frustrate that then the speaking out behavior is more frequent." His "persistence" seemed somewhat dependent on the subject area in which Brent was involved. "Brent needs a little more direction. He needs a little more telling him to please stick to task than ... "(The children often worked together and were permitted to converse about their work). "If it were creative writing and Brent's chatting, Brent is not going to be on task. If we're working on math Brent may very well be on task. If we're working on another area of language arts Brent may very well be on task."



Case #10  
Brent  
Page 3

Additional Information

Age: 8 years 10 months (mean = 8 years 7 months)

I.Q.: Verbal 127 (mean = 112.73)  
Quantitative 128 (mean = 112.65)  
Non-Verbal 110 (mean = 111.46)

Achievement : Language Arts 96% (mean = 85.07%)  
Mathematics 97 (mean= 93.64%)

Engaged Time Data

Only a small amount of engaged time data is available for Brent

	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	100%	87%	93%
	30 minutes	38 minutes	68 minutes

Verbal Interaction Data

Brent	Language Arts	Math	Both Subjects
All Tinitis	6.5	4.4	5.4
Product Q	6.4	4.5	5.4
Process Q	10.6	5.8	8.7
Get Atn Q	0.0	0.0	0.0
Comments	3.9	3.3	3.6
Sustaining	2.3	5.2	3.4
Tinit Praise	7.2	2.0	4.6
Tinit Criticism	2.9	4.8	3.6
Behavioral	2.8	5.3	4.0
All Sinitis	15.1	11.3	13.4
Ss Accepted	49/57	31/35	80/92
Total Verbal	9.2	6.2	7.7

Discussion

Brent was perceived to be a bright and enthusiastic student whose self confident personality and wealth of background experience prompted

him to make substantial verbal contributions during ongoing instruction.

He was an attachment student for whom the teacher held high expectancy. Brent achieved excellent results on the end of the year exams.

The relatively large proportion of interaction in which Brent was involved is partly explained by the teacher's perception that his general knowledge enabled him to be a source of information for the others, by the fact that he was enthusiastic and wanting to participate, and partly because the teacher recognized that Brent would channel his enthusiasm into disruptive behavior if thwarted in his attempts at interaction.

Brent initiated an unusually high percentage of Sinitis in language arts (15.1) , in math (11.3), and averaging 13.4 overall. Brent was the recipient of 10.6% of the Process questions in language arts and 5.8 in math. He received a high percentage of Tinit Praise (7.2) in language arts but not in math (2.0).

Brent seemed to monopolize more than his share of dyadic verbal interaction. He was a high achieving student with whom the teacher enjoyed interacting and who almost aggressively created more verbal opportunities for himself. He seemed to benefit from a positive halo effect but appeared to deserve the high assessment he received from the teacher.

Simon was described as "attractive" (1), "noticeable" (2) and "happy" (2). He was in the attachment group and was assigned a 1 for "wanting to keep for another year." The teacher described him as "likeable" and "nice to have in the class." His parents were here for a one year sabbatical leave from England. "He started the year in grade 4 but his age (8 years 3 months) is correct for grade 3. He should never have been placed in grade 4 and he was having difficulty there."

Simon received a 1 and a 2 on two separate ratings of "cooperativeness". He was assigned 2's on both ratings of "maturity" and 2 on the "calm" attribute. He received a score of 2 for maintaining "eye contact". For "probable achievement in math" and for "probable achievement in language arts" the teacher assigned a 3 in each case. Simon was rated 2 in "general intellectual ability", 2 for "probable highest achiever", and 1 for "creativity". "He's a very creative individual. He writes real good stories for me... He is verbally quite strong and even his written work is quite imaginative but some of the technical skill is absent and it's largely because of curriculum differences... Simon has a lot to contribute..You've probably picked up that he's fairly silent. I feel his comments are generally of pretty high quality."

In assessing Simon's work habits the teacher assigned a 1 for "persistence", 2 for "careful/deliberate worker", and 3 for "motivation to do school work." "He has some difficulty with eye/hand coordination, although not terribly significant. There is a background of that in the family. The mother has that disability...Though he's persistent enough

that he does it, often the result is not very attractive. The teacher was not "concerned" (7) about Simon's academic progress.

#### Additional Information

Age: 8 years 3 months (mean = 8 years 7 months)

I.Q.: Verbal 126 (mean = 112.73)  
Quantitative 125 (mean = 112.65)  
Non-Verbal 118 (mean = 111.46)

Achievement : Language Arts 91% (mean = 85.07)  
Mathematics 98% (mean = 93.64)

#### Engaged Time Data

Only 2.1 hours of observed time on task data are available.

	Teacher Directed	Self-Paced	Total Time on Task
Language Arts	95% .95 hours	92% 1.11 hours	93% 2.1 hours

#### Verbal Interaction Data

Simon	Language Arts	Math	Both Subjects
All Tinit	4.7	3.5	4.1
Product Q	3.8	2.5	3.2
Process Q	5.5	5.8	5.6
Get Atn Q	6.3	5.0	5.6
Comments	5.5	2.9	4.3
Sustain	2.9	0.0	1.8
Tinit Prai	5.5	4.0	4.8
Tinit Crit	5.9	4.8	5.5
Behavioral	5.7	4.7	5.3
All Sinit	2.3	3.2	2.7
Ss Accepted	10/11	9/10	19/21
Total Verbal	3.9	3.4	3.7

#### Discussion

Although he was rated (2) high for "probable general achiever" the actual subject-specific achievement expectancies assigned were

both 3's which put him in the "middle" expectancy group. In both subjects he made higher marks than the class average so the teacher-recorded expectancies for language arts and math predicted somewhat lower results than he actually achieved. He was rated fairly high on effort expended and that plus a higher than average I.Q. may have accounted for his achievement.

Although (2) quite "noticeable" he was also described as "fairly silent" which may explain his lower than average Sinit ratios. In public settings he was more inclined to initiate math Sinit (5.2) than language arts Sinit (1.1) but overall he averaged in the 2.7% range for Sinit compared to the class average of 4.1%.

He received a lower than class average percentage of Product questions in language arts (3.8) and math (2.5) but a higher than class average percentage of Process questions (5.5 and 5.8 respectively). He received a high percentage of the language arts Process questions (14.0) which were posed in the "good" reading group setting. These ratios of Process questions he received from the teacher indicate a higher teacher-held expectancy for Simon than the "middle" expectancy ratings would suggest.

More of the 4.8 Tinit Praise he received was given during whole class instruction.

The high rates of behavioral reminders result from periodic inattention. Saying his name or asking a Get Attention question were usually sufficient tactics for correcting the situation.

Basically he was a good student who achieved well and who was liked by the teacher.

The teacher described Marilyn as a "nice little girl", "attractive" (1), and "happy" (2). "She gets along well with the other kids in the class." He assigned a fairly low score of 5 for the "noticeable" attribute and a 2 for the "calm" attribute. "She's one of the ones you can miss..It's partly because of her location in the class. She's at the back. It's partly because she's not ... you know, someone like Nicholas demands attention. She doesn't. She's not that kind of individual." She received a 4 (mean 2.6) in "wanting to keep for another year " and he placed her in the indifference group (using the provided definition which implied that the teacher was a bit unsure of a student's academic progress). " I have a general idea of how things are going, where her strengths and weaknesses are generally, but if somebody wanted to pin me down about something specific I'd have to say 'Hey, let me check my records, this sort of thing'...(talking of Marilyn, Sharon, and John, who were all indifference students)...They don't stand out in class. I guess in a sense their demands on me are not as great in both respects; they don't stand out positively and they don't stand out negatively either." He felt generally "blah" about these indifference children although he did not dislike them enough to consider placing them in the rejection category. He perceived Marilyn as having "somewhat negative approaches to some of the tasks, or appearing to have."

She received 2's on both ratings of "cooperativeness" and a 3 and a 5 on two ratings of "maturity". "She's a chatty little thing. She seems like such a sweet little girl, and is, she is a nice little kid, but if I'm not keeping my eye on her she really will chat a lot...She's

perceptive enough to know when to be doing her chatting...Yeah if you ever watch when I've got two groups together, very often she'll be a 'ring in a bunch of chatters up in that group but I have to be at the back. She knows my ability to control her directly is reduced and the time she will be chatting away... Sometimes they ignore the eye contact. (She received a 2 for maintaining "eye contact" generally). It's a little game, you know. It's quite interesting. Marilyn is a little leader there. When I'm not there she'll be chatting with Pamela and with Trisha but back and forth, back and forth and every time I look I see Marilyn sort of...She's certainly interested in what's going on around her. There's not doubt about that!"

The teacher assigned a 6 for "general intellectual ability", a 5 for "probable highest achiever", and a 5 for "creativity". He described her as a "lower than average student in this class." He assigned a 6 for both "probable achievement in language arts" and for "probable achievement in math". She was in the lower reading group.

The teacher rated her as having below average "persistence" (4, mean =2.8), as 3 for being a "careful/deliberate worker" and as 5 for being "motivated to do school work". So his effort attribution for her was fairly low overall. "With a lot of positive reinforcement she will try pretty hard." He was somewhat "concerned" (3) about her academic progress.

A sample of the teacher's interactive thoughts concerning Marilyn reflect his assessment of her ... For one "selection" he had picked her partly because she was in the back row and because "I like to check up and make sure she's got the skill" and on another occasion..." I asked her because she wasn't there at all."

In June the researcher asked the teacher to verify Marilyn's placement in the indifference group. "Marilyn would certainly be put in that category, with the actual definition, although now she doesn't really any more because now, since it was brought to my attention, you know, you start doing some work that way."

Reflecting in June the teacher stated..There were probably others in the class that I should have felt more concern for and didn't. I think of someone like Marilyn, for example, who, you know, was not a very noticeable kind of person in the class. She's not a particularly disruptive individual but she probably deserved more of my time than I ever gave...or if she didn't deserve it, maybe as a professional teacher I should have spotted that and said 'Hey, if I can motivate them to a greater degree, then I can get them going', but we didn't interact...Do you see what I'm saying?"

#### Additional Information

Age: 8 years 1 month (mean = 8 years 7 months)

I.Q.: Verbal 104 (mean = 112.73)

Quantitative 110 (mean = 112.65)

Non-Verbal 97 (mean = 111.46)

Achievement: Language Arts 66% (mean = 85.07)

Mathematics 85 (mean = 93.64)

#### Engaged Time Data

	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	97% 2.41 hours	75% 2.2 hours	86% 4.6 hours
Mathematics	99% 1.36 hours	98% 2.16 hours	98% 3.53 hours
Combined Subjects	97% 3.77 hours	86% 4.36 hours	91% 8.15 hours



Verbal Interaction Data

Marilyn	Language Arts	Math	Both Subjects
All Tinit	3.7	5.0	4.3
Product Q	3.3	5.6	4.4
Process Q	1.5	5.8	3.0
Get Atn Q	12.5	5.0	8.3
Comments	5.9	3.7	4.9
Sustaining	1.9	12.1	5.5
Tinit Praise	3.9	5.1	4.4
Tinit Crit	8.8	0.0	5.5
Behavioral	7.0	4.1	5.8
All Sinit	4.4	3.9	4.2
Ss Accepted	17/21	11/12	28/33
Total Verbal	3.9	4.7	4.3

Discussion

Marilyn was younger than the average age of the class by six months. She received a 3 and a 5 on the two "maturity" ratings. She seemed to have some difficulty attending to task. Scores received on the effort-related variables are in the 3-5 range. Of the 2.2 hours (during five different language arts lessons) of observation during "self-paced" language arts activities, Marilyn was on task only 75% of the time. Over the 2.1 hours of observation of math "self-paced" activities she was observed to be on task for 98% of the time. His expectation scores for both subject areas were 6's and her below class achievement scores verified his predictions for her low academic achievement. Her I.Q. scores were well below average for this particular class.

A number of contributing factors- her younger age, her maturity, her effort, her intelligence- resulted in her lower than average achievement.

Although she was seen as "cooperative" (2 and 2), she caused others to be distracted while she was off task, particularly in small reading group independent activities when the teacher worked with the other group. Although not rated as overly "noticeable"(5), she attracted a lot of Behavioral reminders (5.8) overall with 7.0% occurring in language arts settings. She received 8.3% of Get Attention questions overall with 12.5 occurring in language arts settings generally and 15.4% occurring during "whole class" language arts instruction. This meant the teacher was attempting to keep her attention focused on the lesson in progress.

Her Sinit rate was average; above average in language arts (4.4), which was not usually characteristic of an indifference student.

Overall she received an average amount of dyadic verbal interaction but a closer examination reveals more of the attention she received was of the monitoring sort. The instructional Tinitis (Product questions) she received were lower in language arts (3.3) although they averaged 4.4 overall because of the higher number of Product questions received during math instruction(5.6). However, the Process questions she received totalled 3.0% overall with only 1.5% occurring in language arts settings.

Although he recognized her problems and lack of achievement, perhaps the teacher was discouraged by the lack of apparent effort she appeared to exert overall. At any rate he felt somewhat unhappy at the end of the year with the relationship that had existed between Marilyn and himself and with the fact that she had not achieved a higher level of academic success.

The teacher rated Grant as a very "attractive" (1), "happy" (1), and "noticeable" (1) boy. "I guess if there's a 'typical boy' in quotation marks, he would be it...very interested in sports...plays baseball, soccer, and games like that...a little mischevious at times but lots upstairs and so he can afford the time off." He was placed in the attachment group and had received a 1 in "wanting to keep for another year." "He has a good sense of humor." He was assigned a 1 for maintaining "eye contact" and a 2 for the "calm" attribute.

He received a 2 and a 4 on the two measures of "cooperation/compliance". He would display impatience at times during lessons. "That bugs me. When someone asks, 'Do we get out early' in the middle of a lesson. That tells me...you know...when you have the feeling that a lesson is going badly and then someone pipes up 'Can we get out early?' you feel like strangling someone at that point you know. It's kind of annoying." and on another occasion..."Pace is important. Grant gets a little frustrated with the pace after a while. He's the one who asked 'Can we get going?' and I gave him hell for it. I told him I thought it was inappropriate. What do I do? I don't want to be asked that question. The impatience of youth...maybe I should be more tolerant, I don't know." He was reading a book during the math lesson on another day..."To my chagrin I noticed that Grant was off task but then his reason was that he knew this stuff. Maybe its not fair for me to tell him that he can't do other things when he does know but I sort of insist anyhow...Generally I feel that children should be discreet enough not to be doing those kinds of things. It's more of a general kind of rule and he's not a frequent offender."

Grant kept testing the teacher regarding another general rule that had been made about having to sit on the floor in a group while the teacher read the novel to them. "I feel like an idiot saying 'Hey you can't sit on a chair'." Grant was rated 1 on both measures of "maturity".

The teacher assigned a 2 in "general intellectual ability", 1 for "probable highest achiever", and a 1 in "creativity". "He's a very bright little boy." He was assessed as a 2 in "probable achievement in language arts" and also for "probable achievement in math". The teacher felt he was "excellent in both subject areas."

Grant was rated as 2 in "persistence", 1 in "careful/deliberate worker", and 3 in "motivation to do school work". When asked to clarify his assessment of Grant's work habits the teacher said, "I don't know if that's entirely accurate. It's better than fair. What may have influenced what I put down or said is that he sometimes won't do his work in class time...It's not a case of refusal but he would prefer to take it home... Sometimes staying on task at school is difficult for him, or appears to be, because he doesn't do it. But anytime I say 'Okay, Grant, that's fine, but you best have that done and here tomorrow' he always does it and does it well. So is that lacking in 'persistence'? I don't know."

The teacher was not "concerned" (7) about Grant's academic progress.

#### Additional Information

Age: 8 years 5 months (mean = 8 years 7 months)

I.Q.: Verbal 128 (mean = 112.73)

Quantitative 140 (mean = 112.65)

Non-Verbal 137 (mean = 111.46)

Achievement: Language Arts 93% (mean = 85.07)

Mathematics 98% (mean = 93.64)

Case #13  
Grant  
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Engaged Time Data

	Teacher-Directed	Self-Paced	Total Time on Task
Mathematics	96% 24 minutes	89% 1.25 hours	91% 1.65 hours

Verbal Interaction Data

Grant	Language Arts	Math	Both Subjects
All Tinit	3.3	2.3	2.8
Product Q	4.1	2.1	3.1
Process Q	3.2	1.0	2.5
Get Attn Q	6.3	11.1	8.8
Comments	3.0	2.2	2.6
Sustaining	8.2	0.0	5.5
Tinit Prai	1.7	2.2	1.9
Tinit Crit	0.0	5.6	2.4
Behavioral	3.0	3.2	3.1
All Sinit	2.7	2.6	2.6
Ss Accepted	10/11	7/7	17/18
Total Verbal	3.1	2.4	2.8

Discussion

Grant was a couple of months younger than most class members but he received top scores on the "maturity" ratings. He had extremely high I.Q. scores and was rated high (2's) for expectancy measures. The teacher considered his academic work to be excellent.

His scores of 2 and 4 on the "cooperation" attribute may have been assigned because of his obvious impatience with delays in instruction.

He was well liked and was a member of the attachment group.

The teacher felt that his effort was adequate but not perhaps his best, and he assigned marks ranging from 1 to 3 on the effort-related

Case #13  
Grant  
Page 4

attributes.

It would be reasonable to expect that a high-achieving boy in the attachment group would be involved in a high percentage of dyadic verbal interactions and in addition would create many Sinit opportunities for himself. However, overall his percentage (2.8) of involvement in verbal exchanges was lower than class average. Only language arts Product questions (4.1) were within normal range, while math (2.1) and all Product questions in both subjects (3.1) were less. He received a low ratio (3.2) for language arts Process questions but the ratio of language arts Process questions rose to 5.3 in the reading group setting. In math, the teacher was more inclined to address Product and Process questions to low math achievers and indeed Grant received only 1.0 of Process questions in math settings.

He initiated a low percentage of Sinit (2.6) overall but during reading group settings the ratio of Sinit rose to 5.9%. The Get Attention questions and Tinit Criticism ratios are based on few teacher-delivered instances thus the three Get Attention questions and the one instance of Criticism he received resulted in inflated percentages. In all there are surprisingly few verbal contacts with Grant. It may simply reflect the teacher's perception that he was an excellent student who needed little assistance.

If I.Q. scores are a good indication of potential and if effort attribution was accurate then Grant seemed to be able to achieve excellent results without having to exert any more effort than was necessary for the task.

Ian was described as a very "attractive" (1), "noticeable" (2) but very "unhappy" (7) little boy. The teacher assigned a 3 in "wanting to keep for another year" and was very "concerned" (1) about him. "Ian has had a lot of school problems. Ever since the outset he's really had a lot of difficulty... He repeated Grade One. In a sense he's 'turned off' school... He's sort of laid-back, easy-going, and what the hell it'll all come out in the wash sort of thing... Ian was assigned a 3 for maintaining "eye contact"."

" Ian has eye/hand coordination problems making any written assignment difficult for him...Part of the problem is this year his Mom died after a lengthy illness...He's handled it very well but sometimes he just 'spaces out' and I let him go. I don't want to put too much pressure on a kid who has a lot to live with right now...It just isn't the time to put intensive catch-up kinds of activities on him..."

Ian was placed in the concern group. "I could spend a lot of time with someone like Ian. Mostly cause I like the kid, I guess, and because he has some problems...Ian isn't the brightest lad across the board, he just isn't . Not withstanding that he's a nice lad to work with. He's a kid who, I think with a lot of attention, a lot of drill, a lot of work-well he's not going to be a 'scholar' but obviously I think a one on one situation would improve whatever skill level...whether it would be retained, I don't know ... I think I understand his situation. It's been a pretty rugged year for him.

Ian received a low rating (7) in "general intellectual ability" and received a 4 for "creativity". " I wouldn't say that he has an awful lot

of ability" and in addition he received the lowest expectancy rating of 7 for both math and language arts achievement and a 7 for

Case #14

Ian

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"probable highest achiever". "With a lot of individual help he comes along, but it's painstaking in math. Math is the area I've probably spent the most time with him on. He's come along fairly well dealing with things that I didn't think at the outset he would be able to do."

Ian was in the lower reading group and was considered to be at the bottom of that group. "Both Ian and Tom go to the resource room for individual help in language arts three times a week" (two of which were during math lessons). "They miss more than I'd like but they're receiving the extra help in the language arts area and you sort of have to weigh the benefits you know.." The teacher found that their returning during math lessons often created a distraction. "It's hard enough to keep them on task when they're here for the whole lesson but when they're sort of wandering in then it becomes more difficult because I have to very carefully go over directions with these two usually and often it's right in the middle of the lesson and it really interrupts the flow and it bugs me a bit..." On one such occasion Ian requested to go back out to the washroom and was refused permission and then he informed the teacher he had left his pencil at the resource room. The teacher's interactive thought at this moment was..."Well I don't often think 'kill' but, you know, I sort of say to myself 'Gee what's going through this kid's head?' You know it's pretty scattered thinking... It's pretty distracting. I think I'm a little annoyed, but with Ian again, I don't like to show my annoyance.



In the language arts setting of oral reading of the novel by the teacher Ian was "turned off". "He doesn't know what's going on. I basically avoid asking him questions" in that setting.

Ian received a low score (7) for being a "careful/deliberate worker" and also for the "calm/good self control" dimension. The teacher assigned a 7 for both "persistence" and "motivation to do school work". His behavior was inconsistent in that "he tunes in and out for days and then works hard... I can't figure him out. At times I can't anyway. He seems to respond well to positive reinforcement at times..It's really hard to stay on task given the kind of situation that he has...From class experience Ian 'is quite often off task, specially if he's finding a task difficult." A reported interactive decision occurred when the teacher perceived that "he wasn't paying attention, or I wasn't satisfied that he was, and I thought 'proximity' will help. So I sat on his desk. He'll work sporadically while I'm there. You see he can explain this to me. He can tell me....then I would look over and I'd see he was doing nothing. The effort wasn't too great."

Concerning teacher-directed small group reading situations the teacher commented, "One thing I think it would be safe to say is that Ian doesn't concentrate on the task at hand, even in a situation like that. He's yawning, stretching....Ian spends a lot of time off task and I know that and one has to sort of balance off how much time to spend keeping him on task specifically and that's a judgment that you have to make and its difficult...or maybe I could ask you..'How much time should I spend keeping that child on task?' Even if nothing is going on essentially he'll daydream. I would hate to guess what percentage of his time he spends off task. God knows where he is ... "

The teacher felt that Ian was "approachable" and although he had learning problems, Ian appeared to be "open" about them. "The thing is he doesn't see himself as a very bright individual. That can often be a cause of unhappiness. In his interaction with peers I think he does fine but I don't think there's any 'future' to his vision of himself... I'm pretty anxious that he will at least leave grade 3 feeling that he's a decent sort of fellow anyway with some of the basic skills that are required... School is not going to be easy for him. It's probably going to get harder for him ..."

The teacher assigned a 5 and a 6 in the two ratings of "maturity" and a 4 and a 7 on the two measures of "cooperation". An observation of a videotaped lesson was... "I was a little annoyed with him there because he was being quite disruptive. Not only that but he and Tom were off task completely and indeed as it turned out later, when I went back he hadn't finished his work. I forgave him though." Of Ian and Bonnie (the concern girl) the teacher said, "They really can't keep their act together as far as having their equipment and so on and it can be a little frustrating at times when you have to start each lesson assembling materials for them. I'm not inclined to provide them with a new pencil each day. I'm just not going to do it."

When requested in June to identify which was the more accurate rating for "cooperation" the teacher stated, "I'd say it was the lower, toward the lower side than the medium. You know how it is with Ian but he has fluctuations too. There are rare times when Ian will really, if you encourage him and so on, things are going well, then he is very "cooperative". There are other times when he's just not interested so it's difficult. But on balance I would put him on the lower side."

Another reflection in June was "Ian, who had some very obvious problems, probably wasn't the most 'responsive' kid I've ever taught in terms of responding to the kinds of approaches that I took. At the same time, I felt a great deal of concern for him."

#### Additional Information

Age: 9 years 5 months (mean = 8 years 7 months)

I.Q.: Verbal 80 (mean = 112.73)  
 Quantitative 82 (mean = 112.65)  
 Non-Verbal 92 (mean = 111.46)

Achievement : Language arts 69% (mean 85.07)  
 Math .....unfortunately he moved away before taking this test.

#### Engaged Time Data

	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	75% 3.56 hours	47% 2.85 hours	62% 6.4 hours
Mathematics	53% .50 hours	72% 1.25 hours	67% 1.75 hours
Combined Subjects	72% 4.06 hours	54% 4.1 hours	63% 8.16 hours

#### Verbal Interaction Data

Ian	Language Arts	Mathematics	Both Subjects
All Tinitis	6.7	9.3	7.8
Product Q	5.6	9.0	7.1
Process Q	1.5	13.7	4.7
Get Atn Q	18.8	29.1	24.2
Comments	10.7	8.1	9.6
Sustaining	6.7	8.7	7.3
Tinit Prai	7.0	5.1	6.3
Tinit Crit	11.8	5.6	9.6
Behavioral	10.5	7.7	9.4
All Sinitis	4.4	5.6	4.8
Ss Accepted	17/21	14/15	31/36
Total Verbal	6.0	8.3	6.9

Discussion

The teacher displayed a considerable amount of empathy and understanding toward Ian but at the same time wanted to prod and encourage him along. It often seemed a hopeless and thankless task but occasionally a response of sustained effort on Ian's part encouraged the teacher to keep trying to accomplish as much as possible with him.

Ian was involved in a high percentage of verbal interaction with the teacher. In all, he received 7.8% of the teacher-initiated interaction for the class during the times he was in the room. More of this occurred in math (8.3) than in language arts (6.0) and much of it took the form of Explanations (15.1) and Sustaining behavior (7.3). Part of the attention in math was due to the fact that he missed part of math time twice a week while at resource room and the teacher had to make sure that he could easily rejoin class activities.

He was asked more Product questions (9.0) in math and considerably more Process questions (13.7) in math than in language arts (only 1.5%). This could be due to Good and Grouws' (1977) finding that process questions were effectively used during math explanations. The general tendency of this teacher was not to ask as many Process questions in math as he posed in language arts.

In keeping with the teacher's perception of Ian's short attention span, he received a high percentage of Get Attention questions (24.2%). More of these Get Attention questions were posed in math (29.4%) than in language arts (18.8). He often received substantial criticism and behavioral reminders for the same reasons although the teacher tried not

to show his annoyance. Ian received a high percentage of

praise for his efforts in language arts (7.0) and math (5.1).

In all Ian monopolized a lot of teacher verbal attention because he was a likeable, low-achieving student whom the teacher wanted to help and encourage. Ian was a concern student, and because he was frequently perceived to be off task and not paying attention he received large amounts of corrective and sustaining verbal behavior as well.

The teacher described Tom as a fairly "attractive" (2) and "noticeable" (2) boy. He rated him as 3 on the "happy" attribute (mean = 2.65) and reasoned that his difficulties with schoolwork were disturbing to Tom. "It's the self image. He always has a big smile on his face, but how much does that mean?" Tom was assigned a 4 for maintaining "eye contact". The teacher was greatly "concerned" (1) about Tom's academic progress and had placed him in the concern attitude group. Tom received a 4 in "wanting to keep for another year."

The teacher assigned a 6 for "general intellectual ability". "Across the board he just isn't terribly bright...Progress with him is pretty painstaking." Tom would be moving at the end of the year to another school district otherwise the teacher would have attempted to have him placed in a special class situation. "I would have had him tested to see if he was a reasonable applicant for adaptation." The teacher was considering failing him. His parents were very concerned about him. His younger brother was one year behind in school and they did not want both boys to be in the same grade. "I have mixed feelings about it but I'm going to go with their feelings on it...Actually, given the success rate of repeaters, I think they're right too...Well it doesn't matter to me...You know, the kid likes himself and if I do that, there will probably be enough rivalry develop that would make things difficult..."

The teacher assigned a 7 for both "probable achievement in math" and for "probable achievement in language arts". He assigned a 6 for both "probable highest achiever" and for "creativity". Tom was in the lower reading group and was considered to be "one of the lowest in the group"...He doesn't read in a flowing fashion...He does have trouble

with word recognition sometimes. Tom attended resource room for individual help in language arts three times a week and as a result missed some instructional time in math.

Case #15  
Tom  
Page 2

He had "quite severe eye/hand coordination problems which make written assignments painful for him". He was assigned a 6 for both "motivation to do school work" and for being a "careful/deliberate worker." He received a 7 on the "persistence" attribute. He was assigned a score of 5 for the "calm/good self control" attribute. On the two measures of "maturity", Tom received a 6 and a 7 and for both measures of "cooperation" he received a 4 and a 6 respectively. "Tom needs a lot of work and tries pretty hard. He's willing to, intermittently at least, he's willing to force himself to concentrate...Some things he will really strive to complete and finish and other times he's sort of not willing to do that." The teacher described him as "open" and "approachable" regarding his learning difficulties,

In the June interview the teacher was greatly encouraged by Tom's test results and his recent academic effort. "What a super job this kid's been doing. He's been working very hard. His parents have been working hard with him at home. He's been getting some positive results and feels a lot better about what he's doing, of course. He can't spell to save his life and he still doesn't transfer but he'll memorize those words and he gets one hundred percent on them ... and with math tests, if you know your basics and drill, drill, drill... that has made all the difference in the world..."

"His reading - he was in the third percentile in decoding and in the

eleventh in comprehension last year and this year

he moved to about the 35th. It's a pretty marked improvement...His math score is 53 out of 60... I wouldn't fail him now... His scores are high enough..He's got lots of problems and he's going to need understanding teachers but I wouldn't fail him now...

#### Additional Information

Age: 8 years 4 months (mean= 8 years 7 months)

I.Q.: Verbal 96 (mean = 112.73)

Quantitative 103 (mean 112.65)

Non-Verbal 103 (mean = 111.46)

Achievement: Language Arts 71% (mean 85.07%)

Mathematics 88% (mean = 93.64)

#### Engaged Time Data

	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	84% 2.53 hours	58% 3.08 hours	70% 5.61 hours
Mathematics	64% .83 hours	52% 1.75 hours	56% 2.58 hours
Both Subjects	79% 3.36 hours	56% 4.83 hours	66% 8.2 hours

#### Discussion

Tom was a few months younger than the average age for this class and he was considered to be quite immature by the teacher. His I.Q. scores were well below average for this particular class and the teacher assessments of his general intellectual ability, his creativity, and his expected achievement were very low.

Tom was pleasant and the sporadic effort he exerted was mutually encouraging to both himself and the teacher.



Case #15  
Tom  
Page 4

Verbal Interaction Data

Tom	Language Arts	Mathematics	Both Subjects
All Tinit	4.8	7.8	6.0
Product Q	4.6	7.1	5.6
Process Q	3.1	5.7	3.8
Get Atn Q	0.0	0.0	0.0
Comments	5.6	11.7	8.2
Sustain	3.3	2.8	3.1
Tinit Prai	3.5	11.6	6.6
Tinit Crit	0.0	0.0	0.0
Behavioral	5.3	9.0	6.6
All Sinit	6.5	4.4	5.8
Ss Accepted	28/29	8/11	36/40
Total Verbal	5.3	6.8	5.9

The engaged time data represented 8.2 hours and showed that he was only on task approximately two-thirds of the time overall, and was off task even more during independent self-paced activities. He often found the work discouraging, especially written work, and tended to become distracted quite easily.

His parents, who were most concerned offered help and encouragement at home and the concerted effort resulted in reasonable achievement by the end of the year. His mark in language arts was 14 points lower than the class average mark but his math mark was only five points lower than the class average. On balance, the teacher felt that with continued effort Tom could continue to experience a certain amount of success in school. In June, because of all the hard work Tom had been doing the teacher remarked, "Tom is kind of a rewarding experience right now."

Tom received higher than average ratios of verbal interaction overall.

His ratio of Product questions was 4.6 in language arts compared to 7.1% in math. For both subjects he received more of the Product questions in individual settings (12.5 in individual language arts settings, and 13.5 in individual math settings). He received a high ratio of Praise overall with 3.5 occurring in language arts ( 7.7 in the poor reading group instructional setting) and 11.6% of Praise occurring in math ( 17.4% in self-paced activities and 8.7 in public math settings). He received no instances of Get Attention questions and no Criticism at all. Higher than average amounts of Behavioral reminders were necessary, particularly in math settings.

Tom initiated a great many Sinitis with 5.8% occurring overall and 6.5 in language arts and 4.4 in math. He was not hesitant to ask the teacher for help and assistance when he needed it.

Tom was a low achieving student who tried hard at times. He concerned the teacher who was willing to help and encourage him. He was able to command considerable verbal attention from the teacher and, as it turned out, his gains in achievement over last year's results were a source of great satisfaction to everybody concerned.

Case #15  
Tom  
Page 5

Matt was described as an "attractive" (1), "happy" (2), but not all that "noticeable" (4; mean =2.8) boy. "He's not a demanding individual in the classroom but he's sure a nice boy." He was assigned a 2 for maintaining "eye contact" and a 2 in "wanting to keep for another year." He was placed in the attachment group. "He's in with the sporting thing so he's got lots of after-school friends and so on."

Matt was assigned 2's for "probable highest achiever", for "probable achievement in language arts", and for "creativity". He received 3's for "probable achievement in math", and for "general intellectual ability". "Matt is a better than average student. He's by no means the top student in the class. He's pretty good at most of the things that he does."

Matt was rated as 2 on the "calm" attribute and was considered a fairly "careful/deliberate worker" (2), and "persistent" (2). He was assigned a 3 for "motivation to do school work." "Sometimes he's a little slower than I would like him to be...He's not the fastest worker but he's an accurate and methodical worker who is a pretty bright fellow... His pace is a little slow, that's all." The teacher was not "concerned" (7) about Matt's academic progress. He received a 2 and a 3 on the two measures of "cooperation" and a 2 and a 3 for both measures of "maturity". Overall the teacher provided little information about Matt during the interviews.

#### Additional Information

Age: 8 years 10 months (mean 8 years 7 months)

I.Q.: Verbal 114 (mean= 112.73)  
Quantitative 122 (mean= 112.65)  
Non-Verbal 130 (mean= 111.46)

Achievement: Language Arts 93% (mean= 85.07%)  
Mathematics 95 (mean= 93.64%)

No Engaged Time Data available.

Verbal Interaction Data

Matthew	Language Arts	Mathematics	Both Subjects
All Tinit	5.1	2.7	4.0
Product Q	4.9	1.7	3.3
Process Q	6.5	2.9	5.3
Get Atn Q	6.3	0.0	2.8
Comments	4.0	3.3	3.7
Sustain	4.8	1.7	3.7
Tinit Prai	4.7	2.0	3.5
Tinit Crit	0.0	0.0	0.0
Behavioral	3.9	2.9	3.5
All Sinit	4.0	2.9	3.6
Ss Accepted	19/19	7/9	26/28
Total Verbal	4.7	2.8	3.9

Discussion

Matt had more ability than was readily apparent if I.Q. scores are any indication. He was quiet and not as noticeable as other students. His overall Sinit percentage is less than average which implies that he was not overly assertive. Although the teacher held a high effort attribution for him, his slow working pace may have influenced the teacher's perception of his ability. He was assigned high expectancy scores for "probable highest achiever" and for language arts achievement but only middle expectancy scores for math achievement and for general intellectual ability. It looked as though he should have

been a top math student as the potential seems to have been there. The verbal interaction during math was curiously lower than during language arts instruction. He received less than half of the amount of Product and Process questions he received in language arts and he approached the teacher with fewer Sinitis during math instruction.

Disciplinary contacts were lower than class average which provides some indication of his classroom behavior and cooperation.

Matt's total Tinit percentage was an average 4.0. Most of these (4.6) occurred in large group settings. Of the 3.3 Product questions ratio all were posed during large group instruction with none involving Matt in either individual group or small group settings. He did receive a higher than class average amount of Process questions indicating that the teacher felt he was capable of answering high level questions. The greater percentage of these Process questions occurred in large group settings during language arts instruction.

The teacher seemed to lack any additional background information about Matt but considered him to be well-liked and an able student.

John was portrayed as a fairly "happy" (2) boy but a bit less "attractive" (2; mean = 1.65) and less "noticeable" (3; mean = 2.8) than other classmates.

John was assigned a 4 for both "general intellectual ability" and for "probable highest achiever" and 2 for the "creativity" attribute. He was rated as 3 for "probable achievement in language arts" and 4 for "probable achievement in math". He was in the good reading group. "He's somebody I would typify as being a reasonable, good, average student—nothing outstanding but nothing I need to worry about a lot...In terms of academics if I wanted to put my fingers on where he's at I might have a little more trouble doing that." The teacher was slightly "concerned" (3) about his academic progress.

John received ratings of 3 and 5 on the two measures of "cooperation/compliance" and a 5 on both ratings of "maturity". "John is one of the youngest kids in the class. He's fairly bright and I think any problems that John has are related to age level and maturation... I would typify him as a little immature in some of his dealings with me and with some of the other kids as well... Probably given the catch-up in maturity he would probably be a very solid student." He was assigned a 3 for maintaining "eye contact".

You know, some kids are leaders, and I'm not saying he isn't or won't be, but he's younger. He's not the most visible person in the class."

John was assigned a 3 for "motivation to do school work", 3 for "persistence" and 4 for both "careful/deliberate worker" and the "calm" attribute. John exhibited behaviors which the teacher found off-putting.

Case #17  
John  
Page 2

The teacher had reminded him during class to buy a scribbler instead of having to use sheets of paper. "He hasn't had one all year. There's no problem with money. It's just he hasn't bothered to."

"Occasionally, almost in a purposeful way, he's negative and thinks it's cute to tease a little bit... There are days when I think he doesn't pay attention as closely as he ought to and so he doesn't know quite where we are... This morning when I was talking to him about spelling, that was earlier on, he basically was being a bit lazy. He wanted me to give him some information and he had the information." And on another occasion..."The only one who didn't get the directions there was John. Oh man, that annoys me cause he'll do that sometimes. He must just click off. Cause when everybody else is getting it and one kid isn't, then that's listening... It's too bad the camera isn't on him because he must be fiddling around or phased out or dazed out ... I had asked him a question as we went around. He was very insistent. You see he makes a hell of a lot of noise until you ask him a question, quite often. He'll do things like that... Here's when we're doing the estimating and the measuring with the card of the other shape and he made a heck of a racket and he did have it done and that was fine but he insisted that I ask him and I was basically finished with that part of it but he still had his hand up and he was wiggling and jiggling and so I thought 'Well I may as well ask him'."

While confirming the rating of "calm" (4)... "Well you know the kind of demands that he makes when he wants to volunteer. It's not sufficient to put up a hand. It has to be 'Oh, Oh, Oh,' and you know

this kind of thing...Sort of lacking in self control."

The teacher felt these shortcomings in behavior "sort of coincide with the maturity thing."

John was rated as 4 in "wanting to keep for another year" (mean= 2.69) and he was placed in the indifference group. As for others placed in this attitude group the teacher felt that John stood out "neither positively or negatively in class" and generally felt "blah" or "indifferent" about him.

#### Additional Information

Age: 8 years 3 months (mean = 8 years 7 months)

I.Q.: Verbal 113 (mean = 112.73)

Quantitative 104 (mean = 112.65)

Non-Verbal 118 (mean = 111.46)

Achievement : Language Arts 82% (mean 85.07)

Mathematics 92% (mean 93.64)

#### Engaged Time Data

	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	85% 41 minutes	77% 22 minutes	83% 63 minutes

#### Discussion

John was seen to be a fairly immature little boy who, at times, exhibited irritating behavior and whose attention often wandered from the lesson. As this necessitated extra monitoring behavior from the teacher he was seen to be lacking in the "calm/self control"

(4) area as well as being somewhat uncooperative overall.

The assigned effort-related scores were in the 3 to 4 range which implied that he did not try as hard as he might and did not exhibit much enthusiasm at times. The teacher liked him less well than others in the class and assigned him to the indifference group.



Verbal Interaction Data

John	Language Arts	Mathematics	Both Subjects
All Tinit	5.4	5.7	5.5
Product Q	4.9	5.5	5.2
Process Q	6.0	3.5	5.2
Get Atn Q	0.0	5.9	3.1
Comments	4.9	6.7	5.7
Tinit Prai	6.1	4.1	5.3
Tinit Crit	6.1	4.1	5.3
Behavioral	5.6	6.7	6.0
All Sinit	1.7	2.4	2.0
Ss Accepted	7/7	5/6	12/13
Total Verbal	4.3	4.8	4.5

His expectancy scores were in the 3 to 4 range which projected "average" achievement of end of the year results. He made below average marks in both language arts and math.

John received higher than average ratios for verbal attention which is unusual for an indifference student. Most of this attention consisted of Tinit Process questions, Tinit Product questions and Tinit Comments. Although somewhat inflated, the Tinit Criticism ratios indicate that it was sometimes considered necessary for the teacher to address such comments to John but most of these occurred on a one to one basis in private settings.

A high percentage (5.9) of Get Attention questions were posed in math to keep him on task. (The researcher noted that he would sometimes sit and just stare ahead, looking somewhat "blank" for periods of time. This particular behavior is one associated with indifference students from other studies.)

Conversely, in keeping with typical indifference student behavior, John

initiated few Sinitis with the teacher. Most of these

did occur during whole class settings but the overall percentage of Sinitis was lower than class average. ,

Although the teacher kept in constant contact with him and afforded high percentages of instructional interaction, John chose not to reciprocate to any great extent by initiating contacts with the teacher.

Case #18  
Bonnie  
Page 1

The teacher perceived Bonnie to be relatively "unattractive" (4, mean=1.65), not all that "noticeable" (5, mean=2.81), and a very "unhappy" (7) little girl who had a lot of problems. "She's hyperkinetic and on medication which slows her down. Some days she's 'not here'. Her mother manipulates her medication and I think if Bonnie seems to be a little rambunctious, Bonnie's mother ups the dosage of it." In May he added, "She goes through phases too. To what degree the drugs have an effect on her mood I really can't say. I know, for example, last week she was down in the doldrums. Well it wasn't the drug thing it was that Mom and Dad were out of town, gone on a holiday somewhere. That happens to lots of kids but they don't respond in the same way. It really seems to have an effect on her."

"She's had severe eye/hand coordination difficulties. She's very slow at any written assignment." Concerning her drawing in the hands on the clock faces in math the teacher explained, "Her handwriting capability is such that sometimes you can't tell where something is pointing. So anyway I had the impression that she had the idea despite the drawing itself... I should show you her handwriting scribbler. It's 'something else'. She's coming along but it's slow progress and she knows it...If you asked her to sit down and write the letters of the alphabet cursive style, or even print them, it would take her... well, if you didn't supervise her it wouldn't be done...It's very discouraging for her to have to do written work. I try not to put too much pressure on her for written work, you know. She'll sometimes play that off against me saying, 'Well should I only do this much?' and if it's a reasonable amount I'll say, 'Yeah, that will be fine.' ... In a timed math test, for example, if I gave 30 practice questions, she'll get six done and

Case #18  
Bonnie  
Page 2

and I'll say to her 'Well that's enough. I can see that you know how to do that,' this sort of thing. But she knows exactly what's going on and she finds that quite frustrating... When she first came to me in the beginning of the year she was almost a disaster. The 'avoidance' techniques she had developed were many and varied and inventive and long lasting and so on... We had to have some frank discussions about some of the problems she has and she's very aware of the difficulties she has... My approach now is that if I see sort of a backslide into some of the old habits, then I try and jump on her pretty quickly... I'm not big on keeping kids after school. Yesterday, during art, I had Bonnie working because essentially, almost in an act of defiance, she had not done some work hoping I'd say 'Well', or just ignore. I decided I'm not ignoring that!... So she spent the better part of a period doing what should normally take even her only twenty minutes... As I'd mentioned she was very poor at the first of the year, just getting organized and finding things. If I didn't say anything to her she wouldn't work all day. She wouldn't disrupt at all but she wouldn't do any work. She's not anything like that now but of late she isn't as good as she has been and I decided we're reaching the end of the year. 'Let's try and straighten ourselves out'... Then she tells me quite a few little fibs about where her work is and who did this or who did that. She's quite adept at avoidance techniques although they don't work too well with me anymore."

During one recess the teacher spoke to her privately. "She initially tried to blame everybody else. 'Nick's bugging me.' Well I had a chat with her telling her that 'Hey, we've got to get it together. The work has to be done.' And it's not because she's having difficulty with the

work, it's the other thing- getting herself organized, getting going. Today she's a bit 'spaced out' but she's not angry with me for having said these sorts of things."

Case #18  
Bonnie  
Page 3

The teacher assigned a 5 (mean=3.7) for "general intellectual ability", a 4 (mean=3.3) for "probable highest achiever", and a 2 (mean=3.03) for "creativity". "She's bright enough, good solid average student. Of course, this is typical of a kid with her disabilities. She's a bright child." He assigned a 7 for "probable achievement in math" but had difficulty assigning a ranking for "probable achievement in language arts". "She's better in language arts except that the physical aspect of writing is so difficult for her that it can be frustrating... Here's a dilemma... Well it is achievement... Verbally she's fine-creative, imaginative, perceptive- all of those things but if you asked me how she is going to achieve on a year end test which requires other skills as well, then my answer would be that she's somewhere here." He assigned a 5 (mean=3.69) for "probable achievement in language arts". She was in the poor reading group but primarily because of eye/hand coordination problems. "She reads quite nicely orally, very expressive and she has good word recognition skills and good comprehension skills and can express them very adequately in the oral mode... Verbally she is reasonably creative. She can relate some interesting stories and experiences in an effective way. Her word usage is pretty solid so she expresses herself relatively well when I can persuade her that this is something she ought to do... If she could keep up with the written aspect I could probably have her in the other (good) group. Indeed, I think she reads well orally and with better comprehension than some of the people that I have back there but there's the other work load. They

have to do more independent work at the back...

The reason she goes to resource room is more for the one-on-one attention than anything else because she's a good reader. She responds pretty well to a lot of positive reinforcement."

Bonnie received low scores on the work-related attributes:

"careful/deliberate worker" (7), "persistent" worker (7), "motivated to do school work" (7), and for possessing "calm/good self control" (6).

"She's a frustrated girl in a lot of ways because she knows that she's bright but at the same time keeping up with the brighter members of the class is something that she just has to say 'Well mentally I can do that but I'm unable to...' She knows how to do all of these things but actually the physical aspect of writing it down...She's discouraged and she doesn't work at it all the time."

An interactive reflection while watching a videotaped short math quiz in progress... "I stand there quite a while at Bonnie because I know she knows a heck of a lot more than she ever does and even though it's a written thing and she has difficulty with that- nevertheless it's just a case of writing numbers and concentrating long enough to figure answers and while I stood there she did seven or eight in a row and really produced- because I was there! She wouldn't have done it normally ..." He returned to stand beside her minutes later after he had moved on.. "She stopped. As soon as I'd left she'd stopped."

She was assigned a 4 and a 6 on the two ratings of "cooperation" and a 5 and a 6 on the two ratings of "maturity".

At times she's been upset with the peer group things. Kids are not as kind to her as they might be. At the same time it's a two-way street. It always is with kids." The teacher noted that Bonnie was

Case #18  
Bonnie  
Page 5

sometimes 'isolated' in playground situations. "It depends on the week and there are times when she completely isolates herself and...Of course, there's always a conflict that precedes the isolation and so she has some problems in that area at various times.. ..inconsistent in that way."

When questioned as to whether her medical problem affected his perception of her he replied, "Yes, it does. The tendency might be to say that this girl has a problem but it's being looked after medically but I have to deal with her within a certain framework. It's a little different from the class."

She was assigned a 3 for maintaining "eye contact" and was assigned a 4 in "wanting to keep for another year." She "concerned" him very much (1) and he placed her in the concern attitude group. "In terms of personality my first choice for the group would be Bonnie." In June he reaffirmed his concern for her. "I'm really concerned about her.. I'm concerned that she's emotionally disturbed...She's just so up and down and has such wide swings in mood and so on..." Although the family was very obviously well-to-do and appeared as if they were supportive of her, "the girl's very unhappy, quite frankly. I'm really quite concerned about her but I don't know if all my attention would do any good... I'm really concerned about her state of mind..."

Additional Information

Age: 8 years 3 months (mean = 8 years 7 months)

I.Q.: Verbal 118 (mean = 112.73)

Quantitative 104 (mean 112.65)

Non-Verbal 102 (mean = 111.46)

Achievement: Language Arts 89% (mean 85.07%)

Mathematics 80 (mean = 93.64%)

No Engaged Time data available.

Case #18  
Bonnie  
Page 6

Verbal Interaction Data

Bonnie	Language Arts	Mathematics	Both Subjects
All Tinitis	4.6	4.3	4.5
Product Q	4.9	3.8	4.4
Process Q	2.1	4.2	2.9
Get Atn Q	0.0	0.0	0.0
Sustaining	2.7	0.0	1.8
Tinit Prai	2.4	7.1	4.8
Tinit Crit	0.0	0.0	0.0
Behavioral	5.6	3.0	4.4
Comments	6.3	7.0	6.7
All Sinitis	2.0	1.8	1.9
Ss Accepted	7/7	4/4	11/11
Total Verbal	3.8	3.7	3.7

Discussion

Bonnie was younger than most of her classmates and was deemed to be quite immature by the teacher.

The typical concern student is a low achiever of low intelligence but whose effort encourages the teacher to keep working with such a child. His problems are mainly academic in nature. Bonnie's case was somewhat different in that she was reasonably intelligent, could do the work but exerted little effort. She was almost continually discouraged. Her medical and emotional problems greatly interfered with academic enthusiasm and progress and the physical problems of coordination only exacerbated her difficulties.

The teacher's perception of his role and responsibility can be seen clearly in his interaction with Bonnie. He privately revealed a lot of empathy and concern for her but when working with her, he firmly



Case #18  
Bonnie  
Page 7

insisted that she work up to the level he felt was manageable and reasonably possible for her. He talked to her directly about her academic problems in an understanding way and helped and encouraged her to stay on task and to keep trying.

Therefore she required a great deal of supervision and monitoring from the teacher who experienced few rewards from working with her. Perhaps he felt that because many of the problems she experienced had external causes he seemed willing to maintain a consistently supportive effort in working with her. He recognized her academic strengths and weaknesses and felt she was capable of more than she was physically able or motivated to do. Her language arts mark was above class average which shows she did have ability there which could be demonstrated at times. His expectancy for math achievement had been low and her mark received was lower than class average by about 13 points.

Her verbal interaction percentages are lower than average and those that occurred were mostly Tinit Product questions or Comments containing either Behavioral reminders or Praise. The greatest percentage of these verbal interactions occurred in the small group setting or while she worked independently in individual settings. She received a lesser amount of Process questions overall. On no occasion did she receive any Get Attention questions or Tinit Criticism for although such interactions might have been appropriate the teacher hesitated to provide negative feedback to her.

She initiated a low ratio of Sinitis overall and did not seem to approach the teacher when she experienced difficulty. However, he

was quick to spot her dilemma and to provide the required assistance.

Case #18  
Bonnie  
Page 8

She was a very unhappy and discouraged child who had many problems which the teacher could not solve. The resource room appointments were primarily set up to help to provide some extra attention and support for her but it looked as though overall the teacher felt that Bonnie's problems were only getting worse and he was still most concerned about her at the end of the year.

Case #19  
Nicholas  
Page 1

Nicholas was rated as a very "attractive" (1), very "noticeable" (1) and fairly "happy" (2) boy. He was actively involved in baseball, soccer, and other games with the boys in his class.

From the previous year's reports his parents had been led to believe that Nick was a much better student. They were most concerned about this teacher's assessment of Nick's level but agreed that it was more realistic. "They're nice folks. They're a little older. They've basically raised their family and they are involved in a lot of things. Nick is the youngest child by quite a number of years. He has everything that you could imagine that could be bought and I'm wondering if there's more money spent than time and that might partially explain his need for attention - as much attention as he demands in a class setting. His Dad just says 'Well he's spoiled'. 'Well,' I said, 'I'm not going to argue with you on that one'...

"Nick's an imp is as good a way of putting it as any. I like him though." One day he wore an obscene T-shirt to class. On another occasion he had blood smeared all over his arm. After a particularly squirmy day the teacher remarked, "He walked in here this morning and I could see right now Nick's in one of those humours and I know damn well we're in for a good day... Of course, he's really 'noticeable'. He demands attention and if you don't give it to him... You always question someone who is willing to set themselves up as the 'class clown', which Nick does from time to time, and the people in the class know that it's Nick's turn for a little pat on the back sort of thing. How 'happy' is an individual like that? Nicholas seems like a happy enough individual but underlying that there must be some need for attention that goes

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Nicholas  
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unsatisfied...He has the label of 'he's here, he's there , he's everywhere'. It's well known throughout the school. That's the kind of label that he has earned... Comparing him to the start of the year he's improved so dramatically in terms of staying in his seat; staying on task. That may seem strange when you look at him and see him squirming, but it's true. And he really has come a long way in that respect. I was just about tearing my hair at the beginning of the year. He was much more difficult to control and more persistent in his non-malicious but scatterbrained behavior... I don't know if it was an attention-seeking thing or whether it's just the chemistry that doesn't allow him to sit still but anyway he needed a lot more correction early on than he does now, a lot more reminders to stay on task... I don't know whether he's better or I'm more tolerant. Maybe I've learned to ignore it... You know it bothered me a lot more earlier in the year... You know you could spend two-thirds of your day saying 'Sit still'. I really very rarely bug him about that."

Not unexpectedly, the teacher assigned the lowest possible score (7) on the "calm/good self control" attribute. He was rated a 5 and 6 on the two measures of "maturity" and 4 and 7 on the two measures of "cooperation/compliance". "Nick , despite the fact that he'll occasionally run himself into hot water with me, he's not a malicious person. He's not trying to do someone in. He's also very honest. He's not going to fib me about whether he's been here or there or doing this or that. When confronted I get the straight goods." On the other hand he was often uncooperative. For example, after an interruption caused by a spider... "This annoyed me in here. Very persistent in here. I began

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to get a little ticked off. 'Not another word, Nick'. 'Okay', he says." Another distraction during a lesson was caused by him. "Nicholas had run to the back of the room to throw something in the garbage. Of course, he knows that I'm not very fond of that." He received a 2 for maintaining "eye contact".

The teacher assigned a 5 in "general intellectual ability" (mean = 3.76), a 5 for "probable highest achiever" (mean= 3.30) and a 3 for "creativity". The teacher rated Nick as 5 for both "probable achievement in language arts" and for "probable achievement in math" although by his comments the teacher implied that Nick was better in math. "There's no question about that he's a stronger math student" and "pretty solid in math. Not terribly good in reading but not the worst either." When questioned about this discrepancy the teacher reconsidered and suggested, "Maybe I should have him up there (middle group =4)" He was in the slow reading group. "Nick, I think, gets a little uptight as he begins to read and he starts..gets the first four words wrong and then once he settles into it, reads the rest of the passage very well. But I've noticed this on many occasions. He gets flustered and then bombs a few words. He tries to read too quickly for one thing..."He started to huff and puff and I tried to slow him down but maybe I just put him more on the spot, I don't know... He's in such a rush to whistle through. I think that's true of his written work too. He really takes very little care in it. I guess he looks upon it as work and work is undesirable and so get through it as quickly as possible- that sort of approach...He's often in a hurry to get through his work."

"In the reading situation Nick is the kind of a kid who reads

something by looking at a few words, doesn't really understand, doesn't really comprehend what's going on.

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He's always in such a hurry to get through things. My big problem is getting him to slow down and answer the questions that are asked, to read the directions carefully, and do what's asked of him in the situation."

He was rated low on the work-related attributes, receiving a 7 (mean= 2.9) on "careful/deliberate worker", a 6 for "motivation to do school work" (mean=3.5) and a 4 for "persistence" (mean = 2.8). The teacher was quite "concerned" (2) about his academic progress.

The teacher assigned a 3 (mean = 2.69) in "wanting to keep for another year" and had difficulty placing Nick into one of the attitude groups. "Someone like Nicholas...where will I put him? I'm not indifferent about him. I'm not sure I'd want him for another year...I don't reject him...He almost doesn't fit! He's not like these kids who are sort of ones I see without marvellous personalities and that sort of thing...I guess I'd be closer to attached to him more than anything else but not as close as some of these others, Maybe I'll do this to him ' attached \*'.

#### Additional Information

Age: 8 years 8 months (mean = 8 years 7 months)

I.Q.: Verbal 105 (mean = 112.73)

Quantitative 92 (112.65)

Non-Verbal 90 (111.46)

Achievement: Language Arts 76% (mean = 85.07%)

Mathematics 88% (mean = 93.64%)

Engaged Time DataCase #19  
Nicholas  
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	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	95% 2.4 hours	61% 2.8 hours	77% 5.28 hours
Mathematics	72% 1.8 hours	76% 2.25 hours	74% 4.1 hours
Combined Subjects	85% 4.3 hours	68% 5.1 hours	76% 9.4 hours

Verbal Interaction Data

Nicholas	Language Arts	Mathematics	Both Subjects
All Tinit	6.4	5.9	6.2
Product Q	5.1	4.7	4.9
Process Q	6.0	3.9	5.3
Get Atn Q	12.5	10.0	11.1
Comments	8.1	8.7	8.4
Sustain	4.8	3.4	4.3
Tinit Prai	6.3	7.1	6.6
Tinit Crit	0.0	9.5	3.6
Behavioral	7.9	10.6	9.0
All Sinit	6.1	9.1	7.3
Ss Accepted	22/29	20/28	42/57
Total Verbal	6.3	6.7	6.5

Discussion

The teacher seemed to understand Nicholas and his classroom behavior and he was patient and tolerant in his dealings with him. Nick certainly was a noticeable boy who required almost constant attention and supervision. He was very physically active as well. The teacher was amused by him at times and quite annoyed with him at others.

Nicholas scored less than average marks on the I.Q. tests which put him well below average intelligence for this particular class. He found certain tasks difficult and his coping strategy often seemed to be to

get the job out of the way as quickly as possible.

The teacher felt he exerted little effort overall and did not take much pride in doing a good job. Most attachment students are high achievers, who try hard and who are very cooperative and compliant. Nicholas seemed to be none of these. His redeeming features seemed to be his honesty, his sense of humour, and his obvious liking for the teacher.

Nick was involved in an unusually (6.5) high percentage of verbal contacts, both Tinit and Sinit and both instructional and more managerial contacts. He received more overall attention during math periods but got more instructional contacts of the Process question and Product question type during language arts lessons.

Get Attention questions and Behavioral reminders were understandably high. Most of the kinds of attention he received occurred in one-to-one situations while he was working independently. The only Tinit Criticism he received, which resulted in inflated percentages due to the fact that the teacher gave infrequent criticism, amounted to 28.0% and this was incurred during individual settings and these were the only instances of Criticism received by him. The teacher was fairly supportive with Tinit Praise in all three settings and for both subject areas.

Nicholas was not hesitant to create verbal opportunities for himself. His Sinit ratios are high, particularly in math. However, a fair number of his overtures were inappropriate or badly timed and were therefore refused.

The kinds of work performance and classroom behavior exhibited by Nicholas made extra demands on the teacher for he required constant monitoring by the teacher who as a result became involved in a greater than average amount of verbal contact with him.



Mason was described as a reasonably "happy"(2), not all that "noticeable" (5, mean = 2.8) and not all that "attractive" (3, mean = 1.65) boy.

The teacher assigned a 5 (mean = 3.76) for "general intellectual ability" and 4 for "probable highest achiever" and a 3 for "creativity". He assigned 4's for both "probable achievement in language arts" and for "probable achievement in math". He was in the good reading group.

Earlier in the year his parents were very distraught about the teacher's overall assessment of Mason's performance. For instance with respect to his creative writing... "He hadn't handed me in anything. The quantity and the quality were really not good. His mother was quite upset about it so I showed her some of the stuff. Well she went home and must have read the riot 'act because thereafter the quality of his work in creative writing situations has been really quite good and that is why I say 'Here's a kid who is not really a self-motivated individual but who has enough ability to be able to do maybe a little better than he shows I guess'... After last year she thought he was a top-notch student I think her expectations were that her son was a much stronger student than he really is and I think that she'll find that he's not. I mean he's a good, solid average student, but he's not someone whom I'd consider to be a strong student. There are lots of other kids in the class who perform at a much higher academic level than Mason."

"Mason sits up near the front. I guess I would typify him as being a fairly sort of average student. He's not a real insightful kind of student, not like some of the top students. At the same time he'll fool you from time to time and really do a top-notch job but he's not a

highly motivated individual. He's not someone who's going to get this done right now and he's excited about it...He's the kind of kid that I find- probably that's the reason that he's close to me- I have to stay on top of the situation with him. I have to make sure that he's doing what I'm asking him to do. At the first of the year I had some difficulty keeping him on task." An interactive thought the teacher expressed about selecting Mason to give an answer was..."And, of course, I often find that I get two-thirds of the way through and I'll find that Mason hasn't had an opportunity to say much and I make a point of asking him."

The teacher assigned a 4 for "motivation to do school work", a 5 for "careful/deliberate worker", and a 5 for being a "persistent" worker. "I do notice that unless I'm directing his activity, he'll direct his own but not in a way that I necessarily like... If we talk about lacking in 'persistence' in language arts I would say that he's not as persistent an individual. He will quietly sit and hope that the issue will be avoided. Not as true in math because he is a better student in math." The teacher was fairly "concerned"(4) about Mason's academic performance. A later reflection in May about the creative writing was... "He's doing a better job. In fact he turned in a 'book' to me the other day. Yeah, it's about that thick!"

"He's not a disruptive person but for example you may have noticed that sometimes when I ask them to free read and I'm sitting at the back here filling out attendance sheets or something like that, I'll go up to the front and Mason is not free reading. He's not making any noise or bugging anybody but he's staring around, twiddling his thumbs, drawing a picture."

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Mason  
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He was assigned a 4 in "calm/good self control". When asked to elaborate on this seemingly low score the teacher said, "He may have the disadvantage of proximity to me and you see everything a kid's doing... 'Self control' and 'calm' may not always go together. I think, for example, when I offer time for free reading, Mason quite often won't, that's 'self-control' isn't it? In terms of being 'calm', he's quite a placid young fellow so I may have misinterpreted in his case." He was assigned a 4 for maintaining "eye contact".

He was rated 4 and 5 on the two ratings of "maturity" and he received a 3 and a 5 on the two measures of "cooperation/compliance".

The teacher assigned a 5 (mean = 2.69) on "wanting to keep for another year" and placed Mason in the indifference group.

#### Additional Information

Age: 8 years 8 months (mean = 8 years 7 months)

I.Q.: Verbal 109 (mean = 112.73)  
Quantitative 108 (mean = 112.65)  
Non-Verbal 119 (mean = 111.46)

Achievement : Language Arts 79 (mean = 85.07)  
Mathematics 90 (mean = 93.64)

#### Engaged Time Data

	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	100% 16 minutes	96% 45 minutes	97% 61 minutes

#### Discussion

Mason exemplified the typical indifference student. He was not very noticeable, not well-liked by the teacher, and did not exert very much effort. It was necessary for the teacher to monitor his activities

Verbal Interaction Data

Mason	Language Arts	Mathematics	Both Subjects
All Tinit	2.5	4.4	3.4
Product Q	2.8	6.1	4.4
Process Q	1.5	0.0	1.0
Get Atn Q	0.0	5.0	2.8
Comments	3.3	3.7	3.5
Sustaining	3.8	6.9	4.9
Tinit Praise	2.3	3.0	2.6
Tinit Criticism	5.9	4.8	5.5
Behavioral	2.6	3.5	3.0
All Sinit	0.4	0.6	0.5
Ss Accepted	2/2	2/2	4/4
Total Verbal	1.8	3.4	2.5

for he was not responsible enough to remain on task unless supervised.

His I.Q. scores are lower than average for this class except for the Non-Verbal one and the teacher assigned one of his higher scores for "creativity" which is seen to be associated with non-verbal intelligence. A negative halo effect seemed to be associated with his projected achievement and the assessment of his work habits. His achievement was below average in both subjects, moreso in language arts. He had been assigned 4's on both subject area achievement expectancy ratings although the teacher felt that he was slightly more able in math.

The small amount of engaged time data show he was well on task for the hour observed during language arts but this may not have been indicative of his usual engaged time rates.

He was involved in less than average amounts of verbal interaction. In the math lessons coded, Mason experienced a great deal of attention

because he was having trouble telling time and the teacher spent a lot of class time (both days when "time" was taught and recorded) trying to help Mason. This accounts for the 6.1% of Product questions in math which may not represent the usual amount of interaction experienced.

The teacher initiated very few Process questions with him; none were asked during math even in those sessions which involved him so intensively. His overall Process question ratio was only 1.0%.

Mason initiated a negligible amount of Sinitis with the teacher which is characteristic of indifference children. The higher Tinit Criticism ratios he received are inflated because so few instances of Tinit Criticism occurred overall.

In all Mason received a less than average amount of verbal interaction and seemed, generally, to be somewhat lethargic in his approach to schoolwork.

Trisha was described as a very "attractive" (1), "happy" (2) but not all that "noticeable" (6) little girl. "She's a very quiet little girl but she's a little sweetheart... She's not a real outgoing, assertive individual. She gets along well with the other kids. She's by no means isolated." She was assigned a 3 for maintaining "eye contact."

The teacher assigned a 5 for "general intellectual ability", and a 5 in "creativity". She received expectation ratings of 4 for "probable highest achiever", a 5 for "probable achievement in math, and a 6 for "probable achievement in language arts". "She's average, good average in math but she needs the resource room activity in language arts. She's pretty low in language arts... She's behind in some of her language arts skills, word recognition skills particularly." She was in the lower reading group.

The teacher rated her as a 2 and a 3 on the two ratings of "cooperation". Examples of her cooperation occurred when she rejoined the class after attending the resource room. "Trisha's easy to deal with though, because I briefly give her instructions and she'll be alright." She was assigned a 3 and a 5 on the two ratings for "maturity". "I forget her exact age, but she's a little younger than most of the others..But she's a little small, not that that has necessarily a lot to do with maturity."

Ratings of 2 were assigned for "persistent" worker, for the "calm" attribute, and for being a "careful/deliberate worker". She received a 4 in "motivation to do school work". "She's a good worker, She tries hard."

He was fairly "concerned" (2) about her academic progress. She was rated as 2 in "wanting to keep for another year" and was placed in the attachment group.

Overall few teacher comments about Trisha were made.

Additional Information

Age: 8 years 4 months (mean = 8 years 7 months)

I.Q.: Verbal 103 (mean = 112.73)  
 Quantitative 105 (mean = 112.65)  
 Non-Verbal 103 (mean = 111.46)

Achievement: Language Arts 71% (mean 85.07)  
 Mathematics 93 (mean 93.64)

Engaged Time Data: Only about one hour's worth in language arts is available.

	Teacher-Directed	Self-Paced	Total Time on Task
Language Arts	100% 41 minutes	82 22 minutes	94 63 minutes

Verbal Interaction Data

Trisha	Language Arts	Math	Both Subjects
All Tinit	1.1	1.3	1.1
Product Q	2.1	1.5	1.9
Process Q	0.0	0.0	0.0
Get Atn Q	0.0	0.0	0.0
Comments	0.4	0.6	0.5
Sustaining	1.0	2.6	1.5
Tinit Prai	3.3	0.0	2.2
Tinit Crit	0.0	0.0	0.0
Behavioral	0.0	0.0	0.0
All Sinit	1.4	1.3	1.4
Ss Accepted	6/6	2/3	8/9
Total Verbal	1.2	1.3	1.2

Discussion

Trisha was viewed as a low achiever. Although he was quite "concerned" about her academic progress and had rated her general intellectual ability as low Trisha was placed in the attachment group, which is usually composed of high achievers and intelligent students. Her effort, persistence, and general cooperativeness may have influenced this decision. In addition, he described her as a very "attractive" little girl.

Her language arts achievement (71%, mean=85.07), was low as predicted, but she seemed to exceed his expectation for her achievement in math by scoring an average mark for the class. She received more explanations and sustaining behavior in math. The small amount of engaged time data collected in language arts indicated a high percentage of time on task. Her verbal percentages are consistently low, perhaps because of her "unnoticeable" personality and because girls tended to receive less interaction anyway. Her placement in the lower reading group would account for less attention received in language arts as well. For instance, for the 2226 interactions for which she was present (she missed periods of time by attending resource room) none of the 256 Process questions posed by the teacher were asked of her and only 1.9% of all Product questions were asked of her overall. She received no Get Attention questions, Behavioral reminders, or Criticism in any setting which helps to confirm that she was cooperative and compliant. She initiated few Sinitis with the teacher (1.4) overall except during small group reading instruction when her Sinit percentage rose to 4.5%. In individual math settings she



initiated a few Sinitis (2.2%) but no Sinitis were initiated in whole class math instruction. It seemed as though she preferred to approach the teacher in settings other than whole class instruction.

In all, although liked by the teacher, Trisha was not involved in much dyadic interaction during the 20 hours in which her verbal interaction data was collected.

Merrill was described as a very "attractive" (1), very "happy" (1), not all that "noticeable" (3) little boy of Oriental descent. "Mother spends time helping in the school library. She's a nice lady- good parents."

The teacher assigned a 1 for "general intellectual ability", 1 for "creativity", and 1 for "probable highest achiever". Merrill received a 1 for "probable achievement in language arts" and a 3 for "probable achievement in math". "He's a good enough math student. In fact I'd say he's a good math student but...At the start of the year I had to get him to do a little extra work on his times tables because he didn't pick them up quite as fast but he knows them all now and works with them effectively. He's not the kind of individual who's an imaginative math student. He has a good memory and can learn things, that's the kind of math student...Math isn't quite as strong. I told Mom and so they drill him all the time and he's coming along quite well. He's a bright kid and it's just that his strength is more in the language arts area."

During a math lesson when several students including Merrill were experiencing difficulty, the teacher used his knowledge of Merrill's ability as a gauge. "He's very bright in fact. Just as I was talking to Merrill I decided, or it snapped into my mind that 'Hey, there's quite a few people who aren't getting this first part. I'd better look at another way of teaching this'."

"In language arts he's easily the best person that I've got...superb! He's creative. Imagination and skill level in written work is far beyond grade three level. Very literate. His writing ability far exceeds any

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Merrill \*  
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sort of expectations that I would normally have of a grade three individual..and then I've taught grade five as well and far exceeds most grade five students that I've ever had. I should show you some of the stuff he writes. It really is imaginative and, of course, the word usage and the proper spellings; all of those things are intact and so his written skill level is really pretty advanced. He's a little shy and he's not quite as outgoing and verbal as some of the other kids." The teacher was not at all "concerned" (7) about Merrill's academic progress.

Merrill was assigned a 1 for being a "careful/deliberate worker". 1 for being a "persistent" worker, and 2 for being "motivated to do school work". "He's usually a good worker." He received a 1 and a 3 on the two measures of "cooperation" and also a 1 and a 3 on both measures of "maturity". He was assigned a 2 for maintaining "eye contact".

He was rated 2 on the "calm/good self control" attribute. Concerning the "calm" rating, the teacher elaborated, "He's better than fair. Based on what I know about him, based on his academic ability, that kind of thing, I might say that his self control isn't as high as I might expect... but his is not a negative thing... just that he can't control his enthusiasm at times."

When questioned again about Merrill's shyness the teacher said, "Yes I would say that he's shy, and it's kind of odd because on the one hand I'm saying that it's hard for him to contain his enthusiasm and on the other hand there are times...for example, in a creative writing situation, something he knows he does exceedingly well, he won't want to share his

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Merrill  
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story with the rest of the group where other kids are really in there clamoring to do so...He's not painfully shy but he's an individual who is sometimes relectant to talk."

#### Additional Information

Age: 8 years 8 months (mean = 8 years 7 months)

I.Q.: Verbal 130 (mean = 112.73)  
Quantitative 110 (mean = 112.65)  
Non-Verbal 117 (mean = 111.46)

Achievement : Language Arts 96% (mean = 85.07%)  
Mathematics 98% (mean = 93.64)

No engaged time data is available for Merrill.

#### Verbal Interaction Data

Merrill	Language Arts	Math	Both Subjects
All Tinit	5.3	3.1	4.3
Product Q	6.6	4.7	5.7
Process Q	7.5	1.0	5.3
Get Atn Q	6.3	0.0	2.8
Comments	1.5	2.1	1.8
Sustain	6.7	1.7	4.9
Tinit Prai	5.5	3.0	4.4
Tinit Crit	0.0	4.8	1.8
Behavioral	1.8	1.8	1.8
All Sinit	3.4	2.9	3.2
Ss Accepted	15/16	8/9	23/25
Total Verbal	4.7	3.0	3.9

#### Discussion

Merrill was a good student who worked hard and achieved good marks. He was cooperative and conforming, well-liked by the teacher and somewhat quiet and shy.

His total verbal ratio of 3.9 is somewhat less than class average but closer examination of his verbal file reveals very high rates of involvement in Tinit (5.3) contacts. He received 6.6 of all the language arts Product questions and 7.5 of all the language arts Process questions. He received a high rate of Praise (5.5) and Sustaining (6.7) behavior in conjunction with his language arts verbal interaction.

Totally in math he was involved in a lesser amount of interaction receiving 4.7 of the math Product questions but only 1.0% of math Process questions. He initiated a lower than class average of Sinitis especially in math (2.9) settings. Perhaps because of his apparent shyness the teacher compensated by attempting to draw him out by involving him in Tinit contacts.

The teacher rated him as highly intelligent, literate, and creative. His Quantitative I.Q. score of 110, which was about average for this class, may have contributed to the lower assigned expectancy score of 3 received by Merrill for "probable achievement in math." However, he achieved a score of 98% on the end of the year math test which may have been largely due to good working habits and support from his parents.

The majority of verbal contacts Merrill received were of high instructional quality and were initiated by the teacher.

The teacher described Pamela as a very "attractive" (1), "noticeable" (1) but very "unhappy" (7) little girl. "She's young..the home background." (In March, before Sonia, the new girl, arrived, Pamela was the).. "only kid in the class with the single parent situation" (excepting Ian, whose mother had died).. "Mom has separated from a common-law relationship but has a lot of difficulty with the situation. It's in a state of flux all the time...new fathers, uncles, one of those." In April, Mother came for an interview. She was concerned about the poor report card and confirmed that the "family situation was in an uproar." Since the father had no legal right to see the children she had demanded that he leave them alone..."but the two girls had been sneaking around and seeing their father. Mom doesn't get home from work until about 5:30 and the Dad picks them up from school from time to time so it creates a lot of anxiety and conflict for them. Mom has said 'No' and yet they're still doing it... It's hard for a child that age to understand these things." In June he reflected that her home situation and family problems had functioned as a kind of label which may have influenced his perceptions and treatment of her.

She received 7's for both ratings of "cooperation/compliance" and 7's for both ratings of "maturity". He assigned a 5 (mean = 2.69) on "wanting to keep for another year" and assigned her, with certain reservations, to the rejection group. "I suppose the one who would be the most marginal in terms of personality traits would be Pamela... It's essentially a personality thing... Yesterday, for example, she was chewing a great wad of gum, so much so that she couldn't talk, so I asked her to spit it out and she did. Five minutes later another wad. So I asked her to spit it out and I asked her 'Do you have any more?'

Case #23  
Pamela  
Page 2

'No.' So fine. Nothing more with me but at recess, just after science, the science teacher mentioned to me that she had Pamela spit out two great wads of gum and 'What the heck's going on?' This teacher sees Pamela in much the same fashion as I do, you see, a little sneaky; I guess is the word. So I came in and roasted her a bit- not for chewing the gum, but for the lying, and that's what it is- and it's out and out. It's attention-seeking behavior, and I know that, and I haven't responded probably in the way I should. I should try more effective means to try and change the behavior. I just haven't done it for whatever reason." She was assigned a 4 for maintaining "eye contact".

Another example he provided was.... "If I walk into the main building (from the portable), she'll be down at the office wondering if she can use the phone. She'll be sort of wandering around, sneaking around, trying to avoid me because I've told the kids 'Look, if you need to use the phone, don't bother the office people. Come and see me and I'll judge whether you ought to be using it.' The answer's been 'No' often enough that she's got to usurp the authority- the hell with it- and she's got to get by me one way or another."

At another point the teacher was mentioning that scissors get lost mysteriously through the run of the year... "Pamela had none at the start of the year and now she has two. So you know what's happened but I'm not going to make an issue of it as long as they share."

He described her as "perpetually late coming into a group... In a class situation she does things that are attention-seeking, you know, the out-of-seat activities... I'll be in the middle of a 'stimulating'

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Pamela  
Page 3

lesson and it's 'bathroom time'. ..Well-planned distractions, I guess more than anything.. "I should be nicer to Pamela than I am... I leave..feeling that often. You know, she's one of those kids that you sometimes just don't interact terribly well with." Nevertheless, his assignment of her to the rejection group was "conditional" as he "did not feel terribly negative about any of them."

He assigned her a 7 for "general intellectual ability", a 7 for "probable highest achiever" and a 7 for "creativity". She received a 6 for "probable achievement in math" and a 6 for "probable achievement in language arts" as well. "She's a low-average student...a little better in math than in language arts. I would say that she's not a terribly bright individual. She doesn't work to capacity." She was in the poor reading group and she attended resource room for individual help in language arts three times a week. Overall he was very "concerned" (1) about her academic progress.

She was rated 7 on the "calm/good self control" attribute, 7 for being a "careful/deliberate worker", 7 for "persistence" and 7 for being "motivated to do school work." On one occasion she'd returned from the resource room and had managed to complete quite a bit of the worksheet although she had missed most of the math period. "It's funny. Sometimes she'll move along more quickly than I think." But more often she was perceived to be "off task"...Reflecting while watching a videotaped lesson the teacher said, "I think I have a little private chat with Pamela here saying 'Stay on task' but then, of course, she doesn't." And on another occasion... "I went up to the front (to the poor reading group) because I was watching Pamela and she was way off task. There



were others too but she was the worst...She had put her stuff away and I wanted to see what she had done cause I hadn't seen her do any work. She had done very little...." She was one of several who habitually 'tuned out' during the reading of the novel. As a result the teacher avoided directing questions at her in this setting.

Case 23  
Pamela  
Page 4

#### Additional Information

Age: 9 years 1 month (mean 8 years 7 months)

I.Q.: Verbal 90 (mean = 112.73)  
Quantitative 91 (mean = 112.65)  
Non-Verbal 111 (mean = 111.46)

Achievement: Language Arts 71% (mean 85.07%)  
Mathematics 87% (mean = 93.64).

#### Engaged Time Data

	Teacher -Directed	Self-Paced	Total Time on Task
Language Arts	91% 1.4 hours	57% 1.1 hours	76% 2.5 hours

#### Discussion

Pamela was one of the oldest students in the class but was perceived to be one of the most immature. Perhaps because of this the teacher actually perceived her to be "young". Knowledge of her home problems helped to explain why she exhibited certain behaviors at school and enabled him to be fairly tolerant of her almost constant misbehavior. A negative halo effect appeared to influence his perception of her various attributes. She was considered to be lacking in general intelligence and her I.Q. scores indicate that she was considerably below average ability for this particular class. He felt that she did not use what ability she did have to any great advantage and his effort

Case #23

Pamela

Page 5

Verbal Interaction Data

Pamela	Language Arts	Mathematics	Both Subjects
All Tinit	4.5	4.2	4.4
Product Q	2.8	3.9	3.2
Process Q	0.5	1.4	0.7
Get Atn Q	12.5	0.0	8.7
Comments	9.6	5.2	7.8
Sustain	1.9	2.3	2.0
Tinit Praise	5.5	1.3	3.9
Tinit Crit	17.6	5.6	13.5
Behavioral	11.8	7.7	10.4
All Sinit	4.4	6.2	5.1
Ss Accepted	19/21	13/16	32/37
Total Verbal	4.5	4.8	4.6

attribution for her was the lowest possible. His expectations for her achievement were accordingly fairly low as well. Her actual achievement scores were below average but she scored only six points lower than class average in math compared to the fourteen points lower than average in language arts. His assessment that she was a better math student seems to have been accurate.

Although placement in the rejection group never did reach the definitive stage, it is interesting to note the various attributes she possessed which are common to the "typical rejection students" from other studies. Brophy and Good (1974:164) noted that teachers tended to reject children who are overly active and assertive, especially if they are low achievers as well. Findings from many studies reviewed by Brophy and Good suggest that teachers perceive the demands made by rejection students as overwhelming and illegitimate. These students are

frequent behavior problems. They receive a high number of behavioral and critical comments. The teacher tended to avoid them in public settings. On the basis of examining data on 37 rejection boys and 25 rejection girls assigned to rejection groups by 28 teachers (less than three per room) an interesting sex difference was noted that applies in the present case perhaps. Rejection boys usually came from intact families in which both parents were living while teachers made frequent negative comments about the families of rejection girls (broken home, or poor parental cooperation) along with the more usual comments about failure to pay attention, poor general ability and poor work behavior which would apply to rejection students from both sexes.

The small amount of engaged time data available suggests that she wasted a fair amount of academic learning time by being off task which substantiates the teacher's perception of her poor work habits and effort.

Pamela received average amounts of total verbal interaction but less than average amounts of the more instructional contacts. Overall in language arts, of the 201 Process questions posed only one was addressed to her resulting in a ratio of 0.5% for Process questions in language arts. Product questions in language arts were somewhat higher at 2.8. (Most of these (5.9%) were addressed to her in individual settings and only 2.2% in public settings). More instructional contacts were afforded in math. She received a high percentage of Get Attention questions, Behavioral reminders and Tinit Criticism. She received a fair amount of Tinit Praise in language arts (5.5 overall) with 11.1% accruing to her in the poor reading group setting but not as much praise

was given to her during math. The teacher appeared to be taking advantage of opportunities to praise her when he could find them.

She initiated a higher than average number of Sinitis with more occurring in math than in language arts.

In all Pamela was a demanding girl who made her presence felt in the classroom. Her lack of effort and cooperation and defiance on occasion resulted in the teacher conditionally assigning her to the rejection group. Although he acknowledged and regretted holding such feelings toward her and he attempted to deal with her patiently, many of the verbal contacts that resulted were of a disciplinary and managerial nature and were not the sort of verbal contacts that are of greatest educational benefit to a student.

Case #24  
Maureen  
Page 1

Maureen was described by the teacher as a very "attractive" (1), very "happy" (1), and "noticeable" (2) little girl of Oriental descent. "She's one of the kids who takes the bus right after school. Quite frankly I don't know very much about her extra curricular activities...The interacting often takes place in the informal part of the day on an informal casual basis after school... She's not somebody who's assertive in that sense at all."

She was seen as a "quiet", "cooperative" (1 and 1), "mature" (1 and 2) little girl and the teacher assigned a 1 for "wanting to keep for another year." She was placed in the attachment group. She was assigned a 1 for maintaining "eye contact".

He rated her a 3 in "general intellectual ability" and 2 in "creativity". He assigned a 3 for "probable achievement in language arts" and a 1 for "probable achievement in math" and a 1 for "probable highest achiever". On balance the teacher's comments implied a higher language arts expectation than he had actually assigned. "She's pretty strong in language arts, not nearly as strong as in math though. Math is her stronger subject, as per the stereotype." In June the researcher asked for further clarification concerning the lower language arts expectation and creativity assessment he held for her. "Well maybe it's my expectation. She is so high in other areas. But, for example, if we look at a piece of creative writing, the stories are simplistic and not particularly imaginative... Her's are a good average length but they're pretty dull stuff. But in other areas she's a superb student. For example in reading, she reads well." (She was in the good reading group).

Case #24  
Maureen  
Page 2

"She's a pretty strong language arts student. She's not the most creative individual when it comes to expressing her own thoughts. In math, of course, she's a very capable student."

Maureen was assigned a top rating of 1 on the following work-related attributes: "calm", "careful/deliberate worker", "persistent worker", and for being "motivated to do school work." The teacher was not at all "concerned" (7) about her academic progress. It was noted by him that she did interact frequently with Joanne during lessons but not in a disruptive way. "Very frequently I find that when they are exchanging words it is work-related. Maureen and Joanne have been seated beside each other all year long. They're good friends. There's a lot of interaction between them in a class situation but they help each other. That's fine! "

#### Additional Information

Age: 8 years 7 months (mean = 8 years 7 months)

I.Q.: Verbal 122 (mean = 112.73)  
Quantitative 133 (mean = 112.65)  
Non-Verbal 117 (mean = 111.46)

Achievement: Language Arts 94% (mean 85.07)  
Mathematics 97 (mean 93.64)

No Engaged Time Data available

#### Discussion

Maureen was of average age, possessed a very high I.Q. and had excellent work habits and good achievement results.

For a student of such high calibre, she was involved in very few verbal interactions with her teacher. She was perceived as non-

Verbal Interaction Data

Maureen	Language Arts	Math	Both Subjects
All Tinitis	1.5	2.2	1.8
Product Q	2.0	3.9	2.9
Process Q	2.0	1.0	1.6
Get Attn Q	0.0	0.0	0.0
Comments	0.7	0.4	0.6
Sustain	1.9	1.7	1.8
Tinit Praise	0.8	2.0	1.3
Tinit Crit	0.0	0.0	0.0
Behavioral	0.9	0.0	0.5
All Sinitis	0.8	1.3	1.0
Ss Accepted	4/4	3/4	7/8
Total Verbal	1.3	1.9	1.6

assertive and very quiet. She initiated very few Sinitis with the teacher averaging 1.0% (mean =4.1) overall although this percentage rose in the small group (reading) mode to 4.5. Perhaps, as a result of her non-salience, the teacher tended to underrate her intelligence by assigning a 3 for general intellectual ability, although, if I.Q. is any indication, she appeared to have possessed very high academic potential. No criticism, no get attention questions, and only 2 out of 398 behavioral reminders were given to her which indicates she was indeed a student who conformed to classroom rules.

She was a high achiever who put forth an excellent effort, was cooperative and mature. However her amount of involvement in Product questions and Process questions was 2.0% for each in language arts and the ratios received for math Product questions (3.9) and for math

Process questions (1.0) were below class average as well.

Because she was involved in so few verbal interactions (43 out of 2715) the accompanying verbal behaviors of Praise and Sustaining are low for her as well.

Although the teacher may have realized that Maureen needed little instructional assistance, he usually aimed to actively involve students verbally in ongoing instruction. Maureen seems to exemplify the good and quiet student who can escape verbal attention in a busy classroom.



Joanne was rated as a very "attractive" (1), very "happy" (1) and "noticeable" (2) little girl.

Case #25  
Joanne  
Page 1

The teacher assigned a 1 for each rating of "cooperation/compliance" and a 1 for each rating of "maturity". "She's a real nice kid; bright, inquisitive, all kinds of nice things to say about her. She does a good job. She'd certainly be an obvious leader in class. She gets along well with others. She's in a sense a little more mature than many of the other children in the class." She was assigned a 1 in "wanting to keep for another year" and was one of the "first three choices" for the attachment group. "I really like Joanne, you know, and the thing is we have a lot of interaction after school and so on. She's enthusiastic about everything. She's into this and into that and a kid who really has her head together, knows where she's going and yet she's still a kid. She's not a pseudo-adult."

She received the top rating of 1 for all of the expectancy measures: "general intellectual ability", "probable highest achiever", "probable achievement in math", and "probable achievement in language arts", and for the "creativity" attribute. His comment in May was, "Here's a kid who does awfully well. Gee, I marked the first half of her reading test. She has 100% so far, so you know she does pretty well. It's not a mirage, her capability, and I know her other teachers who have had her in the past have felt the same way...so." He was not at all "concerned" (7) about her academic progress.

When questioned about his selection of students for answering a question ( while viewing a video tape) he said, "These kids deserve to be asked cause they know this stuff quite well. I've been surprised so rarely this year by Joanne not knowing something that I sometimes say

to myself 'Hey I've hardly asked this kid a question all day. When you teach a large group

Case #25  
Joanne  
Page 2

like this I try and get to everybody... As I've mentioned before that sometimes it's easy to overlook people who do things right all the time and she doesn't demand attention the way some children do."

On another occasion concerning the selection for answering...

" I ended up with Joanne - not because I wanted to hear her read again but because it occurred to me that when she had read I hadn't said anything about her reading and that I ought to say 'Well, Okay very good' or at least that, you know ... She enjoys our interaction but it's on a somewhat different level... It's not the 'see-what-I've-done-praise-me' kind of attention... Yeah, she's really quite mature I think. There's a bit of banter which is quite unusual between adults and children of that age."

While watching a video tape and reflecting on the quality of answers received ... "Joanne gave me a very good answer here- the kind of answer I've learned to expect from her. She had whispered to me before 'Hey, I've got an answer' ... and conversely, "Joanne's in a funny mood today, sort of a little baby talk and that sort of thing... So I thought it was not a well thought-out answer and certainly not her usual standard answer... She's being a little silly today for whatever reason. I allow her the occasional slip. Why not? You know I moved away from her pretty quickly. If I'm not getting a good answer, if it's a silly answer, and that's what it was on that occasion, I guess she would get that 'message'. I don't know if it would prevent her from being silly again... She might just have one of those days, you know. But we understand each other pretty well."

Her work-related behavior received top ratings of 1 as well. She was deemed to be highly "motivated to do school work" (1), a very "careful/deliberate worker" (1), a "persistent" worker" (1) and very "calm" (1).

While viewing a video tape again ... "I don't know who's wandering around there..I didn't see...Joanne. Oh well it's alright if it's Joanne. She has a good reason, no doubt." And on another occasion when questioned whether Joanne might be 'off task'..."If she's off task briefly, so what? You know because she's a bright little girl who probably has the concept whether she's completely task-oriented or not." Basically the teacher felt "...There is no problem with her paying attention." She usually chose something non-disruptive when she finished her work early, which frequently happened...like reading a book. "Joanne and Maureen may have been checking each other's work too, that sort of thing. They do quite a bit of that. They learn from each other. That's why I would never move them. They're discreet about it."

#### Additional Information

Age: 8 years 7 months (mean = 8 years 7 months)

I.Q.: Verbal 127 (mean = 112.73)  
Quantitative 126 (mean = 112.65)  
Non-Verbal 130 (mean = 111.46)

Achievement: Language Arts 98% (mean = 85.07%)  
Mathematics 100% (mean = 93.64%)

No engaged time data available.

#### Discussion

Joanne was obviously one of the teacher's favorite students and she seemed to deserve the positive halo effect reflected in her teacher-

Case #25  
Joanne  
Page 4

Verbal Interaction Data

Joanne	Language Arts	Mathematics	Both Subjects
All Tinit	3.5	3.7	3.6
Product Q	4.3	2.5	3.5
Process Q	4.5	7.8	5.6
Get Atn Q	0.0	5.0	2.8
Comments	1.8	3.7	2.7
Sustaining	4.8	0.0	3.1
Tinit Praise	5.5	5.1	5.3
Tinit Criticism	0.0	4.8	1.8
Behavioral	1.8	5.3	3.3
All Sinit	6.3	6.8	6.5
Ss Accepted	28/30	15/21	40/51
Total Verbal	4.4	4.5	4.5

assigned scores. She was the kind of model student who was a classic attachment candidate. She was cooperative, mature and had a personality the teacher liked. The teacher was careful not to show the favoritism felt in his dealings with her although, as he said, "We understand each other pretty well."

She was intelligent and put forth her best effort consistently and thus, not unexpectedly, achieved excellent results. She was cooperative during lessons although she liked to tease the teacher subtly. For example, she was tapping his shoe one day as he was reading to the class seated on the floor at his feet. Some of the substantial number of Sinit were refused perhaps for reasons along these lines.

Although her overall verbal interaction percentage is within average range (4.5) most of the interaction occurred as Process questions which were the highest instructional type and as Sinit interactions which she created for herself so frequently. In all, Joanne was well liked by the teacher and her friends and was having an enjoyable and successful year at school.

Sonia was described as an "attractive" (2), not all that "noticeable" (3), not all that "happy" little girl.

Case #26  
Sonia  
Page 1

The teacher assigned 3's on both ratings of "maturity" and a 4 and a 5 on the two measures of "cooperation/compliance". She received a 3 for maintaining "eye contact" with the teacher.

Sonia was rated as 5 for "general intellectual ability", 4 for "probable highest achiever", and 3 for "creativity". The teacher assigned a 5 for "probable achievement in math" and a 3 for "probable achievement in language arts". He was fairly "concerned" (2) about her academic progress.

She was deemed to be not overly "motivated to do school work" (4), not overly "persistent" (4), a less than average "careful/deliberate worker" (3), not all that "calm" (4). The teacher assigned a 4 for "wanting to keep for another year" and tentatively placed her in the rejection group.

Sonia's case results in a particularly interesting profile because she joined the class on April 8, 1979, as a new student. The researcher capitalized on this opportunity to gather formative impressions of her during her first three weeks in the class. The above ratings were provided after about a month when the teacher felt better able to assess her on the various measures.

The following perceptions gleaned both from regular interviews and during stimulated recall interviews date back to the first teacher comments provided to the researcher about Sonia and are presented in chronological order. It was expected that during the process of forming his impressions about her the teacher's thoughts might be contradictory

Case #26  
Sonia  
Page 2

at times and would provide the range of background

information that contributed to the formation of his perceptions.

It is particularly interesting to note her classroom behaviors on various occasions which appear to contribute to his eventual placement of her into the rejection group, albeit conditionally.

April 9: His first expressed impressions were..."a nice little kid, fairly outspoken. I think in judging from her Cum. card that the situation at home isn't as stable, Mom and Dad have separated, as one would normally find in this community... She's average in language arts, just on first impressions. She's a little behind, compared to this group, in some of the math skills...

April 10: "I'm actually reasonably pleased with the way that she's settling in. Based on the first day I was asking myself the question 'Is this going to be a kid whom I'm going to have to be correcting the 'speaking out' all the time?' I got that impression initially because she was quite outgoing. She was very willing to chat, chat, chat all the way. Most kids when they come to a new school situation are quite meek and a little frightened and this sort of thing and she was none of that and I thought 'Oh, Okay. Here we go'. I'm quite satisfied now that she is well mannered and that's good as far as I'm concerned."

From other conversations the teacher stated that at the first of the school year, when getting to know his students, he rarely looked at the cumulative record card but preferred to form his own impressions. For the sake of expediency and because it was late in the year he did consult the information contained therein. "I had taken a quick look at the Cum. card for at this late date in the year, you want to decide

what groupings to put a kid in and so on. She'll fit in and be average in the top group" (reading). She had initiated some questions during the class. "Yeah, I don't think she's shy."

The teacher had to make use of Get Attention questions when it appeared that her attention was wandering. "She wasn't quite on task at that time which was the reason I asked her the question. She had a 'glazed eye' look. It's interesting, you know, she says that she has taken this particular lesson at her other school and the assumption is then, that in her own mind, that she knew the information (math) quite well. That was not the case, as it turned out... "

She was caught whistling during the lesson... "I don't know if it was a nervous habit or what..." Still later during this same math lesson she pulled out a reading book and became engrossed in it instead of listening. "Maybe it's unfair, but I like kids to at least look semi-interested and if you're reading a book in math class, that has nothing to do with math, then you've demonstrated... I guess I'm always a little insulted by that sort of thing ... She looked quite remorseful at this point. She's not frightened but at that particular point she knew very well that she was wrong and that it was quite clear that I could show her that 'Hey, you don't understand this as well as you ought to'. Her questions were (a) not finished and (b) some of the ones she had finished were wrong, were incorrect, and she didn't really have the idea of certain parts of it anyway... Maybe that's all the correction that will be needed. She doesn't strike me as an individual who goes out of her way to be testing, you know. She's not one of those who will push, push, push to see how far ... I haven't known her long enough to

Case #26  
Sonia  
Page 4

know whether in a situation like that she would ask for help or whether normally she pulls out a book and does her own thing when things are difficult. I don't really know yet."

April 12: "These two, Marilyn and Sonia, I'm going to have to move them, separate them, because they've developed a quick friendship and are chatty. They're not disruptive but they quietly chat very often and so you may notice from time to time I sort of focus attention on that whole corner." Again he directed a Get Attention question at her. "I think she was off task. I can't remember exactly but you know the old 'glazed look'. I don't know if it was there or sometime later..."

Concerning her potential ability and performance in math...

"These are the first samples of multiplication work that I've had from her and she's far behind the rest of our group in that respect so I'm going to have to do some things to help her catch up with the rest of the group. She seems to be a little stronger in language arts than she is in math...just initial assessment."

"She and I will get along very well. I just want to impress on her early that - well to get her accustomed to the kinds of things that all the other people in the class are accustomed to, regarding me. Yeah, I have no fear that she and I will get along. I'm sure that we will."

Long Easter weekend intervened....

April 17: "I'm reasonably satisfied that she's fitting well into the class.

... I've noticed that little Sonia, the new girl, doesn't participate in this kind of situation, so it would seem this far, quite as willingly."

The situation concerned was volunteering during small group reading sessions.



The teacher asked her teacher-initiated questions in whole class situations..."Yeah I tend to get to

her in the full class. But she doesn't volunteer as often as some of the other children in this group setting anyway."

It was noted that Sonia was answering most questions in the lesson correctly... " Well she got those certainly and I'm still in the process of assessing her. It's interesting right there. She didn't even have her work out; you know. I don't know what she was doing but I was surprised when I got there."

"As far as Sonia's concerned, I'm reasonably satisfied that she's fitting in fairly well. She seems to be getting on well enough with the other kids. I don't see any signs of conflict with them or anything like that as yet. So my initial reaction is that 'Here's a nice little girl who's going to fit well into the situation'. I think in math, in some of the basic skill areas that we've worked pretty hard on this year, that she's a little bit behind the class and I'm going to have to get some flash cards to her and to spend a bit of time with her to catch up. I want to know where she's at before we have these big year-end tests , in May sometime ... As I go around on one of those quick quiz things I often will throw in questions that will give me a pretty good indication of whether a kid has a skill...and I know from those that she's having trouble with multiplication..."

"'Could you please wait for a few minutes?' That sort of thing bothers me. When you're in the middle of something like that and someone asks you if they can go to the bathroom"..You know, it's not a hard and fast rule although I do tell kids to be a little discreet when they..."

There were only two minutes to go when she had asked. "There are times

Case #26  
Sonia  
Page 6

to ask and there are times not to ask."

Part of the math activity was to emboss over coins with a pencil and fill in the appropriate amount of money using that method on a worksheet. He took it for granted that it would be fun and easy for them but the students experienced some difficulty in holding the coins steady. "Most of them handled it pretty well but there were some of them who said 'I can't do this!' Oh, and Sonia, at the back, I had to sort of direct her 'Now this is what I wanted you to do' not because it was so terribly important but I don't want her to get the idea that she can sort of do everything her own way...that sometimes...well let's just take the time to do it this way."

It was noted that she had seemed to be getting exasperated in the attempt to do the exercise..."Yeah she was and at one stage I said 'You're not going to do it your way, you're going to do it my way' more or less and that was the message. And so I spend some time with her to show her that she indeed could do it if she wanted to."

April 19: "Sonia is an interesting little girl...Something happened yesterday and I don't know much about it yet but she was late getting back after recess, quite late, late enough that I went looking for her. This was yesterday afternoon, and she arrived and I asked her 'Where have you been?', you know, as I was wandering the halls and saw her. And I guess she had been involved in some kind of conflict. She'd been threatened apparently by three or four grade six girls, or so the story goes. My question is somebody new getting involved in that kind of a situation so quickly? 'What's going on?'. I haven't the whole story yet.

I haven't decided yet whether she was sort of being a little upstart or whether this is a genuine problem that she has run into and I'm wondering what the reasons are. So I'm waiting and watching with interest to see what develops because it's sort of unusual to be in that situation ... I haven't had a chance to talk to the principal about it. She was down there chatting with him and then making these accusations that these people were harassing her..."

She had bitten the inside of her mouth and wanted to go inside to the main building to the washroom to look in the mirror.

"Well yeah, I'm not buying that sort of stuff. She was disappointed that I wouldn't let her...The 'big hole in her mouth' won't heal just by going and looking at it in the mirror ... Anyway I'll be watching to see what develops on the playground with her..."

During the math class that day, Sonia took out a comic book and began to read it. Along with being told to pay attention she was informed that 'you don't read comics in math class for any reason unless I give you special permission.' It was pointed out that this was a similar incident to the one last week in which he had 'had it out with her'.

"Yeah, I did. Well. Okay, here's this little interaction I have with Sonia. I guess I sort of think...I guess it maybe irks me a little bit to have someone tell me 'I hate doing that', that sort of thing..."

"The kids in this class are largely from stable home situations where respect is an important thing and there's lots of money and they're kind of status quo people by and large and she may be somewhat outside that norm in the class... but she seems like a nice enough kid. I'm not concerned I'm going to have any real problem with her. I just think her

approach and attitude are somewhat different than many of the other kids in the class."

The teacher was asked if he would draw any similarities between Sonia and Pamela in that way.

"Well to the extent... I mean they're much different children, but to the extent that there are things I can notice about their behavior that are in some ways different from most of the other kids and that both of them are from broken home situations. I suppose there's that similarity."

The teacher was asked if his authority ever got challenged by any of the students, and if so, on what occasions?

" I think thus far, maybe it's early to say. I would say that I haven't run into that at all in this class until now. You know the business of ... either that or it's been in a friendlier manner or something. I don't know. It hasn't been as noticeable or maybe as overt or something ... You know she's been around a couple of weeks. I'm quite certain that - well it's highly unlikely that she and I will have difficulties that reach crisis proportions or anything like that. I'm not worried about that at all."

The teacher was asked what "maturity" ranking he would give her. "Well 'maturity' encompasses many things. You know, worldliness and responsibility are far different. I think I'd put her slightly above the middle just now, I might change my mind on that."

April 26: The teacher stopped to spend some time at Sonia's desk during the lesson in progress. " She and I had a little battle earlier this morning with regard to work left at home and I suspect work not done. And I wanted and did make very clear that that's

unacceptable and that's why I had her in at recess briefly to tell her those things and so

then I thought I better say a word or two her to show her that... "

When asked if he had any further thoughts about Sonia the teacher said, "Well I'm still up in the air about her. I think she's maybe one who will try and get away...I think this morning when she didn't bring her work, for example, my suspicion is, and it's without evidence, is that the work just simply wasn't done and, for example, they had some other work to do too, that was the spelling that I had assigned, and she hadn't that finished either. So I'm going to have to keep a fairly close eye on her to be sure that she, in fact, completes tasks. She gets along with kids in the class and I'm satisfied that she is fitting in fairly well but I think she's sort of an 'independent thinker', shall we say, and wants things to go her way and she's not...I wouldn't put her down as being the most conscientious student by any stretch of the imagination but I think those are things that can be worked out fairly easily. When someone comes in as late as she has it's hard to know what routines she's accustomed to." When asked whether her work was neat he said, "It's fine. She doesn't appear to have any handwriting difficulties or anything of that nature."

The situation with the grade six girls had resolved itself without further incident. "There hasn't been a recurrence. I don't know how it was instigated or anything about it... "

"She'd be an average student generally. a little lower than average perhaps compared to some of the people in some areas, most particularly in math. She's a little above average perhaps ..I shouldn't say above

average of the class, but above the lower group

Case #26

Sonia

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that I have anyway on language arts but not too

well founded in some of the math areas. It's going to take some work and also naturally there's the process of- she's learning the routines, my expectations and so on and so forth. I wouldn't say that she's testing exactly, well maybe she is...It's not an overt kind of testing. It's not like that. It's more a situation where she's feeling her way around and finding out what she can get away with a little bit and that sort of thing. So I'm being fairly firm with her as a result, in situations like that."

May 10: "I think we're at the point now where I know her strengths and weaknesses. She seems to be a much more effective language arts student than she is a math student. I think her language arts ability is pretty strong in many ways. She's sometimes a little careless in her work. She can be. "

" I think she likes intrigue a bit. She can be a little sneaky at times. I find her down in the janitor's room. She has developed a friendship with the janitor who lets her into all the places that are generally restricted. As a new student she seems to know the ropes better than most do after five or six years at this school which is interesting. But I don't see any particular harm in it."

He was asked how the social adjustments were..."She seems to get along pretty well with the kids. She's kind of an independent soul. She'll look after herself if need be."

June 7: He was giving serious consideration to placing Sonia in the rejection group and decided on a "not definite-conditional" kind of

placement. "I'd put Sonia in that sort of category.

She's sort of, oh- I don't know ... She's a funny kid..just  
the chemistry's wrong, something like that."

#### Additional Information

Age: 9 years 0 months (mean = 8 years 7 months)

I.Q.: Verbal 104 (mean = 112.73)

Quantitative 103 (mean = 112.65)

Non-Verbal 97 (mean = 111.46)

Achievement: Language Arts 71% (mean 85.07%)

Mathematics 80% (mean = 93.64)

No Engaged Time Data available.

#### Verbal Interaction Data

Sonia	Language Arts	Mathematics	Both Subjects
All Tinit	3.3	7.4	5.4
Product Q	3.3	6.3	4.9
Process Q	1.0	11.1	4.2
Get Atn Q	0.0	5.9	4.5
Comments	5.9	9.6	7.9
Tinit Prai	5.0	9.6	7.5
Tinit Crit	6.3	0.0	4.0
Behavioral	4.2	6.5	5.4
All Sinit	1.6	6.9	3.9
Ss Accepted	3/3	9/10	12/13
Total Verbal	2.8	7.3	5.05

#### Discussion

Sonia was quite a bit older than most of her classmates. Her behavior and attitude were on the whole rather self-assertive when compared to the more compliant members of the class. Her home background may help to explain why she had developed certain behavior patterns.

It looked as though she had a little less respect for the teacher

and might have had better luck getting her own way with her former teacher.

His expectancy of 3 in language arts as well as the comments he made about her ability and performance in that subject area suggested that he thought she would achieve better results in language arts. Her score was 14 points lower than class average. In math the expectancy (5) assigned was lower and it was obvious from his comments that he felt she would perform less successfully in this subject area. Her score of 80% was 13 points lower than class average. So she achieved well below average results in the end of the year tests.

It is difficult for a child to adjust to a new school part way through the school year. As it turned out, this appeared to be a regular occurrence for her. The researcher needed to double check on one of the I.Q. scores and so phoned the school in January, 1980 to confirm the information. She had left the school, in which the study had been conducted, in September. The researcher phoned the new school only to find that she had moved again in December and now attended yet another school in the city. Eventually the information needed was retrieved but the additional information gained was of interest for this child had been forced to adapt to four different schools in less than 10 months. Such adjustments require certain coping styles and she appeared to have developed them but not all of them fitted the conforming child model as might be expected.

The teacher's effort attribution for her was in the medium range so she was not seen to be a high-achieving, enthusiastic student and in addition she occasionally made subtle challenges to his authority which, although they were not serious in nature, became mildly irritating to the teacher.



Her verbal interaction ratios are based on  
the 1464 interactions for which she was

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present. More of these interactions occurred in math partly because he was trying to assess her capability in that subject area and partly because he spent more time in math instruction helping low achieving students generally.

She initiated a great many Sinitis (6.9%) in math but only 1.6% in language arts. He seemed to feel she did not wish to volunteer and participate in language arts settings although he felt her ability level was quite high in this subject area. Math settings evoked more Get Attention questions and Behavioral reminders which were directed to her. Her overall higher than average verbal interaction ratios may be mostly due to the fact that she was a new student settling in and the teacher was concentrating special attention on her as he tried to form his impressions of her behavior, ability, and performance.

## SUMMARY

Individualized profiles were developed for each of the 26 student subjects in this study. Although each profile contains the same basic and requested information which had been provided by the teacher in the form of numerical scores and comments, the case studies differed in various ways. The numerical scores (from 1=high to 7=low) revealed a range of teacher assigned ratings on the 19 measures and most of these scores were substantiated by teacher comments. This indicated that the teacher could make distinctions among the 26 students on these 19 student attribute measures. The length of each case study varied and depended on how much information the teacher had provided about the student during interviews. This in itself indicated that the teacher actually knew more about some students than others. Not all students were chosen by the researcher for further examination of their use of academic time. Eventually the choice was narrowed to a core of eight students who were observed for an average of about nine hours of instructional time in language arts and mathematics. For other students the amount of time observed was less or non-existent, but engaged data were included in the profile if available.

The information contained in these student profiles was obtained over time and represented a considered reflection about each student on the part of the researcher who chose to omit and include teacher-provided information; piecing this information together with other sources of data about each child. The foremost aim was to represent the child as the teacher portrayed him to the researcher as faithfully as possible.

The actual collection of the data from the teacher extended over the three month period. Class rankings were completed on separate days

and the teacher was asked to concentrate on each child carefully while he assigned scores on the 13 Attribute Scales which were completed on an individual basis during a two week period. Data such as I.Q. scores, age, and achievement information were collected at the end of the study. After analyses, the average mean scores for verbal interaction data were computed for each individual student and data on the use of academic learning time, where applicable, were averaged and totalled for each student. Thus, information about students was gathered continuously over the three month period using different methodologies. The portions included in the individualized case study profiles were at the discretion of the researcher.

The first section of each profile purposely alternated between the presentation of teacher-assigned numerical scores and teacher comments taken from the interview transcripts which served to corroborate the assigned ratings. This format was adopted to minimize the reliance on numerical tables and to keep the presentation of the somewhat repetitious, but basic, information for each student as readable as possible. Obviously some sections of the data were more efficiently and comprehensively presented in table form such as the individualized mean scores received on the verbal interaction contacts with the teacher.

In the judgment of the researcher a reasonable portrayal of each student resulted. Although brief, the accounts enable the interested reader to delve into the case studies in order to make fine comparisons between any two students, for example. No two are alike, nor were they viewed identically by the teacher who assigned the scores and made comments

about each student. With this information at hand it is possible to speculate about possible causes for differential verbal interaction received (or for the amount of time spent on task by the student).

The profiles might have been enhanced by more home background information about the children, indications of pupil attitude toward school, and/or by peer opinions/information. However, the case studies succeeded in presenting basic teacher-provided information in order to describe each student subject in this classroom under study.

CHAPTER VII  
TEACHER THOUGHT PROCESSES

This chapter presents the results of the micro-analysis of the stimulated recall data obtained from the teacher subject in this study. The transcripts of the stimulated recall interviews were analyzed using the content analysis system developed and utilized by Conners (1978). Twelve categories comprised the system and most of these were further subdivided to "ascertain the categories' substantive components and explore the richness of the data (Conners, 1978:117)."

Micro-Analysis of Interactive Thoughts

In the present study quantification of the stimulated recall data was to be used to answer Research Questions 4.0 and 4.1, namely:

- 4.0 What information is obtainable from the interviews held with the teacher?
- 4.1 Which kinds of thoughts about students in particular were reported during the stimulated recall interviews?

Previous studies using stimulated recall methodology ( Marland, 1977; Conners, 1978; and Tuckwell, 1980 ) have been interested in the full spectrum of teachers' interactive thoughts. In the present study it was re-emphasized at the beginning of each stimulated recall interview that the researcher was primarily interested in those thoughts, perceptions, and feelings about students which the teacher experienced during instruction and the teacher was encouraged to focus on and verbalize those particular interactive thoughts. As a result of this emphasis, it is presumed that interactive thoughts concerning other aspects of teaching may have been withheld and that percentages of categories reported in the findings from the present study may differ from the other studies which were interested in a fuller range of teacher interactive thoughts.

During stimulated recall interviews, the usual aim of the researcher

is to maintain the teacher's focus on his interactive thoughts and to discourage non-interactive comments, using careful question probes which restrict attention to the lesson being viewed or which subtly guide the interview back to the stimulus lesson. While this aim was followed in principle, often the teacher would divulge non-interactive thoughts about students or background information about them that impinged on his interactive thoughts. These expressed thoughts were not discouraged because they were valuable sources of information but they could not be coded as interactive thoughts. The probing questions used in this study were not kept as pointedly to interactive thoughts. Any additional background information was noted and was explored more fully in later general interview settings.

Not unexpectedly, some differences were found between the percentages of thoughts in categories in Connors' work and those in the present study. More student information was obtained from this teacher overall. For instance about 10% of reported thoughts in Connors' study were coded as Information-Pupil compared to the 16.3% in the present study. Connors' teachers averaged about 16% for thoughts coded as Perceptions which included sub-categories of perceived student Academic Performance, perceived Student Verbal Behavior, and perceived Student Movement compared to about 21.7% of expressed thoughts in the present study.

Tuckwell (1980) implied that a teacher might be hesitant to restate a recurring thought and he suspected that formerly expressed thoughts in his study were sometimes withheld although they continued to exert an influence. Also he felt his teachers treated the stimulated recall interviews as ongoing conversations and so he questioned whether the

percentage of interactive thoughts expressed included all of the influences operating in a given instructional setting.

At any rate, the system proved to be a useful and adequate mechanism for quantifying the thoughts that were expressed by the teacher in the present study. For both Conners' study and the present one, although the rank ordering differed, the five most frequently mentioned thought categories were: Perceptions, Instructional Moves, Information-Pupil, Self Awareness, and Interpretations.

The twelve categories in the Conners' Micro-Analysis system are now presented with a very brief description of the kinds of interactive thoughts they include as well as some illustrative examples taken from stimulated recall data in the present study. The relative frequency of use expressed in percentage form is given as the categories and sub-categories are discussed. See Figure 3, Page 315.

#### Teacher Perceptions

Interactive thoughts coded in this category deal with sensory awareness of such sub-categories as Student Verbal Behavior, Student Noise /Unacceptable Behavior and Student Expression. The highest percentage of this teacher's interactive thoughts were classified as Perceptions. This trend may help to substantiate the high scores the teacher received on Items #19 (Awareness) and #20 (Withitness) on the high inference instrument used in Project Quest. Within the Perceptions category there were eight sub-divisions. The bulk of this teacher's Perception interactive thoughts (44.7%) centered on the Academic Performance of the students. These thoughts may have resulted because he did walk around the room monitoring seatwork,

Figure 3

## Summary of Categories in Content Analysis System

1. INSTRUCTIONAL MOVES      Feedback--Teacher; Structuring; Organizing; Control--Discipline; Presenting; Reviewing; Repetition; Reinforcing; Motivating; Feedback--Pupil; Involving; Transfer; Learning Processes; Miscellaneous.
2. PERCEPTIONS              Academic Performance; Student Verbal Behavior; Student Movement; Student Expression; Student Presence--Absence; Noise--Unacceptable Behavior; Equipment--Materials; Miscellaneous.
3. INTERPRETATIONS        Academic Performance; Student Attention--Motivation; Student Movement; Verbal Behavior--Noise; Student Cognitive Processes; Materials--Content; Feelings; Miscellaneous.
4. EXPECTATIONS            Task Performance; Cognitive Performance; Affective Performance.
5. MEDITATION--PUPIL
6. SELF-AWARENESS        Instructional Awareness; Instructional Evaluation; Instructional Reflection; Content Reflection; Personal Reflection; Affective Dissonance.
7. BELIEFS                    General Pedagogical; Developmental; General Learning; Specific Learning Principles; Memory; General Psychological Principles.
8. OBJECTIVES                General; Lesson Specific; Lesson Facilitating.
9. LESSON CONTENT
10. INFORMATION--PUPIL    Personality; Academic Ability; Academic Performance; Classroom Behavior; Social Behavior; Home Background; Physical Characteristics; General Information.
11. INFORMATION--OTHER
12. FEELINGS

... from Connors' dissertation, 1978:280.



particularly during math instruction and five of the eight stimulated recall lessons were math instruction. He had received high scores on the high inference behavior (#4) "teacher moved around the room a lot monitoring seatwork" from Project Quest.

Academic Performance. Expressed thoughts belonging to this sub-category resulted from seeing a pupil's work in progress, hearing an answer or noting in some way the degree of success the student was experiencing. These thoughts classed as Academic Performance accounted for about 44.7% of all interactive thoughts belonging in the Perception category.

While I stood there, she did seven or eight right in a row...

She'd stopped, as soon as I'd left, she'd stopped...

People are responding fairly accurately and effectively...

The procedure is exactly the same and she did figure it out eventually- although I don't think she put the right answer but she had the right routine anyway.

Student Verbal Behavior. About 16% of Perceptions expressed had to do with student-initiated verbal behaviors ( not pupil responses to teacher-initiated questions which were coded under Academic Performance) These thoughts might be precipitated by a pupil talking, commenting, or asking the teacher a question.

Merrill was sitting there muttering because he's not allowed to answer at this stage of the game.

He's the one who asked 'Can we get going? Yeah, let's get going!'

Somebody had given me a response 'one-twenty' or something like that.

But there were some of them who said 'I can't do this'.

Student Movement. These interactive thoughts involved the expressed awareness of student gross movements such as borrowing an eraser or tidying books. They accounted for about 12% of the Perception category

thoughts expressed.

As soon as I said 'Sit down', she stood up and walked to the pencil sharpener...

..but he still had his hand up and he was still wiggling and jiggling...

She was tapping my shoe. I don't know whether it was purposeful or just doodling. It stopped anyway.

Yeah he's got to check out the machinery..I don't blame him...

He was leaning on the desk.

Noise/Unacceptable Behavior. In this sub-category which accounted for about 13% of the Perception thoughts expressed, the teacher reported being aware of the misbehavior of pupils or of noise that was indicative of off-task behavior.

Geoff was filling his cheeks with air and making strange noises...

That was John whistling...

I found in that lesson that every time we had to change- from the quick quiz to other things- there was a lot of disruption...

... because I was watching Pamela and she was way off task. There were others too but she was the worst. She had put her stuff away.

Student Expression. This sub-category of Perceptions includes the subtleties in student expression such as a worried appearance or a smile that the teacher noticed. Thoughts coded as Student Expression accounted for only about 2.8% of total Perception category thoughts.

T: ...he doesn't appear to know and then he starts to get flustered and doesn't know either way very shortly.

I: What was he doing at the time? How do you know he was getting 'flustered'?

T: Well flushed a little bit, that sort of thing.

He gets a little frustrated and he starts to huff and puff.

Equipment and Materials. Interactive thoughts about equipment and materials accounted for about 4% of total interactive thoughts in the Perceptions category and were expressed when the teacher noticed some item, equipment, or instructional materials.

His sheet was a little messy...

It's a little tight in there with all the equipment (video) so people get behind me...

I'm aware of being stuck up at the front with that machine (overhead) too...you lose people at the periphery...

Malfunction. I think that's the cord. The kids are sitting on it.

Student Presence or Absence. Five students in the room had regular resource room appointments three times a week. The four expressed interactive thoughts in this category, which accounted for about 2% of all expressed Perceptions, concerned the comings and goings of these students.

Now Ian and Tom have come in from resource room...

Yes, she's just arrived back with what- ten minutes remaining...

Miscellaneous. The interactive thoughts coded as Miscellaneous accounted for over 4% of all Perceptions.

Brent's not feeling too well... quite pale...Mom wasn't home so he couldn't go home...

It was warm...

Oh here's the P.A. announcement. I can't hear it anyway. It must have been something about lunch.

That's when I noticed we're at the end...I noticed that it's after the time...

### Instructional Moves

This large category contained about 17% of all the interactive thoughts expressed by this teacher. The category was sub-divided into 14 sub-categories. Instructional moves are reported teacher-initiated actions

or deliberated actions which could be physical, verbal, or non-verbal and which embodied skills or principles of teaching and learning that the teacher consciously was processing while teaching.

Control/Discipline. The greatest number of interactive thoughts expressed about Instructional Moves fell into the Control/Discipline sub-category and amounted to 19.2% of all Instructional Moves thoughts. They included actions taken and actions considered which would deal with various forms of off-task and deviant student behavior.

I had to resort to this hand-raising... I haven't had to so much lately but today I felt that...

I tried to ignore it but it didn't work.

Here I'm looking up at the front again. That's eye contact I'm trying to make.

When I went up to look at what Pamela was doing...

Indeed I initially asked him because I thought he was off-task and I wanted to bring him back.

Feedback Teacher. About 12% of the expressed interactive Instructional Moves thoughts were sub-categorized as Feedback-Teacher moves. In these instances the teacher reported that he was actively seeking information about a student's performance, progress, affective state, or general classroom behavior. Information so gained was influential in determining future teacher action.

... just sort of spot checking

You know I'll know better the next time we talk about it, which will be tomorrow.

Well you can briefly check. If someone can come up and do it then they have the idea.

I went up front. I wanted to see what she had done 'cause I hadn't seen her do any work when I looked up.

Well that's why I asked them to keep those sheets. I'll have a quick look at them. I can tell pretty quick.

Structuring. About 13% of the interactive thoughts about Instructional Moves centered on structuring. The teacher presents material in sequence so it is clearer. Students are directed to attend and focus on the steps or directions presented. Pupils' thoughts may be clarified and extended through use of structuring actions taken by the teacher.

But it turned out I still had to give him a number of hints and I think he did get it eventually with a lot of help.  
I decided to give him time, thinking he might be thinking about it. I backtracked when I started finding the same things that I was finding yesterday and tried to look at it in a different fashion. I'm trying to focus their attention on what they might... but I'm searching for someone to say 'Hey, there are some reasons why this guy has done what he's done'...

Involving. Involving describes an instructional move for effecting student participation in an activity. The teacher attempted to involve his students to maintain their attention and interest and to capitalize on student contributions to enhance the lesson. He felt they gained more from the lesson by being actively involved in it. Thoughts about involving accounted for about 10% of all Instructional Moves.

...and I have to help Pamela with that stuff. She wasn't there for the directions.

And I'm keeping my eyes open at the same time to see if somebody's far off-task or having difficulty and I can charge over there first.

I want to make sure that I have, that's why they read short passages, I wanted to make sure that I gave everybody a chance to read.

Also I suppose part of it is I ask someone from the back to come up and that focuses the attention on the act of moving up so it's not centered so much just around the group near the machine.

Organizing. Interactive thoughts in this sub-category accounted for about 13% of all interactive thoughts about Instructional Moves.

Specifically these thoughts dealt with the allocation of time and materials, the timing and sequence of the lesson, and with moves to keep transitions smooth and the pace and flow of the lesson under control.

...but at that point I'm not going to stop and tell her how to do it...It's too late...

It was a decision to get things in their hands and let's get going cause I knew that it was going to take a minute or two to get that out.

The reason I was giving some of the others was a constraint of time and indeed on the next section, which is considerably down the road, I did all of them.

Here I want to end it off cause I look at the time and find that I only have four minutes in which to read. This kind of a story I need half an hour.

Feedback- Pupil. About 7% of all interactive thoughts on Instructional Moves concerned the provision of feedback to the student about work performance. This usually involved making evaluative statements to students.

Yeah, well, as I told him though, I wasn't satisfied with the way he had worked.

I'm telling him not to worry if the estimate isn't right on.

I started with Mason thinking 'Well, we'll get this kid off to a good start right off the bat...

Reinforcing. This sub-category dealt with thoughts about rewarding students in some positive way for their effort or achievement. About 5% of Instructional Moves were coded as specific Reinforcing moves.

I'm still with Mason...I wanted to...if he was right, if he had a good point, I wanted to be able to say 'Hey, yeah, that's right'.

I ended up with Joanne, not because I wanted to hear her read again, but because it occurred to me that when she had read I hadn't said anything about her reading and that I ought to say 'Well, Okay, very good' or at least that, you know.

...and so I'm trying to take the opportunity to praise them as we go along.

Reviewing. Interactive thoughts concerning reviewing comprised about 5% of the Instructional Moves category. Reviewing thoughts centered on the act of integrating and interrelating knowledge the student had learned previously.

It was just a question of refreshing it for some of them and for others as well...

The sheets that I gave them today were a review of the story which they've read twice.

Usually I start just by getting the details, the factual details of where we are in the story, so it will be a little review, that sort of thing.

Presenting. Presenting refers to those Instructional Moves which impart knowledge and content by using equipment, written materials, or oral presentations which may involve explanations and demonstrations. These thoughts accounted for about 4% of all interactive thoughts categorized as Instructional Moves.

Okay, this is the last sheet that I handed out to them. I simply illustrate by doing these now pretty much.

So I'm writing down a few of them now...

Now here's where it's forming in my mind that I can approach this step by step, partly by taking one example right through the hour.

Repetition. Repetition was one specific category of Instructional Moves that focused on the Reviewing aspect but included only repetition and drill activities in which some content or skill was emphasized. Thoughts in this sub-category accounted for only about 2% of all interactive Instructional Moves thoughts.

That's why I wanted to give him the example...so he could imitate.

We work with them (spelling words) a few minutes through the week.

Motivating. Motivating is an Instructional Move primarily used to instill interest and enthusiasm both intrinsically and extrinsically. Objects, sequences of questions or the teacher's own verbal behavior might be used to motivate. The expressed interactive thoughts in this sub-category were few in number and accounted for some 2% of all expressed thoughts in the Instructional Moves category.

Was it just a bringing to bear their own experiences, given the story situation, wondering if any of them had ever- would like to describe the experiences they've had with wild animals.

I stood there quite a while at Bonnie (because I know she knows quite a bit more than she ever does and even though it's written work she has difficulty with that, while I stood there she did say or eight. )

Transfer of Learning. Transfer of Learning was a sub-category of Instructional Moves that is used to help students generalize or transfer knowledge from one learning situation to another. Only one such ( rather long) example was included in the teacher's expressed interactive thoughts and it had to do with how deceived the students were by a small handful of coins which really represented a large amount of money. By having the students handle and work with the actual coins the teacher felt they would begin to recognize the difference.

Learning Process. Instructional Moves in this sub-category were often closely related with other sub-categories within Instructional Moves such as Motivating, Reinforcing, and Repetition, as well as to Beliefs. Conners (p.131) instructed, "These instructional moves focus on the learning process and included thoughts about learning being meaningful, pupils learning through association and discrimination,



through problem solving and through using a variety of presentation modes."

Once you're slowed down with a word or two, the rest of it is more difficult.

So you know, there isn't the change in stimulus that you need to make good use of the time, I suppose.

I think there's some value in spending a little bit of time in working with the actual coins and in becoming accustomed to them.

It is entirely possible that Learning Process moves have been coded within other sub-categories of Instructional Moves or under Beliefs.

The focus of the study was not on his perceptions of how children learn and he may have withheld interactive thoughts about learning processes knowing they were not of major interest to the researcher. Perhaps the foregoing helps to explain why only .6% of thoughts under Instructional Moves seemed to belong in the Learning Processes sub-category.

Miscellaneous. Instructional Moves coded in this sub-category dealt with items related to teacher's maintenance of a student's self-concept, or preservation of a pleasant class atmosphere. Thoughts in this sub-category also dealt with providing individual assistance to students or involving them in certain types of decision-making which would directly affect them.

I tried to shut her down in a nice way...

If I frustrate that then the speaking out behavior is more frequent.

It's been a pretty rugged year, I try not to put too much pressure on him.

### Interpretations

Expressed interactive thoughts coded in this category were properly those which contained teacher-assigned meanings or explanations of

perceptions. (It was sometimes difficult to distinguish at which point a fact-like Perception became an Interpretation; eg. "He was paying attention.") ) The category was sub-divided by Connors into eight divisions. Most of the interactive Interpretation thoughts had to do with the attention and motivation of the students, their perceived cognitive processing, and how they were feeling. Short examples, taken out of context, are presented as representative of the sub-categories.

Student Attention and Motivation. The substance of thoughts which fell within this sub-category was of major interest to the researcher in the present study. About 26% of all Interpretations were subsumed under this sub-category. The teacher's assessment of whether students were on task, were paying attention, or were interested in the ongoing instruction were classed as Student Attention and Motivation.

I was satisfied that most of them were on task for most of that time period.

Bonnie would dearly love to read the whole thing...

Most of the people in the class are really enjoying the story.. Tom...Nicholas...those people are enjoying it immensely.

When I was talking to him about spelling, that was earlier on, he was being a bit lazy.

Student Cognitive Processing. In this sub-category of interactive thoughts called Interpretations, the teacher inferred what mental processes were occurring as students were engaged in learning activities. He expressed his interpretations of their cognitive behavior and thoughts. These assessments accounted for the greatest number of thoughts expressed under Interpretations (about 43%).

I think she knows a heck of a lot more than she ever does...

Mason is looking for a straight fact answer, there isn't one...

...but even then I was satisfied that she knew what to do and would normally get it correct.

I think maybe she did get a hint because then she elaborated and talked about the orders he was always giving.

Feelings. The teacher interpreted how students were feeling by attending to facial expressions and gestures. These interactive Interpretations of pupil emotions as expressed by this teacher accounted for about 21% of all Interpretations. He had been assigned high scores on the high inference behavior #26 (Teacher responded accurately to both obvious and less obvious meanings, feelings, and experiences of the children.") from Project Quest.

He's either quite tired or quite bored.

She looked quite remorseful at that point...

It makes her perhaps a little apprehensive about her reading and and so she's a little nervous about it too.

Academic Performance. Interactive thoughts dealing with Interpretations of Academic Performance accounted for about 5% of all Interpretation thoughts. The student's written or verbal performance is assessed by the teacher. (Many of these thoughts seemed to the present researcher to fit equally well under Student Attention and Motivation or under Cognitive Processes).

Part of the problem for Ian and Tom, who didn't really know how to do this very well was...

Jim's having trouble.

Student Movement. The teacher interpreted a student's gross movements when the intent of the student was not apparent. Only one such thought was coded in this sub-category.

Yeah it was unintentional, but he was bumping the machine.

Verbal Behavior and Noise. This sub-category included the teacher's interpretations of either classroom noise or a student's verbal behavior which did not seem task-oriented. ( No examples were coded in this category. The present researcher suspected that if any potential examples existed they were coded just as appropriately under interpretation of Student Attention and Motivation or perhaps under Perceptions of Noise/Unacceptable Behavior.)

Materials/Content. This sub-category was meant to include the teacher's interpretation of the suitability of instructional materials for students. ( No examples from the present study were coded here but it was suspected that potential examples may have been coded in either the Instructional Evaluation or Instructional Reflection sub-categories of the Self-Awareness general category or in the Expectations general category.)

Miscellaneous. The miscellaneous sub-category included teacher interpretations concerning certain unusual classroom behavior, home background, or organizational matters. Only four thoughts were coded in this sub-category which totalled 3.3% of all Interpretations.

I thought she was going to swallow the damn thing...

And I thought it might have been because he couldn't see...

#### Information-Pupil

Connors stated that "this thought unit is concerned with information a teacher carries around in her head that centers on pupil characteristics

such as personality, academic potential and performance, general classroom behavior, social behavior, and home background information (p.164)." About 16% of all expressed interactive thoughts in the present study concerned information about pupils. (It was sometimes difficult to decide when the background information about pupils that influenced the teacher became non-interactive in nature and therefore classed as "Case Study" type of information). The teacher referred to many thoughts about pupil characteristics, behavior, ability and home background which immediately contributed to the interactive thought expressed and were therefore felt to be impinging on teacher thoughts and shaping teacher treatment of students during instruction. The general category of Information Pupil was further sub-divided into nine categories. Examples from transcripts in the present study have been presented out of context to illustrate thoughts coded within the sub-categories.

Academic Performance. The academic performance sub-categories appear under the three general categories of Perceptions, Interpretations and Information-Pupil. Under Information-Pupil, this sub-category accounted for 29.4% of all pupil information thoughts and were considered to include those thoughts concerning the teacher's assessment of usual work habits and performance of either individual students or of the class as a whole.

He forgets his rules...

In a task like this (test) almost all the kids get down to it and do it the best they can. They work whatever speed they are able.

Pamela, who's easy to get off task...

I haven't known her (Sonia, Case 26) long enough to know whether she would normally, in a situation like that, ask for help and whether normally she pulls out a book and does her own thing when things are difficult...I don't know yet.

...or with Trisha, who generally gets her work done...

Classroom Behavior. This sub-category of Information-Pupil thoughts was used about 28% of the time by the teacher when expressing thoughts about pupils. Connors described this sub-category (p.170) as "containing both individual and group references and dealing with activities and verbalizations of the pupil or group that the teacher considers typical behavior." Connors reported that his nine teachers referred to this sub-category most frequently when considering Information-Pupil thoughts. In the present study this was the second most frequently used sub-category; Academic Performance being the more frequently used.

She's a chatty little thing. If I'm not keeping my eye on her she really will chat a lot.

She'll sometimes play that off against me saying, 'Well should I only do this much?'

Interesting to watch the ones who are perpetually late...Pamela, Sharon..are often late coming into a group, a couple of others...

Geoff sometimes makes noises just for the hell of it...

Personality. About 21.8% of this teacher's expressed interactive thoughts coded as Information-Pupil referred to personal characteristics of the students.

He's not the kind of kid who's really turned on by school work...  
He's sort of laid-back, easy-going, it'll all come out in the wash sort of thing...

Grant has a good sense of humor...

They aren't as imaginative generally ...

You've probably picked up that sometimes he's fairly silent...

She doesn't strike me as an individual who goes out of her way to be testing, you know, she's not one of those who will push, push, push to see how far...(Sonia)

He's an enthusiastic kid.

Academic Ability. The thoughts in this sub-category deal with the teacher's assessment of the general academic potential of students. In this study thoughts coded in this sub-category accounted for about 10% of all Information-Pupil thoughts.

You know he's very bright.

She seems to be a little stronger in language arts than she is in math, just an initial impression..(Sonia)

He's got lots on the ball...

Well maybe it's not too surprising that Tom would ask a question like that...

Social Behavior. This sub-category relates to peer relationships. Many non-interactive comments described inter-student relationships but only one such interactive comment was coded in this category.

Maureen and Joanne, seated beside each other, they're good friends.

Home Background. This sub-category dealt with thoughts about home background of students processed interactively while instructing. Only about 4% of Information-Pupil thoughts were coded in this section.

She might be somewhat outside the norm in this class...

Brent, whose background of information is just...the travelling he's done this year is really something...gives him a real sense of size of place, geography, and even politics.

There's no problem with money...

Physical Characteristics. Thoughts in the sub-category centered on physical coordination or physical appearance. Infrequent mention was made

of such characteristics in the teacher's interactive thoughts which accounted for only 2.5% of all Information-Pupil thoughts.

He has a funny kind of voice in a way and that threw me initially at the first of the year but his reading is fine...

...with Bonnie sometimes there's difficulty. Her handwriting capability is such that sometimes you can't tell where something is pointing...I should show you her handwriting scribbler. It's something else. She's coming along. She's much better than she was.

He's got a rugged voice, yeah...

General Information. The interactive thoughts contained in this sub-category included background information about pupils which was other than information about the home situation. Few examples were coded in this category and they amounted to 2.5% of the total Information-Pupil thoughts.

He hasn't had one all year...

It's interesting, you know, she says she has taken this particular lesson at her other school...

Of course his time was shortened because of his absence in the resource room.

### Self Awareness

About 12% of all interactive thoughts from the stimulated recall data interviews were coded as Self Awareness thoughts. Connors (p.146) described thoughts in this category as those which indicated that teachers were "conscious of various facets of their performance in the classroom" and were aware of their behavior as they interacted with the pupils. This awareness involves evaluation and emotions about one's performance, deliberations on instructional strategies, and reflections on lesson content as well as on one's personality, appearance, and general teaching.



style. Conners divided this category into six sub-categories which are briefly described and illustrated with excerpts from the present study's stimulated recall interviews.

Instructional Evaluation. The teacher expressed both positive and negative evaluations about his teaching. Such self-assessment thoughts could be about whole class instruction or the handling of individual teaching situations. Totally such judgmental thoughts accounted for the bulk (64.1%) of all interactive thoughts classified as Self Awareness thoughts.

This is a situation where you hand out a highly motivational kind of thing and then try to settle people. Maybe I tried to do that too quickly.

It was not one of those situations where it required intense concentration so they would tire out. There was enough activity.

That remark I just made to Brenda was almost off the cuff, and it's not very effective, I know.

I thought I was fairly careful in giving the directions... but we've done that before, that sort of thing, and that's why I wasn't quite as plain as I ought to have been.

That's unfair to Tim. I didn't ask him to explain it.

The only difference that I think..I should have presented it one way one day and the other way another day, instead of trying to cover the whole thing at once.

You see, I'm still pawning both approaches, which especially with someone who is confused, is not the best thing.

Instructional Reflection. Instructional reflections refer to those interactive moments of decision where a course of action is deliberated. Reflections in the category also involve interpretative assessments of whether students are attending and understanding. About 22.5% of the thoughts coded as Self Awareness were coded in this sub-category.

I started this lesson wondering where am I going to find us today? Where will they be at?

I don't know whether that's listening skills... Maybe I was giving too many instructions at once.

...cause I have to make a judgment... so because one or two turn off what do I do about it?

Well I guess I kind of thought that Okay, that maybe I shouldn't have jumped on him right away. Maybe I should wait a minute or two and let him refresh his memory.

...and I'm starting to think... this is when I'm starting to pull my hair and wonder if I've got to reteach all of this...

Instructional Awareness. Thoughts in this sub-category express an awareness of the effects of strategies used and the impact that such things as the organization and sequence of presentation might have on students. Only about 5.8% of all Self Awareness thoughts fell within this sub-category.

This is a terrific opportunity to ask the sequence of questions that we're supposed to ask, you know, the higher order questions. You can sprinkle them. You know I can ask a lot of just straight lower level questions of facts and so on and build up to the other.

I wondered if I had the hour hand a little bit off place and that was confusing him... That wasn't the case.

When you're trying to function with one of these machines- with the overhead- and operate a class as well... using the Quest items, I'm probably not as 'with-it' as I ought to be.

Personal Reflection. About 5.8% of all Self Awareness thoughts were judged to be Personal Reflections. They included expressed impressions of how the teacher might be perceived by students. Matters of concern could be general style of teaching exhibited, or personality characteristics displayed.

And I thought that I was a little abrupt. I was not feeling terribly well right there and I became a little abrupt with the kids.

Mind you I must say that I was a little crabby today.

Geez...do I sound hostile this morning? ( I felt hostile all morning)...

Content Reflection. In this sub-category thoughts indicating an awareness of factual mistakes or lack of specific knowledge were to be coded as Content Reflections. No instances of such expressed thoughts were noted in the stimulated recall data from the present study.

Affective Dissonance. Affective Dissonance is exemplified when a teacher expresses an emotional reaction to teaching behavior exhibited. Examples of such dissatisfaction with personal performance only appeared twice in the transcripts of the present study and account for only 1.6% of thoughts in the Self Awareness category.

I wanted to get a little further than I did this morning...

I guess I would say I was pretty unhappy with this lesson.

### Feelings

About eight percent of all expressed interactive thoughts belonged to the Feelings category. Connors described such thoughts as "emotions experienced by the teacher during the lesson" (p.175). No sub-categories were created but the emotions in the present study expressed such feelings as frustration, annoyance, enjoyment, concern, amazement, and satisfaction.

This annoyed me in here. Nicholas was very persistent here. I began to get a little ticked off.

I love this. This is the part of teaching that I like the best. This fantasy is my thing. I think it's very imaginative, colorful, interesting. It's stuff that I enjoy myself so I'm kind of on a trip myself and I love listening to the answers I get. I love the insightfulness of some of the kids.

It's amazing. I was amazed at how many people tried to withhold...

I'm a little concerned about Ian in the last couple of days. He's really been acting out.

I felt like I was scampering from one thing to the next.

This is the kind of time that I actually enjoy; being able to get around without a great hubbub around you, on a one on one.

You don't want to hear what I was thinking on that one!

### Beliefs

Beliefs referred to the accepted values, teaching principles and practices which influenced the ways in which the teacher behaved. These beliefs might be about learning processes, both general and specific, or about the appropriateness of using certain teaching techniques with children. The beliefs expressed accounted for about 4.3% of all interactive thoughts and although the teacher was asked to focus on his interactive thoughts about student performance and characteristics, it is interesting to note that some beliefs were expressed as well. Connors sub-divided the Beliefs categories into five sub-categories which are now presented and illustrated with examples from the stimulated recall transcripts.

General Pedagogical Beliefs. General beliefs about students and about the role of the teacher formed the substance of General Pedagogical Beliefs. Overall about half (57%) of the Beliefs were coded within this sub-category.

Proximity is important, and also the ability to move.

If people are working on task- even if they're chatting with someone else, I think that you can learn a lot.

When you teach a large group like this, I like to get to everybody.

I often ignore hands up. I just don't even- the problem with taking hands up, volunteers, is that the same people volunteer all the time.

I guess quite often, especially in math, I question people who might be having difficulty because it's a fast way to find out if they have the concept.

When you're working around a machine like that, the people who are right there are going to be focused in usually, you know but at the periphery sometimes you run into... so it's just a matter of movement, get people focusing in on the business of moving up there.

Developmental Beliefs. The developmental stage of pupils influences the way they learn. Beliefs in this category considered which behavior was most appropriate for certain age groups. About 19% of all Beliefs were coded in this sub-category of Beliefs.

You know they want to contribute and participate.

Kids have the idea that teachers know everything.

When you hand out something like that (money) it's unrealistic to expect children this age to keep their paws off it.

...because most kids at this age level are reasonably successful and even if they aren't you can keep them going...

...and children are perceptive; more perceptive than often we give them credit for. They know if they can do these things or not and if I'm telling them 'Great', and they aren't, then they know.

General Beliefs Concerning Learning Principles. These thoughts expressed the beliefs that active involvement, problem solving, or repetition, to name three, would be meaningful to children. Only five thoughts of this nature were coded from the transcripts which accounted for about 11% of all Beliefs coded.

...because there is some truth, too, at least I think there is, if you require people to write something, even if they know, that the information will stay with them longer.

If you can get little groupings like that, there's nothing wrong with that at all.

You know there isn't the change in stimulus that you need to make good use of the time I suppose.

Beliefs Concerning Specific Learning Principles. Beliefs in this category dealt with principles to be used in more specific learning situations. The motivation, reinforcement, and maintenance of self-concept for students were coded in this category as well. Only four

thoughts were designated as belonging to the Specific Learning Principles sub-category and accounted for only about 9 % of all Beliefs thoughts.

You know when you have the chance to work with things that you can sort of manipulate with your hands, then it's not a difficult-area's not a difficult concept really, I don't think.

Well the other thing is that this is a good opportunity to encourage people to read... They've demonstrated publicly that they can read you see and if you encourage in that sense it may encourage them to read privately too.

Well money makes a hell of a lot more noise than most teachers want but the thing is I think it's good for them to have it in their hands, a concrete object, and to work with it in that way.

Beliefs Concerning Psychological Principles. Beliefs in this category concerned the social and personality development of children and their individual differences. Only two such beliefs were identified in the stimulated recall transcripts which accounted for about 5% of total Beliefs expressed.

I think that all the other kids are aware that there was some difficulty and to brush it under the carpet and then deal with it elsewhere I didn't feel, maybe I'm wrong, was terribly important.

Generally I feel that children should be discreet enough not to be doing those kinds of things. It's more of a general rule.

Beliefs Concerning Memory. Beliefs Concerning Memory included beliefs that cues or hints could aid the student to remember factual knowledge. This category seemed to fit more appropriately under one of the broader belief categories. At any rate, no examples from the transcripts were coded in this sub-category.

#### Meditation Pupil

...ssed in this category were those dealing with the  
te...out the mental processes of a group or of a

specific student. Why the pupil experiences cognitive difficulty or is inattentive and how the pupil understands or remembers are the types of thoughts to be included in this category. Connors did not subdivide this Meditation Pupil category. Nine thoughts from the stimulated recall transcripts from the present study were coded in this category. This Meditation Pupil thought category accounted for only about .9% of all interactive thoughts expressed.

I wondered if she read the story once before and thought she had read it and therefore didn't reread it when I assigned it or something.

I don't think even yet that he has confidence in his ability to tell time. Like on those exercises that I was handing out, I don't think he really had the confidence that he was going to answer the questions correctly.

The assumption is then, in her own mind, that she knew the information quite well.

### Lesson Content

Thoughts in this category (which was not subdivided) were those concerning the teacher's concentration on subject matter or the evaluation of specific content or those referring back to content from previous lessons. Only 11 such references were made in the stimulated recall transcripts from the present study accounting for only 1.1% of all interactive thoughts expressed.

The first one is an alphabetical order thing...

And they all missed the 6:30 one; only that they had the hour hand pointing to the 6 directly.

...just a review of multiplication, addition, subtraction and a couple of little problems just to keep their hand in...

### Objectives

Thoughts in this category dealt with long range and short range pupil outcomes to be achieved. Only seven Objectives thoughts were

coded in all and amounted to .7% of all interactive thoughts.

The category was subdivided by Connors into three sections.

General Objectives. These were broad objectives that the teacher hoped would be achieved in most lessons. Four thoughts were coded as General Objectives.

... (responding well). That's more or less what I was after in that little exercise.

Lesson Specific Objectives. In the lesson the teacher hoped that pupils would achieve certain objectives that had been decided upon preactively. Three thoughts were coded in this sub-category of Objectives.

Part of the idea of the lesson was to demonstrate that we can use a regular tool to measure area and that squares...well basically what I wanted them to find was that squares are a good way to measure area, or square-type shapes...

### Expectations

Thoughts in this category referred to pupil behavior that the teacher expected or anticipated would occur during the lesson. In this study about 3.4% of all interactive thoughts were coded as Expectations. Connors subdivided the category into three kinds of expectations.

Task Performance Expectations. Thoughts coded as Task Performance Expectations referred to the physical performance of an instructional task by the pupil. Twenty-six percent of the Expectations were coded in this sub-category.

You know...the business of coloring over these coins...I think I took it for granted that that would be an easy task and all of a sudden it's not that easy to hold it still and those sorts of things.

Actually I had four and I rather thought that we would get through them but it turned out that there were a few who needed a little more help I guess than I had anticipated.

...because I very briefly give her instructions and she'll be alright.



Cognitive Performance Expectations. This sub-category of Expectations is concerned with whether or not pupil performance on a task was correct. The bulk (66%) of the Expectation thoughts in this study concerned the Cognitive Performance Expectations the teacher held for his students.

I thought to myself that she would normally know the answer...  
The initial ones were ones that I suspected they would all get without difficulty.

... (asked Brenda)..someone who probably knew the answer.

...cause I know, given another 15 minutes at some point, I think almost everyone then will have these ideas down and will be able to tell time effectively.

Affective Expectations. This sub-category included the teacher-expressed expectations for the affective behavior of pupils or the expected misbehavior of pupils. Only two thoughts were coded and they accounted for about 6% of all Expectation thoughts. Both of these thoughts were about Sonia, the new girl (Case 26), as he was forming impressions about her.

She and I will get along very well...

I'm not concerned that I'm going to have any real problem with her.

#### Information-Other

Conners described the thoughts in this category as two basic types of thoughts which dealt with classroom rules about the organizational aspects of classroom life, or with thoughts irrelevant to the lesson. The category was not subdivided. Twenty-two such thoughts were expressed in the present study and they accounted for 2.3% of all interactive thoughts expressed.

It's a nice day.

We work to bells too, and it's not a satisfactory way to close off a lesson, but there it was.

The old hand signal... They know that if I'm working with someone or if I'm working with a group that I don't like them wandering over to see me...so usually a hand signal will have them return to...

("Could you say that one more time?") That shows you how plugged up my ears were! Can't hear a damn thing today.

I need a more comfortable chair. Normally I have a great big easy chair to read in which is very comfortable for me.

I find it interesting...The kids are so accustomed to you now that they don't even notice (the camera).

One of the most irrelevant thoughts and certainly the most amusing was the following interactive thought coded in the Information Other category:

I was standing there right then thinking I'm going to stick my tongue out at that camera ... and then I thought- you can see that some of my thoughts are frivolous- and then I thought if I do that I'm going to have a class full of people sticking their tongues out at you!

#### Summary of the Micro Analysis of Interactive Thoughts

By subjecting the transcripts of the stimulated recall interviews to a content analysis, it was possible to identify the type and quantity of the teacher's interactive thoughts. Conners' (1978) Micro Analysis system was used as outlined by Conners. It was a comprehensive system which more than adequately accommodated the stimulated recall data from the present study. The resultant findings in terms of type and quantity of teacher-expressed interactive thoughts were presented in the first part of this chapter along with illustrative examples taken from the text of the transcripts.

Nine categories and their further subdivision resulted in a total of 60 possible locations in which to code each interactive thought

unit. The teacher was asked to focus on the range of thoughts that were of major interest to the present researcher; namely those thoughts and perceptions and assessments about students (and their characteristics, personality, ability, and classroom behavior to name just a few possible examples) which the teacher consciously processed during instruction.

The most frequently used category (22%) was labelled Perceptions within which the teacher focussed most heavily on his perceptions of the students' Academic Performance during instruction.

Instructional Moves occupied about 17% of his interactive thoughts with particular emphasis here on control/discipline moves, organizing moves, and moves to involve students in the lesson in progress.

Almost as frequently processed were thoughts about Information-Pupil (16%) which were considered to be more background information kinds of thoughts but which did impinge on his interactive thoughts during instruction. Knowledge of their usual academic performance, their usual classroom behavior, and their personality attributes occupied most of his attention in this category.

About 12% of the teacher-expressed interactive thoughts dealt with Self Awareness. This self-monitoring tendency was most frequently revealed in his thoughts about evaluation of the instruction he was providing.

Interpretations at 11.7% were nearly as frequently processed as Self Awareness thoughts. Within this category, most thoughts dealt with his interpretation of his students' cognitive processing and how they were understanding the instruction in progress with a lesser, but

substantial amount concerned with his interpretation of their states of attention and motivation.

His expression of his own personal Feelings experienced during instruction accounted for about 8% of total expressed interactive thoughts. The other categories of Beliefs (4%), Expectations (3.5%), Information Other (2.3%), Lesson Content (1%), Meditation Pupil (.9%), and Objectives (.7%) were used less frequently as the percentages indicate.

Of all 60 subcategories the three most frequently used were Perceptions of academic performance (94 thought units), Self Awareness of Instructional Evaluation ( 77 thought units), and his Interpretations of Student Cognitive Processing (49 thoughts) during ongoing instruction.

The lower percentages expressed in certain of the nine categories may be due to the fact that these accommodated interactive thoughts only and the categories like Lesson Content and Objectives probably would have received more preactive attention from the teacher. Also the fact that he was trying to adhere to the researcher's request that he restrict his reporting to the narrowed focus of interactive thoughts about students during stimulated recall interviews may help to explain this trend.

As a final comment on the use of Connors' Micro Analysis system for coding the interactive data from this study a couple of observations are made. In three of the subcategories no thoughts were coded from the present study as there seemed to be no suitable examples. Also due to the fairly large number of thoughts classified as Feelings (80 thought units) in the present study, this category could have been subdivided

in some way to deal more precisely with this information. It is speculated that Connors' nine teachers did not provide as great a proportion of Feelings for the following reasons: Perhaps a personality difference in teachers prevents some from experiencing and articulating such thoughts processed during instruction. A more plausible explanation would be that Connors' teachers were involved in two stimulated recall interviews compared to the eight stimulated recall interviews in which this teacher participated. In addition, many general interviews had helped to establish the quality of rapport which would have to exist before more personal feelings would likely be expressed. It must not be forgotten too that the teacher and the researcher worked together over a three month period.

#### Macro-Analysis of Interview Data

The result of using Connors' macro-analysis system was less than satisfactory for plainly it was not suited to the data from the present study although the system had accommodated the data obtained from the nine teachers in his own study. A perusal of the categories used in Tuckwell's (1980) macro analysis system suggested that they more closely fit the data from the present study.

The teacher subject had not been asked directly to express his "beliefs" about teaching or to identify the general "principles" of teaching which he believed to be influential in his own work. Thus any beliefs and principles which appear to emerge from a macro analysis of the data run the risk of being rather incidental. However, those expressed are deemed to represent the attitudes and priorities exerting an influence at that particular time.

The transcripts of both the general interviews and the stimulated recall interviews were comb-searched using the "sieve code" procedures as outlined by Guetzkow (1950) in order to find expressed priorities and personal convictions about the instructional processes in a classroom, working with children, or about his perceived role as a teacher. The following examples represent these attitudes and priorities which appeared to underlie his routine teaching behaviors.

The teacher tended to depend on his own judgment about students. In speaking particularly about forming initial impressions during the first week of school the teacher commented:

"With respect to the children I try to have them talk a lot and I talk a lot to them and they interact."

What things are you noticing?

"Well lots and lots of things. I can notice how someone speaks and, of course, I may make quick and erroneous judgments about their ability based on what they can do verbally; if not "erroneous", incomplete... ..So certainly I make all sorts of judgments about children very early on in the school year despite the fact that I tend, just as a matter of practice, to avoid the officially written records."

You don't go through the Cum. cards?

" No, and I don't ask for last year's report cards either...

... You can't meet somebody without making some kind of judgment about them unless I say to myself 'This is a token introduction and I'll never see this person again' but that's not the way it is in school. You're seeing these people and you're living with them for a year, pretty nearly a year. So I concentrate very hard on what they're doing and

and then naturally I make judgments."

Do you change them?

"Sure I change lots of judgments about individuals...through the year.

I like to remain quite flexible in my judgments about people. Not all of them are changed."

How accurate do you think you were at the first of the year?

"Oh pretty accurate ..I think so. When we talk about Keith, for example , my changed attitude toward him it's not a violent shift it's a...an adjustment in my feelings about the kid."

The teacher had a strong set of feelings about the giving of marks, report cards, and the ranking of children in general. He related that during a teacher-parent interview, Brenda's (Case #7) father wanted her exact ranking.

"He wasn't satisfied with the general kinds of comments that one makes...He really pressed me for an exact ranking so I said 'about 12th or 13th on certain things'."

That didn't go down well?

"Well he told me he thought my assessment of the child was about accurate but he wanted, as a means of persuading her to do better, he was going to tell her this and hope that she can move up. I'm sure that at the next interview he'll be wanting to know 'What's her exact ranking now?' I have visions of that."

Do you indicate to them where you think they are? compared to others?

"I don't compare children with others as a general rule and that's what I tried to tell him but he wasn't going to accept that. He was almost on top of my desk. Quite an interesting interview."

The comments about Tom's (Case #15) academic performance at the end of the year were not in relation to the performance of classmates but rather to Tom's prior performance.

"What a super job this kid's been doing! I don't know whether you noticed but his math score was 53 out of 60. His reading... I think he was in the third percentile in decoding and the eleventh in comprehension last year and this year he moved to about the 35th. That's a pretty marked improvement!"

The teacher tried to be realistic in the giving of grades on report cards and in his dealings with the parents and the students themselves when assessing the ability and progress of a student.

"Well last report card interview Mason's (Case 20) mother came in pretty hostile and I sort of had to calm her down. Last year on his final report card, when we had a point marking system, you know four is the top grade, he had all fours except for three of his marks that were threes. There's no way that he... I mean I haven't given anybody those kinds of grades!"

Do you save them til the end of the year?

No, I'm not saving them at all. I just don't see people as being that excellent I guess, I don't know. And she's distraught because her son was... well think of it this way. You've been around the class long enough to know that Mason's not the top pupil in the class. What grades do I give the top people if I'm handing those out to him?"

Is there anybody who is receiving fours?

"Sure, lots of them. I give out lots of them but I don't give them in everything, not in every subject... They become meaningless. Well



I talked her out of it. I was very careful and went through the areas that I thought he... I was trying to give her some idea of where her kid was at and she said 'Well Gee, you know, after last year I thought he was a top-notch student.' No, she was pretty accepting. I think when you finally ask people 'Do you want me to say your kid's top of the class if he isn't they sort of say 'No I'd rather have an honest assessment.'...Well it's interesting. I always find parents pretty accepting of the sorts of observations that you make but the problem I've run into this year with two or three people is that they had an entirely different picture last year. And I'm not being critical of the people who taught them before."

Nicholas (Case #19) had a similar kind of report card. "There is no way...That's just not a realistic report card and the assessment is not as I see it."

"... Well the way I look at it is I'm reporting to parents really and it's unfortunate in a sense our style of reporting is that. That's the element of competition - 'I have 14 fours and you haven't got any' - I think we should get away from. We write a lot of comments on them but there's still a sort of rating. Well next year what I'm going to do is I'm not going to hand out report cards to kids, I'm only going to hand them to parents."

What if they don't come in for an interview?

"Well I can't be quite that stringent because we are obliged to get reports home at one point or another but basically I'd like to see parents. I'd like to give the reports to the parents."

But the kids will still see them.

"Except there isn't the immediate hysteria that surrounds the giving

of the report card...and the dashing of hopes."

In speaking about questioning children the teacher commented,  
"When I get an incorrect answer it's a message to me....The thing is I can get a correct answer to every question that I ask. I just have to ask the right people you know."

Are you conscious of their feelings?

"Well there's that aspect, of course. I want to have a good reason that a kid can recognize for praising the child and secondly, of course if you're just dealing with information...If I'm bothering to teach it then I want them to have it and children are perceptive, more perceptive than often we give them credit for. They know if they can do these things or not and if I'm telling them 'Great' and they aren't, then they know. So I like them to produce a little bit and I like to praise."

He also commented,

"You can focus in on a child and really embarrass him."

He reflected about an interaction with Mason at the conclusion of which he was able to praise him for eventually giving the right answer.

"It would be a bit of a saw-off because I think that he was a little flustered, a little embarrassed and I think I focussed on him a little too long ... Well I hope that he's not upset cause that's detrimental to learning."

The teacher was asked how he thought Nicholas (Case #19) reacted to an instance of assessment concerning his oral reading followed by support and encouragement.

"No, I didn't consider whether th might...I guess, in a sense

unless something really needs to be private I think that...

All the other kids are aware that there was some difficulty and to brush it under the carpet and then deal with it elsewhere I didn't feel...Maybe I'm wrong, was terribly important. But I certainly hadn't considered that it was anyway."

The teacher reflected about working with Ian and Tom, the two concern boys.

"I think that both these kids, Ian and Tom, are really approachable young people who are...well I've taught in other schools where kids have learning problems but they also have severe personality problems. These kids have problems but they're fairly open about them."

You talk to them about these things?

"Sure. Well you know even kids who aren't smart aren't stupid. They have a very accurate perception of where they are in a class situation in terms of their capabilities and they know who the brightest are and they know who the dullest are...The interesting thing is that these kids have a pretty good perception of where they're at. And the important thing I think is to say 'Well just cause you don't know math doesn't mean you're dumb, it just means you don't know math, that kind of approach."

The teacher took a similar approach with Bonnie (Case #18). She often experienced frustration with not being able to keep up with the written work.

Does she say things to you or do you just know?

"She has on many occasions. We've had some very frank discussions about some of her problems and she's very aware of the difficulties she has."

One objective that the teacher appeared to have for the students in his room was the development of a good self concept and the ability to see their problems in perspective.

You appear to like children.

"Well I may not be able to do everything right, but I do...

Children are very important to me."

You were saying one day that the self concept part was important to you.

"The affective is... I want children to leave my class saying 'I like myself'. If they can do that... If they don't know that two plus two equals four at least they've succeeded at something. Schools are important, but at this age?"

Speaking of Ian and his many problems...

"It's been a pretty rugged year and I try not to put too much pressure on him and yet I want him to ...Well he's a year behind now. I'm pretty anxious that he, at least, leave grade three feeling he's a decent sort of fellow anyway with some of the basic skills that are required. He's a nice boy and school's not going to be easy for him and it's probably going to be harder for him."

"Kids who like to come to school learn more effectively than those who don't."

When the class as a whole was engaged in independent seatwork activities the teacher spent most of the time walking around monitoring seatwork and providing individual help to students.

"It's a time that I enjoy and sometimes the pace of the lesson will suffer because I'll be spending time trying to make sure that people have the idea. I find I sometimes think I can have greater

impact, well it makes sense, a one to one situation. Well sure it's a good way to evaluate too as far as I'm concerned. I can tell right now if a kid can do that and I sort of mentally store some of that information."

"This is the kind of time that I actually enjoy- being able to get around without a great hubbub around you, on a one to one. Just to briefly check. I find that I can retain quite a bit you know...get a pretty good impression, put it that way."

On other occasions he spoke about students who are able to answer questions correctly all the time.

"But you see on a day to day basis you have to look at other things because you say to yourself 'Okay these people who answer these questions, that's great, but I have a responsibility to these other kids too...to at least try to make sure that they're going to get it. And I hope that I try to do it in a way that... You know, a kid may not know math. Doesn't mean he's dumb, just means he doesn't know math very well and I want kids to go away feeling that; not feeling that 'Hey, I'm dumb'."

"I get almost zero reward from asking people who I know will provide the answer. I don't get a reward from that. I have to test by asking people for myself. I have to test to find out whether children understand the concept. The children that I'm going to ask are the ones who might have the greatest difficulty."

In Connors' study, Equality of Treatment was a concern expressed by his teachers. This teacher expressed several thoughts which indicated that he was concerned about fairness and equality of treatment as well.

"One of the problems I have with Brent is getting him not to shout out and very frequently, well he is getting better, but often I have to remind him that 'Brent, the procedure we use is hand raising so I can get to a variety of people'."

"In a situation like this, just try to get everybody once, or something like that and it's going quite well."

"I often ignore hands up. You know I just don't even... The problem with taking hands-up volunteers is that the same people volunteer all the time."

"I want to make sure that I have... That's why they read short passages. I wanted to make sure that I gave everyone a chance to read."

"I have to say to myself that these kids deserve to be asked cause they know this stuff quite well. I've been surprised so rarely this year by Joanne not knowing something that I sometimes say to myself 'Hey I have hardly asked this kid a question all day'. So you have to include, when you teach a large group like this, I like to try to get everybody."

"Ian spends a lot of time off task, quite a lot of time off task, and I know that. And one has to sort of balance off how much time to spend keeping him on task specifically and that's a judgment that you have to make and it's difficult." (in fairness to the time demands made by other individuals in the class.)

The teacher gave more evidence of favoring inequality of treatment overall however. He regarded his students as individuals it seemed and different approaches were taken with them and disciplining was contingent on various factors, not universally applied. Little evidence of "disciplining" occurred, therefore, because the usual practice was to deal with an incident in a low-key manner, often in a private conversation at recess time or during class.

"I'm not very fond of generally applied punishment or generally applied anger. That kind of thing is not my style and anytime I fall into that sort of trap myself, if I ever make a sort of class-wide threat, I find that it works very poorly for me because I... You must consider people as individuals. I don't like that form of discipline in a school except in rare circumstances ... then invariably what happens is the very person you don't want to step out of line inadvertently does so. Then what do you do? Then you either strap or lose face. That's garbage! No, I think that's a fast way to lose the respect of children if you frivolously apply..."

"The thing is whenever I chew out a kid, which is rare, I have a hell of a time keeping a straight face."

Some comments taken out of context may serve to demonstrate that differential treatment was provided to class members. In some cases when obvious misbehavior was occurring through what he considered to be a fault of his own, he chose to ignore it unless it became too great.

"The problem is sometimes I'll look up and I'll see someone like Edward fiddling around or Geoffrey or some of those people. And I sometimes have to lay off those people because the kids have the

concept and I'm overdwelling on it and it's not really fair to be ..."

"I don't know who's wandering around there I didn't see ...Joanne.

Oh well, it's alright if it's Joanne. She has a good reason, no doubt."

"Also I like to satisfy Brent's need to speak out too. If I frustrate that then the speaking out behavior is more frequent."

"Sometimes staying on task in school in class time is difficult for him, or appears to be, because he doesn't do it but anytime I say

'Okay, Grant, that's fine but you best have that done and here tomorrow' he always does it and does it well."

"It's discouraging for her to have to do written work. I try not to put too much pressure on her for written work, you know. She'll sometimes play that off against me saying 'Well, should I only do this much?' and if it's a reasonable amount I'll say 'Yeah, that will be fine'."

"You know, it bothered me a lot more earlier in the year. You could spend two-thirds of your day saying 'Nick, sit still'. I very rarely bug him about that." and also of him..."You always question someone who is willing to set themselves up as the class clown which Nick does from time to time and people in the class know very well that it's Nick's turn for a pat on the back sort of thing..How happy is an individual like that? Nick seems like a happy enough individual but underlying that there must be some need for attention that goes unsatisfied."

"Partly with Marilyn I like to check up and make sure that she's got the skill."



Two thoughts reflect an acknowledgement of the harried pace of classroom life and the demands on the teacher...

"Pace and flow of the lesson. Teacher has to be very careful of those kinds of things because kids will sidetrack you and you know they want to contribute and participate."

"I'm jumping ahead in my mind to the Five Chinese Brothers, you know this sort of thing. We do that in conversations often I think; considering what we are going to say next without really listening to what somebody is talking to us about. Certainly in a situation when you've got a lot of people talking at you... I find myself doing that."

The teacher provided praise and encouragement for the students in his room. It was not lavishly or thoughtlessly given and not indiscriminantly applied. The following thoughts reflect his desire to provide meaningful praise and encouragement.

"With handwriting... I don't take any unique or unusual approaches to it or anything but you can sure get a lot of positive feedback to children in a handwriting situation because most kids this age level are reasonably successful and even if they aren't you can keep them going..."

"This ("poor") group I think enjoys the oral reading exercise because I try to build them up to indicate to them that I think that they're doing, in general, a good job and it gives each one a little ... you know, the focus is on them briefly and they can succeed with these stories. They're fairly simple and they can succeed at them.

So it's a good opportunity for lots of positive reinforcement."

And again of this reading group ...

"The last few weeks I've been quite pleased with the way these people have been oral reading. They've come a long way. Word recognition skills seem to be improving. They're aware of expression. Well most of them understand that when you read orally, you read so that others can hear. And they've really improved since the beginning of the year and so I've been trying to take the opportunity to praise them as we go along...Well the other thing is that this is a good opportunity to encourage people to read I think. They've demonstrated publicly that they can read you see and if you encourage in that sense it may encourage them to read privately too."

Reflecting on working through a long interaction with Mason the teacher commented:

"I did a lot of structuring for him and he did answer and I didn't understand his answer. I tried to rephrase it and he didn't agree. So I asked him to rephrase it himself and he said the same thing. If he was right, if he had a good point, I wanted to be able to say 'Hey, yeah. That's right' but I didn't understand and I thought 'Well we've spent enough time'."

"I ended up with Joanne, not because I wanted to hear her read again, but because it occurred to me that when she had read I hadn't said anything about her reading and that I ought to say 'Well Okay. Very Good' or at least that. So she finishes up."

"Later on, by design, I went back to him and gave him a short and fairly easy part to read and he did it well and then I could praise him and did. The thing is they're reading publicly so the evidence is there and so my comments ... if I say 'Very good. That's just dandy' everyone knows that that's not the way it was. So I try to make constructive comments ... Well sometimes the remarks are a little pedestrian. It's important I know to think of specific things to say about people's reading and about their work as well and yet you would need a list of 1001 items and sometimes that's difficult ... And that remark I just made to Brenda was almost off the cuff and it's not very effective I know."

The thoughts expressed to this point contain implicit attitudes and priorities about his role as a teacher and the ways in which he prefers to deal with students. These are the clearest indications available concerning this teacher's system of beliefs and values but one could clearly derive the following priorities:

- the development and maintenance of self concept in the student.
- the development of a realistic view for the individual student (and his parents) of his strengths and weaknesses as a student.
- the provision of support and encouragement to the student.
- the regard for each student as an individual requiring differential treatment and consideration while at the same time ensuring fairness and equality of treatment for all students in the class.

The only other thoughts included in this section are those concerning his participation in the research experience itself. He was asked to comment on any effects the presence of the observer and the recording equipment had on him and on his teaching performance.

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"Well you were around long enough to know that probably I have enough other things going that I really couldn't change my routine significantly... Well I became so accustomed to having you there although there was...you can't avoid the fact that there's someone there and you know they're there but that's fine and for example within the last week there have been a couple of times when I've even sat on my desk which I don't think I would have done if you'd been there but my routine has not been... Well I probably wasn't much different after you were there a couple of days than I was toward the end."

You were used to the Quest coder too.

"So I wasn't too worried about having you or the cameras or the tape recorder or anything else there. Certainly the kids weren't. No one even mentioned to me that you'd gone!"

What about the way that you were thinking about the students?

"Absolutely. As soon as we got into some of these things and you were asking me questions that causes you, it caused me to focus attention on the kinds of questions that you were asking."

Which is sort of too bad from my point of view...

"Well yeah, but if you ask a question and want someone to focus. The other alternative would be to do it all at the end."

But I needed to know these things in order to develop the 26 portfolios but through your eyes, how you say you feel about them and some were chosen for intensive observation (use of academic learning time) on basis of your comments.

"Well I think that's an unavoidable difficulty which you'll have to..."

...I think it's quite clear that this year I know more about children in my class than I ever have before- about their personalities. And I've given greater thought to the kinds of individuals that they are and how I interact with them and how I feel about them and things like that...and sure, that focus is a result of the Quest study and your interest...so certainly whether it has had any effect on the children or how I would have felt about them anyway I don't know but I certainly have focussed more than I have before."

The teacher had begun to rethink the questions posed to the poor reading group .

"But that doesn't mean I oughtn't to ask them questions that cause them to think!... One thing that all this has done for me, aside from ruining my health, is it causes one to rethink approaches that you're doing. That doesn't mean that in one fell swoop I'm going to redo those things that I perceive to be weak. At least if I think about them I can make judgments about them and move one way or another and that's useful."

#### Summary

In the first section of this chapter, the results of the micro-analysis of the stimulated recall interview data were presented and discussed. The micro-analysis system developed by Connors (1978) was employed in order to convert the qualitative interview data into quantitative form which could then be analyzed to identify the

predominant types of interactive thoughts this teacher processed. Although Connors' system had nine major categories, many of which were further subdivided, most of this teacher's interactive thoughts were categorized in the three areas of Perceptions (with a concentration on perceptions of student academic performance during instruction), of Instructional Moves he was making (particularly those dealing with classroom control), and of Background Information about Students which the teacher had brought to the lesson situation. A substantial proportion of teacher-expressed interactive thoughts were Self-Monitoring in nature as the teacher consistently expressed an awareness and concern for the effectiveness of his teaching behavior during instruction. He also expressed a considerable number of personal Feelings concerning different aspects of the ongoing lesson throughout the stimulated recall interviews. These more personal revelations perhaps indicate that a suitable rapport had been established for conducting stimulated recall interviews and for his sharing affective reactions to his teaching performance with the researcher.

A macro-analysis of all interview data, both stimulated recall interviews and the more general interviews which had been conducted with the teacher was performed in order to identify the more global attitudes and priorities which, by virtue of being expressed, appeared to exert a degree of influence on his teaching style. On the basis of such teacher-expressed thoughts, the researcher tentatively concluded that four attitudes or priorities were representative of those guiding

his dealings with students in his class:

- the development and maintenance of self concept in the student.
- the development of a realistic view for the individual student (and his parents) of his strengths and weaknesses as a student.
- the provision of support and encouragement to the student.
- the regard for each student as an individual requiring differential treatment and consideration while at the same time ensuring fairness and equality of treatment for all students in the class.

It is to an examination of the observed teaching behaviors of the teacher subject in the present study that the discussion now turns.

## CHAPTER VIII TEACHER BEHAVIOR

The findings in this chapter are in answer to Research Question 5 which, in broad terms, asked "How could the teaching behavior of this teacher subject be described?"

In the first section of this chapter the observed teaching behaviors of this particular teacher as recorded for Project Quest on 31 high inference variables are summarized and used to develop a descriptive profile of this teacher's behavior during instruction.

The second section of this chapter describes the verbal behavior of this teacher using the low inference data collected on the DIOS (dyadic interaction observation system). The many DIOS categories indicate what kinds of verbal behavior the teacher exhibited during instruction. Any differences in the teacher's verbal behavior exhibited during language arts and math instruction are identified as well as any differential verbal treatment of particular students or groups of students.

### High Inference Variables

Teaching behaviors as observed on the 31 high inference variables from Project Quest were assigned a numerical value of 1 to 5 or were coded as "not observed." A coder for Project Quest made 10 visits to the classroom (five during language arts instruction and five during math instruction) representing about 10 hours of classroom instructional time over the period ranging from February 19 to May 18, 1979. For the purposes of discussion here the ten sets of coding scores received by the teacher on each of the 31 variables have been totalled and averaged for the three months. These three months coincide fairly well with the March 1 to June 7 timeline observed by the present researcher so that



data gathered were pertinent and relevant to this study as well.

On all 31 variables (see Appendix A) the teacher scored above the mean average for the sample of 60 teachers subjects in Project Quest and on eight of these variables he received a top-score of five for every observational visit made. As a result he was one of the highest scoring teacher subjects on these variables which, in the literature from correlational studies, are seen to be highly desirable and effective teaching strategies.

Some of the 31 variables vary in the degree of high inference judgment necessary on the part of the coder. For instance, Items #18 and #27-31 are based on summarized impressions and ratings of the more objective (and low inference) verbal interaction data gathered for Project Quest. On three of these (#28-providing "sustaining" behavior in the form of clues or rephrasing of questions to encourage and extend pupil answers, sample mean= 3.81 ; #29- use of "praise", sample mean =3.84 ; and #31-"acceptance of student-initiated interaction , sample mean=4.02 ) the teacher received a perfect score of 5 overall. He also scored well on #27-"selecting many different students to answer" and for #30-"using criticism with the more able student" and #18-"using an appropriate mixture of high and low order questions."

The composite profile of this teacher using these scores might result in the following description: The 26 children in his classroom had already internalized a "system of rules and routines" (#1) and, as a result, little misbehavior actually occurred in his room. Any instances of misbehavior that did occur were (#2 and #3) "quickly spotted" and "handled in a low-key manner" (5), usually privately. He was constantly

"on the move" (#4) during seat work activity and was thereby able to "spot potential problems" (#2) and to provide individual attention and to (#14) "spot check assignments" as they were being completed. This was particularly true in math classes where the children worked as one large group. "Spot checking" (#14) was also accomplished by involving particular students during instruction and presentation of both math and language arts lessons.

He was able to command the students' attention readily and would sometimes use a "hands up everybody" (non-verbal) "standard signal" (#9) to alert them. He received uniformly high scores for this and for "waiting to speak" (#10) or "stopping his instruction in progress until all children were attending" (#11).

Children were able to work on their own on independent math activities and in reading group situations, particularly the better reading group, because he chose "independent activities that were worthwhile" (#6), "task-oriented," and which seemed to "optimize academic learning time" (#8). He utilized a variety of instructional techniques which maintained student interest and involvement.

Using the data from the particular high inference variables, derived from Kounin's (1970) work, which were more global and all-encompassing, the teacher could be described as personable, supportive, liked and respected by his students. This teacher consistently displayed a high degree of "warmth" (#25) and "empathy" (#25) toward the students, was "clear" (#23) in presentations to the class and demonstrated "persuasiveness" (#24) or charismatic motivating behavior. He was rated high on "withitness" (#19) or awareness of what was going on, and on

"overlappingness" (#20) or the ability to attend to more than one issue at a time, such as evidenced in the reading groups situation. Both were ably demonstrated by this teacher whose instruction was well-paced, with good "momentum" (22) and with "smoothness" (21) in transitions from one activity or subject area to another. If fine tuning improvements were to be made anywhere, the physical transitions from seats to reading group areas could have been accomplished, perhaps, with more army-like precision but although this was acknowledged by him during interviews as an area for possible improvement, he chose purposely to allow the students a bit of breathing space during these times.

In summary as reflected by Project Quest's data representing about 10 hours of classroom teaching, this teacher displayed a high degree of proficiency in classroom management skills, instructional skills, and in interpersonal skills which are embodied in this high inference data collection instrument.

With both the Quest coder and the present researcher the teacher subject was extremely cooperative, pleasant, and accommodating. Having spent three months at the school it was obvious to the researcher that he was a popular staff member who got along extremely well with colleagues and whose good humor and repartee were appreciated and enjoyed by fellow teachers in staff room conversations.

#### Teacher Verbal Behavior

##### Verbal Interaction Data

The verbal interaction data consist of 2715 interactions which were recorded during 14.9 hours of language arts (1524 interactions) and during

10.5 hours of math (1191 interactions) representing 25.35 hours of combined instructional time in all.

While recording each interaction, any number of applicable categories out of a possible 60 categories across the row could be checked. At the beginning of each interaction the identification number of the student involved was recorded in addition to whether the verbal exchange was a Tinit (teacher-initiated) or a Sinit (student-initiated) interaction. In order to identify the type of interaction one selection from the seven types of Tinit was made or one choice from the two Sinit types. The grouping mode in use (individual/independent work activity, small group, whole class) was always checked as well as the duration of the interaction (long or brief). Other information about the particular interaction was recorded by putting check marks in the appropriate boxes along the row on the Dyadic Interaction Observation System (DIOS) Instrument.

An examination of the data revealed that about eight categories were very seldom used and these were deleted from the analysis. In addition it was advantageous to combine several categories into one more inclusive category (eg., "Sustaining" is comprised of the three former categories of Repeat Question/Give Clue, Pose New Question, or Repeat Child's Answer). A Sustaining response was used by the teacher following an incorrect answer or when the teacher wished to extend a pupil answer given).

In all, 32 categories were selected for use in order to compute frequencies and percentage ratios for each student. These ratios were calculated for each of eight separate language arts settings (eg., reading

group instruction, working in spelling workbook, listening" as a whole class to the teacher reading the novel) and were recombined to compute a total language arts instruction ratio. Ratios were likewise calculated for each of the five math contexts and for all math instructional settings (by combining the five math contexts) and also for all instructional settings in both language arts and math to produce a total verbal interaction ratio for each student. Sixteen of these categories were further separated into three grouping modes (of individual/independent, small group, whole class) in order to see what ratios of the 16 categories selected occurred in which grouping mode. For an example of the individualized ratios computed for each child in the settings for which he was in attendance, see those included in Case #1, Sharon and Case #3 Geoffrey.

#### Sinit Interactions

From a closer examination of this verbal data it was possible to identify certain characteristics of this teacher's behavior which substantiated data gathered from other sources.

The relative proportions of Tinitis and Sinitis reveals a prevalent teacher characteristic; the involvement of students and his acceptance and integration of student ideas. He had received high scores on this high inference behavior #31 ("When pupils initiated interaction, the teacher accepted and integrated the pupil question, comment, or other contribution."). Of the 2715 interactions recorded, 1931, or 71.1% of them, were Tinitis and 784, or 28.9%, of them were Sinitis. Effectively over one-quarter of all interactions during the 25 hours of instructional time sampled were initiated by the students. These Sinit ratios differ

for subject area, for group memberships, and for grouping mode. More Sinitis, for example, occurred during the individual or independent work activity mode (49%) than for either small group (29%) settings or whole class (23%) settings.

Specifically for subject area comparisons, Sinitis accounted for 31.16% of all language arts interactions but for only 25.9% of all math verbal interactions. This may indicate a difference in the teacher's instructional approach to these two different subject areas. In any event, although percentages differ for grouping mode and subject area, this teacher, on balance, permitted the students to initiate interactions about 29% of the time which is a considerable proportion when compared to the interaction patterns in many classrooms.

The high proportion of Sinitis also indicates another feature of this teacher's behavior. By inference, drawn from pre-lesson conversations and observation of this teacher over the three month period, it appeared that he did not engage in extensive preactive planning as a general rule. Rather, the global objectives of the lesson and the necessary instructional materials were assembled and he proceeded by attending to his general lesson plan, to student-provided contributions, to student-provided cues such as inattention or academic performance or to his perceptions of their cognitive processing as the lesson progressed. Zahoric (1970) had noted that teachers who planned extensively were less flexible and more rigid; Marx and Peterson (1975:16) found that teachers who made fewer preactive decisions made more interactive decisions and had students with more positive attitudes; Shavelson (1976) felt that most interactive decisions were modifications of those made in planning; and Clark and

Yinger (1977:292) felt that interactive decisions were more a "process fine tuning and adapting to the aspects of the situation that were unpredictable in principle" (such as specific student responses). It could be argued that the acceptance of a high proportion of student-initiated interaction is representative of interactive decision making.

Cooper (1977:421) claimed that a teacher was rewarded in interaction with the brighter, high-achieving students and suggested that the teacher's "control over personal rewards", especially while interacting with certain students depended on his ability to control the "timing, duration, and content" of the verbal contacts. Hence, a teacher tended to deal with low-achieving or troublesome students in private settings where all three factors were more likely to be under the teacher's control. Cooper claimed that teachers used criticism in public settings to discourage the overtures of certain students with whom the teacher preferred to deal privately. Little evidence of this behavior was apparent in this classroom. Although no measures exist, one would hardly suppose that this teacher would be considered as "dogmatic" or "authoritarian" by virtue of the Sinit percentages alone.

#### Tinit Interactions

The amount of involvement with the 26 students did, of course, differ. The average amount of all interaction for all students was 4.17% (due to the adjustments for absences when computing individual ratios) and individual total interaction averages ranged from 1.2% to 7.7%. Generally the 13 boys (average=4.61) received a greater amount of total verbal interaction contacts with the teacher than the 13 girls (average=3.73%).

The total amount of verbal contact with the different attitude groups resulted in the following percentage totals overall:

3 concern students	5.5
8 rejection students	4.85
first three attachment	4.73
16 attachment	4.1
5 indifference	3.4

More detailed information about the verbal interaction received by the four attitude-to-student groups is available in Table 24 in Chapter V, Page 149 ). The teacher-initiated contacts resulted in the following scores for the attitude groups:

concern	6.1
rejection	4.9
attachment	3.9
indifference	3.8

#### Tinit Types

In all there were seven different types of teacher-initiated interaction chosen for examination in this study. The percentage of occurrence of the seven Tinit types is presented in Table 35.

Table 35  
PERCENTAGES OF TYPES OF VERBAL INTERACTION

	Language Arts	Mathematics	Total Combined Subjects
Product Q	25.0%	30.1%	27.6%
Process Q	13.1%	8.6%	11.2%
Choice Q	0.1%	1.0%	0.5%
Self Reference	3.0%	6.0%	4.3%
Non-Academic Q	7.8%	6.1%	7.1%
Get Attention	1.0%	1.6%	1.3%
Comments	17.8%	20.3%	18.9%
Sinitis	31.2%	25.9%	28.9%



It is notable that more Product questions (30.1%) occurred during math instruction than in language arts (25.6%) instruction and that conversely more Process questions (13.1%) were posed during language arts instruction than during math (8.6%) instruction. This could be explained by the nature of the subject matter itself for the math lessons observed frequently involved straight factual recall.

Even more pronounced are the differences in Product and Process questions that occurred among the high, middle, and low expectancy groups for the two subject areas of language arts and math.

Table 36

## DIFFERENCES AMONG HIGH, MIDDLE, AND LOW EXPECTANCY TINIT RATIOS

	Language Arts			Mathematics		
	Product	Process	Achievement	Product	Process	Achievement
High	5.08	6.42	93.62%	3.53	4.53	97.37%
Middle	3.78	3.79	86.16%	4.12	3.68	94.00%
Low	3.50	1.52	71.50%	5.88	6.16	85.00%

The ratios received are presented in Table 36 along with the end of the year achievement results. (For more detailed information see Table 31 Chapter V, Page 164 ).

Brophy and Good (1974:107) noted that "expectancy group differences will be larger later in the year because (1) polarization has occurred and (2) after initial effort, the teacher has given up upon them." While this may seem somewhat true in language arts, the trend is quite the opposite during math instruction.

It is purely speculative to suggest that math might be an easier subject area in which to accomplish remedial work and this may encourage a teacher to pursue the low-achieving math student and spend more time and

attention on him. Table 37 reduces the information in Table 35 to three types of interaction for closer examination.

Table 37  
PERCENTAGES OF TOTAL INTERACTION

	Language Arts	Mathematics
Product Q	25.5%	30.1%
Process Q	13.1%	8.6%
Stimuli	31.2%	25.9%

Good and Grouws (1977) conducted a process-product study in fourth grade classrooms during math instruction in order to determine which teaching behaviors resulted in the highest math achievement. They concluded that the "integrative effect of specific math teaching acts in relation to the degree and sequence of other teaching acts accounted for higher levels of success" in some classrooms. If, for example, the teacher was rated high in clarity, and asked lots of product questions, and "used process questions or gave developmental feedback when student responses indicated some error" (p.52), and allowed a high percentage of student-initiated interactions, then higher levels of math achievement could be effected in a whole class grouping mode. Good and Grouws advocated posing more product (not process) questions in math instruction. They found that classrooms using math ability groupings fell into middle math achievement levels. Less effective math teachers in their study asked more process questions, gave evaluative feedback (not developmental process feedback), had a higher percentage of teacher-initiated verbal contacts, a "heavy" climate in the classroom, and more managerial problems (p.53). The teacher in this study did not group students for math instruction, used more product questions overall, and tended to give

developmental process feedback (in the form of Sustaining and Process Terminal Feedback, both categories on the DIOS) to students experiencing difficulty and encouraged student-initiated participation (about 25.9% of all math interaction).

Differences noted in the expectancy level ratios for Process and Product questions in language arts and math may not be due solely to expectation effects in operation but rather to differential instructional tactics dependent on subject matter being taught, and not upon students being taught.

Effects of Grouping on Product and Process Questions

Another possible explanation for the Product and Process question differences in language arts and math is the fact that groups ("good" and "poor" reading groups) were in operation during portions of total language arts instruction. Perhaps a different "mental set" is an automatic side-effect of segregating a class into different ability groupings and this may have acted to influence the teacher's differential treatment of these students while they were taught in actual reading group situations as well as for language arts instruction generally. Table 38 (taken from Table 28, Chapter V, page 158) shows the relative proportion of Product and Process questions received by the "good" and "poor" reading group members.

Table 38

LANGUAGE ARTS INTERACTION RATIOS AND ACHIEVEMENT FOR "GOOD" AND "POOR" READING GROUPS

	Product Q	Process Q	Total Tinitis	Achievement
"good" group	4.20	* 5.07	4.07	90.3%
"poor" group	3.96	2.20	4.20	75.2%

Good and Brophy (1974:118) stated that in the "early grades the important differences are usually in the quality of the interactions since grouping for small group instruction tends to equalize the quantity of interactions that different students in the class have with the teacher."

The following excerpts have been taken from the interview transcripts to show that perhaps a different mental set toward the two reading groups existed. Certainly a recognition of ability differences was expressed. A non-intentional (but not undesirable) side-effect of the study itself resulted in the teacher, who was prone to self-monitoring, starting to re-examine his interactions with the "poor" reading group while the study was in progress. The researcher did not discuss the noted differential treatment with the teacher but questions asked apparently alerted him to assess his questioning patterns used with this group.

He spoke of the questions interspersed during the oral reading of the novel...

"Usually I start just by getting the details, the factual details of where we are in the story so it will be a little review, that sort of thing and then after I will get to the other types of questions - asking them what they think of the various individuals."

"This is a terrific opportunity to ask the sequence of questions that we're supposed to ask, you know, the higher order questions. You can sprinkle them...I can ask a lot of just straight lower level questions of facts and so on and build up to the others..."

Speaking of the lesson in progress with the "poor" reading group...

So there are more factual questions?

"These are just straight fact, just a straight rehash of the story, the key points in the story...and I don't get beyond them."

Speaking of a lesson in progress with the "good" reading group...

"These people do well answering those kinds of questions, the opinion type questions, even though, as I've said before, they're a more difficult question. But these are the kids in the class who in reading sessions will venture a guess as to what's going to happen. They're the ones who respond pretty effectively to the higher level questions as a general rule."

The front group?

"The front group very frequently if you ask the 'what if?' questions, the 'what do you think of?' questions, I'm not nearly as likely to get a response that is...well it depends on the situation, but I'm speaking generally. I won't get as good a response from that front group as I do from the back group. They aren't as imaginative generally and they don't comprehend what they read as well either, you know, that aspect." (April 17th)

During the reading of the novel, Nicholas, one of the "poor" reading group members was asked a higher order question...

"The answer was perfect. I asked the question because I thought he was too wiggly. I thought he was half off task and I wanted to bring him back but he was listening obviously and it wasn't an easy question."

Yes it was one of those 'why do you think' questions...

"Yes, and well he had to relate it back to an earlier part of the

story that was quite a bit earlier and make the connection

...yeah so it was exactly the correct answer."

But he's in the front group and often you say you don't ask those sorts of questions...

"That's right and maybe not often enough. That's maybe something that... what happens is that you ask those questions and get nowhere. So you quit asking them and, of course, that's unfair. And usually, in thinking about it now, I can think of occasions when I've asked a number of questions, comprehension questions, that take it a little beyond..."

Well I noticed this morning that in the front group you were asking those higher level questions...

"You see I've been thinking about that and I've thought I have no right to cut them off simply because I'm dissatisfied with the answers on a given day or a given month, if you will. What I have to start doing is restructuring my questions, make them simpler higher level questions, something like that..."

I remember one day we were talking and you said you don't usually ask them with that group.

"That's true, and in thinking it through more carefully since, however, I say to myself 'Well why would I not ask those sorts of questions?'"

But you must have had some basis for thinking that you don't get anywhere with that sort of question.

"Well, I didn't get anywhere with it but in rethinking it maybe my expectations were too great. Maybe I shouldn't always expect to get

good answers. Secondly maybe I'd better look at rephrasing questions in such a way that they're more easily understood."

If you don't get good answers still will you abandon them?

"No. Well that's what I'm saying...You know no matter what level of reading a person is at there have to be appropriate level questions at that level and if I'm not asking them then I'm cheating those kids a little bit in getting them to think through those thought processes..."

"Let's put it this way. My primary concern was of a more basic nature; 'Do they have the basic details, facts of the story' and you need that really before, as a basis for the more complicated higher level questions. But what happened is that I spend too much time making sure that they had the basic factual information but didn't carry it beyond that. That's my responsibility and in thinking it through more recently that these people are certainly capable of answering an appropriately asked question, and constraints of time sometimes come in and you say 'I'll ask questions to see if they have the basics and then I've got to get back to this other group and with this other group I assume they've got the basics and we start with the higher level questions."

So you don't always go down to the level of fact gathering with the back group?

"Sure, I'll frequently assume, based on experience..."

You have evidence?

"yeah"

Just in the same way that you have evidence with the front group that they don't?

"That's right but bound to be wrong if I do that. Bound to be wrong in both instances... I think that the sequencing of questions is important and it's funny because I do that in Watership Down. It never occurs to me not to ask the basic structuring type questions that give us the basis for the higher level questions. It never occurs to me not to ask them there but then I get them into these individual groups and I seem to be on the run and this sort of thing. That might be the reason, it's not an adequate ..."

Do you feel differently about the front group? Is that why they're in the front group?

"How I feel about their ability in reading...that's right and what I'm saying now doesn't change the fact that in most areas they are not as capable as... "

There's a difference?

"Certainly there is but that doesn't mean that I oughtn't to ask them questions that cause them to think; not on a different level from the first level of question."

#### Tinit Comments

Comments were teacher-initiated statements to pupils. Frequently about work-related matters, they could include either positive or negative evaluation or perhaps a behavioral reminder. Usually at least one additional category was used in conjunction with the comment to classify its import.

Evaluative Tinitis. Criticism was occasionally expressed. It occurred a total of 55 times in conjunction with the possible



1931 Tinit interactions. The criticism given was not ability related usually but was directed at the student's behavior. However, the resultant percentages were inflated because of the relatively infrequent occurrence of criticism overall. Marilyn, for example, received three instances of criticism out of the 34 delivered during language arts and her resultant criticism ratio was 8.8% (of all criticism delivered to students in language arts). Instances of criticism occurred in conjunction with only 2.8% of all Tinit interaction overall and could not, therefore, be considered as a predominant verbal teaching behavior.

Conversely, there were 227 instances of praise accompanying 11.8% of the 1931 Tinit. Boys (4.56) received higher ratios of praise-containing-verbal contacts than girls (3.90).

Differences were noted for expectancy levels for in language arts more praise was delivered to high expectancy group members but in math more praise was accorded to low expectancy group members with whom he exchanged more total instructional interactional Tinit in any case. Keeping in mind that criticism was used much less frequently and the ratios are not as reliable as those for praise, Table 39 presents the praise and criticism ratios received by the high, middle, and low language arts and math expectancy groups.

Table 39  
PRAISE AND CRITICISM RECEIVED BY EXPECTANCY GROUPS

	Language Arts		Mathematics	
	Praise	Criticism	Praise	Criticism
HIGH	4.48	3.76	2.86	4.45
MIDDLE	4.01	2.70	4.42	4.91
LOW	4.13	7.35	6.04	2.24

From the literature it appears that praise is infrequently used in most classrooms. Silberman (1969:406) found that positive evaluation was the least frequently displayed teacher behavior overall. Haigh (1975:108) claimed that out of his eight teachers only one made any use of praise. Cornbleth, Davis, and Button (1974:57) commented on the infrequent use of both criticism and praise. Bennett (1978:143) claimed there was evidence to suggest that criticism (of academic performance) can be as effective as praise with certain types of pupils. Good and Grouws (1977:52) noted that the effective math teachers in their study praised less than the less effective math teachers. Cooper and Burger (1978:25) concluded that in lab simulations the low ability students received more praise and less use of criticism but in naturalistic classrooms on the other hand, low ability students received the opposite treatment.

Brophy et al (1976:260) ascertained that some praise merely reflects the teacher's attitude to the student and the desire for personalized contact with students who respond favorably. In Table 40 the Praise and Criticism ratios for the attitude groups are presented.

TABLE 40  
PRAISE AND CRITICISM RECEIVED BY ATTITUDE GROUPS

	Tinit Praise	Tinit Criticism
indifference	3.60	5.66
attachment	3.93	3.35
first 3 choices	4.96	5.83
rejection	5.70	8.75
concern	5.90	3.20

Silberman (1969) had concluded that teachers tended to compensate for

negative feelings held toward rejection students by praising them at every appropriate opportunity. He also felt that teachers minimized praise directed at attachment students in the effort to avoid displaying favoritism toward these students.

In summary it would be fair to say that praise was a relatively predominant teacher behavior exhibited consistently by this teacher. He had stated that he liked to praise and support the students at every opportunity deserving this teacher reaction. Praise often accompanied Sustaining behavior exhibited by this teacher.

#### Summary of Verbal Behavior

During the 25.35 hours of language arts and math instruction in which the dyadic verbal interactions were recorded the following teacher verbal behaviors were noted: A high percentage of verbal interaction was characterized by Sinit contacts originating from the students themselves. Over one-quarter of all interaction was student-initiated. The fact that the teacher permitted and encouraged that degree of student participation corroborates the high inference data about teacher "warmth", "empathy", and "acceptance of student ideas". The most frequently used Tinit behavior overall was the Product question, followed by Comments to students. Process questions accounted for about 11% of all interactions with a higher percentage occurring in language arts. Other question types were used less frequently.

In conjunction with the teacher initiated contacts, praise was used about 11% of the time which appears to be a higher than average use of praise and this information substantiates his expressed intention to praise

and support the students when it was realistically possible to do so and also supports the high scores assigned to related high inference measures.

The teacher was aware of the importance of questioning skills as expressed during interviews and appeared to pose academically oriented questions to the students for most of the verbal interaction recorded.

#### Summary

The first section of this chapter presented a brief description of this teacher's exhibited teaching strategies as recorded on high inference measures representing ten hours of instructional time in language arts and math. He performed well on all variables observed and was rated as one of the higher scoring teachers out of the 60 in the total sample of the Project Quest study. This information was used as an objective data source about this teacher's instructional behavior during language arts and math lessons.

The second section of the chapter presented the predominant verbal behaviors exhibited by this teacher as recorded on the DIOS instrument during about 25 hours of instructional time.

## CHAPTER IX

### SUMMARY, CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

#### Summary of the Study

##### Purpose

This study viewed the teacher as an information processor who might act on the basis of causal perceptions of and attitudes held toward students in his classroom. This study investigated the interaction of one teacher and his 26 students using a case study methodology and eclectic data collecting techniques.

Various forms of teacher-provided information about students were compared to the substance of his interactive thoughts about students during actual teaching situations, his thoughts expressed about them in general interviews, and his expressed affective feelings toward his students. This information about students was examined in relation to overt teaching behavior exhibited during instruction, in relation to the dyadic verbal interaction exchanged with these students, and to the level of achievement of these students in a bid to seek some understanding of the factors affecting ongoing instructional strategies used by this teacher. The study examined the extent to which traces of the expectancy effect could be found in the behavior of this teacher. A related purpose was to examine the effectiveness of stimulated recall as one of the introspective data collecting devices used in this study.

##### Methodology

The teacher completed class rankings on six expectancy and personality measures and in addition rated each student individually on 13

attributes. Both these sets of information were converted to quantitative scores and combined for analysis purposes.

Self reports of interactive thoughts about students during eight videotaped lessons were obtained using stimulated recall procedures. These data were coded using a category system designed to facilitate the quantification of these interactive thoughts. Additional introspective information was obtained during five general audiotaped interviews and during many other shorter taped conversations with the teacher. All interview data were subjected to a broad macro-analysis which identified the overarching attitudes and priorities expressed which may have been representative of the teacher's underlying beliefs.

During 10 hours of language arts and math instruction, overt process data on 31 observed teaching strategies exhibited while working with the students were obtained using high inferences measures.

Low inference measures for recording dyadic verbal interaction during 25 hours of language arts and math instruction were used to identify the verbal exchanges occurring between individual students and the teacher. These interactions were analyzed at the observable level to determine the quantity and quality of verbal contacts with the teacher.

Additional data about students were gathered from school records.

Individual student profiles were developed for all 26 students by compiling all teacher-provided information and other data sources about students into a case study report on each student.

A sub-sample of students was selected for more intensive investigation of their use of academic learning time. Although not a major focus in the present report, summary percentages of these time on task data are included

in the student profiles where available.

### Analysis

The teacher-expressed thoughts were analyzed for substance by conducting both a micro-analysis of interactive thoughts from the stimulated recall data and a macro-analysis of all thoughts using all interview data.

Ratio scores were generated for individual pupils for selected categories of verbal behavior exchanged with the teacher. These were used to indicate the relative involvement of the student in dyadic verbal exchanges with the teacher and the amount and type of these verbal contacts and they were combined with other students' data to compute average ratios of verbal interaction for the different grouping patterns under study.

Twenty-six individual profiles were constructed which stand on their own merits as units of analysis but data from these individual mini-case studies were combined into various grouping patterns for comparative purposes.

The attempt was made to triangulate the data sources on teacher exhibited behavior with teacher-expressed thoughts and teacher verbal interaction behavior in the bid to understand and describe how this teacher coped with environmental and student-imposed demands during teaching.

### Conclusions

This case study was limited to one teacher's perceptions and behaviors as they occurred in one classroom. Generalization beyond the limits of the study itself is therefore precluded. Certain tentative results can be concluded concerning the extent of the operation of

expectancy effects in this particular classroom, this teacher's predominant teaching behaviors, and the nature of his expressed priorities and attitudes in working with his students.

Although precautions were taken, the obtrusive effects of the data collection may have disturbed the naturalistic environment to a certain degree although over the three month time period, the subjects appeared to eventually ignore the presence of the researcher and the video recording equipment for all practical purposes. Certain adjustments and changes in the teacher's approach during instruction were noted during the three month period, some of which were directly attributable to involvement in questioning and interviews with the researcher.

Conclusions reached in the study are presented as answers to the five research questions that guided the direction of the study and the data collection procedures.

- 1.0 What are the common characteristics of students assigned by the teacher to each of four attitude-to-student groups (attachment, concern, indifference, and rejection)?

The 16 attachment students in the present study were rated as highly attractive, intelligent, mature, cooperative and enthusiastic students for whom the teacher held high academic achievement expectancy. They were perceived to exert a consistently good effort in their academic work and they achieved exceedingly good results on the end of the year exams. A general positive halo effect, which seemed to be well deserved, was associated with a subgroup of the three initial choices from the attachment group.

The five indifference students were seen to be less mature,



less cooperative, as well as less intelligent and attractive. They were generally younger than other classmates and received lower teacher-assigned expectancy scores and effort attributions for academic work. They were not as well liked by the teacher and they received low scores for being noticeable and for maintaining eye contact with the teacher.

The two (conditional) rejection girls were attractive and noticeable. They were older than most classmates but were viewed by the teacher as immature and uncooperative and restless. They received low teacher-assigned scores for effort expended and were the recipients of low teacher expectancies for academic achievement. He was concerned about their academic progress. They were not well liked by the teacher and were seen to be basically unhappy children.

The three concern students exhibited poor initiative, motivation, and work habits and were assigned very low achievement expectation scores by the teacher who was most concerned about their academic progress. Two of the three students had additional emotional problems requiring considerable understanding, attention, and differential treatment from the teacher.

- 1.1 What were the perceived personality characteristics which might serve to explain the teacher-expressed attitudes and affective feelings toward these groups of students?

The effort attribution the teacher held for a student and his perceived general work habits seemed to color his feelings toward and expectancy held to a certain extent. The amount of cooperation and compliance afforded the teacher during instruction and the general class-

room behavior of the student were also appreciated student attributes which seemed to affect the degree of teacher affect expressed toward individual students.

- 2.1 What evidence is there, if any, of product expectancy effects? What is the relationship of teacher-held expectancy to end of the year achievement results?

A sex difference was noted in the correlations of teacher-held expectancy and end of the year achievement results. Boys received higher teacher-assigned expectancy ratings for both subject areas of math and language arts and did achieve slightly higher scores on both subject area exams than did the girls in the study.

Expectations held for the four attitude-to-student groups were positively related to end of the year achievement marks. In language arts the highest expectancies were held for attachment students who performed well, particularly the first three choice attachment students. An almost equal expectancy rating was assigned for language arts achievement to both the indifference and conditional rejection students and indeed their average end of the year language arts achievement marks were nearly identical. The lowest expectancy for language arts achievement was held for members of the concern group who did least well on the end of the year language arts exams.

The same general pattern of correlations held for math expectancy and math achievement results with the attachment students, for whom the teacher held the highest achievement expectancy, performing best on the end of the year math exam and concern students, for whom he held the lowest math expectancy, performing least well of all attitude groups. In this subject area, indifference students' expectancy scores were higher

than those assigned to rejection students and their math achievement reflected this teacher-assigned difference in expectancy.

It can be argued that prior student achievement accounts for the formation of teacher expectancy assigned just as easily as the theory that higher teacher expectancy held results in higher achievement. Causal relationships can not be said to exist in this study for the "preponderance of causation" (West and Anderson, 1976;613) was not determined. Certainly, positive correlations existed between the achievement expectancy held for the different attitude-to-student groups and their end of the year exam results and so it could be concluded that product expectancy effects appeared to exist with respect to the attitude to student groups in the study.

High, middle, and low expectancy levels for general achievement, specific language arts achievement, and specific math achievement were examined in relation to the end of the year achievement. It was found that higher positive correlations existed between the specific subject area expectations and achievement in the respective subject areas although the same positive correlative trend was apparent in the more global expectancy measure when compared with general achievement results.

The two reading groups showed definitive evidence of the same positive correlations for teacher-held expectancy and achievement in language arts.

In all, a fairly clear cut positive relationship existed between teacher-assigned expectancy scores (obtained in March) and the end of the year achievement test results. Product expectancy effects appeared to be in operation in the classroom.

- 2.2 What evidence is there, if any, of process expectancy effects? What is the relationship of teacher-expressed expectations to the amount and kind of verbal interaction exchanged?

The process expectancy effect measures used in this study were the amount and type of different verbal interactions exchanged between a student and the teacher.

Sex differences favored the boys who received both more quantity and better quality of verbal contacts from the teacher than the girls.

The four attitude ~~to~~ student groups' averages of total dyadic verbal interactions show differences favoring the concern students, as in previous research. Rejection students received the next highest amount of total verbal interactions but this could be attributable to the fact that one of these students was the new student settling in and more verbal contact was necessitated. The full group of attachment students received an average amount of verbal interaction but the first three choice attachment students from the larger group received a higher than average amount of verbal contacts. Indifference students received considerably less verbal contact from the teacher.

Generally speaking the total amount of verbal interaction received by the high, middle, and low expectancy groups favored the low group. This trend was especially so in math interactions but the situation was reversed during language arts instruction favoring the high expectancy group. It is notable that for both subject areas the middle expectancy groups received the least overall verbal attention.

The quality of interaction provided followed the same pattern for subject areas. The highs received more quality dyadic verbal interactions in language arts and the lows received more qualitative interaction in

math. These ratios were computed for members assigned to specific subject area expectancy levels which differed in membership slightly. The ratios of verbal contacts received by the overall general achievement expectancy levels for all subject areas showed that more Product questions overall accrued to low expectancy students and more overall Process questions were addressed to high expectancy students.

It could be tentatively concluded that there was evidence of process expectancy effects in operation in this classroom.

- 3.0 Using all available information, to what extent is it possible to construct a comprehensive student profile which would describe the student's behavior, his achievement, his membership in various grouping patterns, and the relationship he had with this teacher?

The attempt was made to portray the 26 students in the classroom in quick character sketch style. Teacher-assigned numerical information was interwoven with teacher-provided statements about the student to reveal the most salient aspects of this particular student in the teacher's view. In addition, a somewhat interpretative summary followed each case study presentation. The researcher was satisfied that this was the most faithful and complete picture of each student that the teacher provided.

- 4.0 What information is obtainable from the interviews held with the teacher?

- 4.1 Which kinds of thoughts about students in particular were reported during stimulated recall interviews?

It was possible to identify and quantify the type and quality of teacher interactive thoughts by subjecting the stimulated recall transcript data to a micro-analysis. Nine major categories, most of which were

subdivided, comprised Connors' (1978) micro-analysis category system used in the present study. Most expressed interactive thoughts were classified as teacher Perceptions of student academic performance during instruction, and concern for the Instructional Moves he was making, particularly those concerned with Classroom Control, and as background Information about Students which the teacher brought to the lesson situation. A substantial proportion of interactive thoughts were Self-Monitoring in nature as the teacher expressed awareness of the effectiveness of his teaching behavior during ongoing instruction. He expressed personal Feelings about different aspects of the lesson in progress on many occasions as well.

- 4.3 To what extent do teacher-reported thoughts clarify/corroborate numerical scores assigned on the different student ratings?

The researcher found that remarks about students tended to confirm and explain the scores assigned on the various student attribute ratings and teacher expectancy dimensions. Where discrepancies arose, the teacher was asked to clarify or confirm the numerical score assigned.

- 4.2 What teacher attitudes and priorities are revealed in all interview data?

A macro-analysis of all interview data was conducted in order to identify the most frequently expressed priorities and attitudes which appeared to guide this teacher in his approach to students. It appeared to the researcher that on the basis of the thoughts expressed during interviews one could conclude that the following summarized set of values

were representative of those guiding his dealings with the students in his class:

the development and maintenance of self concept in the student.

the development of a realistic view for the individual student (and for his parents) of his strengths and weaknesses as a student.

the provision of support and encouragement to the student.

the importance of regarding each student as an individual who requires differential treatment and consideration while at the same time ensuring fairness and equality of treatment for all students in the class.

5.0 How could the teaching behavior of the teacher subject be described?

5.1 What are the predominant teaching behaviors of this teacher?

This teacher was one of 60 teachers from selected grade 3 and grade 6 classrooms in the system at large who participated in a process-product study entitled Project Quest. Observable teaching behaviors were recorded and rated. This teacher was well above the sample average on most of the 31 variables measured. On several of the variables, he received top scores consistently during the 10 hours of classroom observations conducted during language arts and math instruction. Based on these measures of this teacher's behavior the teacher was found to be highly proficient in classroom management skills. In particular, he was rated as highly supportive of students and accepting of student-initiated interaction, as using an appropriate mixture of high and low order questions, and as being skilled in handling disruptive situations in a low-key manner. He was given high ratings for monitoring students' work constantly and for possessing high degrees of the more global variables derived from

Kounin (1970) such as warmth, empathy, clarity, overlappingness, withitness, persuasiveness, momentum, and smoothness.

5.2. What are the predominant verbal interaction behaviors of this teacher?

From the verbal interaction data collected by means of the dyadic interaction observation system (DIOS) instrument, it was apparent that this teacher accepted a high percentage of student-initiated interactions during actual teaching situations. Most of his teacher-initiated contacts were classified as either Product or Process academic question types. Teacher Comments to students accounted for a high percentage of total teaching interactions. The teacher appeared to use praise more frequently than teachers described in the literature and from the interview data collected it was clear that this was a purposive teaching act to encourage and support student academic progress.

## IMPLICATIONS AND RECOMMENDATIONS

### Approaches to Research Methodology

Adopting an integrative approach to data collection in educational research is a relatively new occurrence. More exacting studies in the past examined selected variables and the contributions they made to student achievement gains, but in themselves have not fully explained the complexity operant in a classroom. Team approaches have been used with a degree of success but several observers in a classroom run the risk of disturbing the naturalistic environment they wish to examine.



Bennett (1978) proposed that studies should not concentrate only on the variables which have been shown to exert influences on instruction but also should look for the interaction among these variables which may reveal promising directions for further research. Mixing qualitative and quantitative data collection methods is not without problems but the results of this study indicate its potential for success in the search for meaning in a classroom. The triangulation of different data sources poses highly complex and time consuming analysis problems. Such studies tend to raise more questions than they immediately answer but the development of new questions to guide future research is not an unwelcome event. The conundrums inherent in adopting novel approaches to classroom-based research are thought-provoking, and inventive researchers will rise to meet the challenge posed. In such a pursuit open-ended studies are required which depart from the more traditional forms of educational research.

#### Focus on the Student

Increasingly classroom research has begun to focus on the individual student as the unit of analysis. Studies conducted on student effort attribution and motivation show these to be "alterable variables" (Bloom, 1980) which have a major effect on student achievement. Profitable use of academic learning time varies with the student and acts as a mediating variable affecting student achievement. This too is an alterable variable which the teacher can control by working more closely to keep the student attending to task and by breaking down the task itself into more manageable units. More studies of students are needed in order to provide a greater understanding of how self-concept

and self attribution operate with children and to examine ways to alter these in more favorable directions.

One way of investigating student-perceived needs and attributions is by using introspective techniques such as stimulated recall to gain an understanding of which sorts of thoughts are salient for student development and maintenance of self concept. King found stimulated recall techniques suitable at the grade six level. Research is needed to determine whether younger students are able to understand and articulate the impressions gained from working with a teacher in a classroom situation.

#### Thought Processes

Investigating the mental activity of teachers is still a relatively new area of interest. Research on teacher thinking is predicated on the assumption that what teachers do is governed by what they think. Strictly observational studies of teacher behavior, taken at face value, are subject to misinterpretation without teacher-provided causal explanation for the actions taken. By conducting interviews with the teacher, and stimulated recall interviews seem particularly well suited to this purpose, valuable insights are gained about ways in which a particular teacher thinks, makes decision, solves problems and responds to pupils while teaching. By conducting more studies of this nature it is hoped that the commonalities in teacher thinking, thought processes, and decision making may begin to emerge.

#### Classroom Interaction

Classroom-based studies investigating classroom interaction have shown that students exert considerable influence on teacher behavior.

The extent of mutual influence is dependent on many factors not well understood as yet. Teacher characteristics account for the susceptibility of becoming unduly influenced by students but the particular characteristics of the students themselves are not without considerable influence. The Student Attribute Study, conducted by Brophy et al., 1976, revealed that certain student attributes seemed to affect many teachers in predictable ways. This study offered additional evidence. More studies of student characteristics and the ways in which teachers react to them are needed, however, to extend these findings. By knowing of these trends teachers could guard against exhibiting inappropriate behavior toward students.

Verbal Interaction. Many studies use verbal interaction as the mediating process variable. The examination of the verbal interaction on its own merits reveals the types of questions used by the teacher and can provide the teacher with data on self performance about questioning techniques and feedback procedures. This is one of the alterable variables which can be used to effect better instruction. A related purpose of recording verbal interaction is to identify which class members receive the more qualitative types of verbal interaction and whether the teacher affords all children fairly equal opportunities for verbal contacts with the teacher. However, more subtle communications such as tone of voice, wait time afforded the answering student, and non-verbal gestures ( as pointed out by Muttart, 1977:131) are not easily captured on existing low inference measures. Data collection instruments which will capture these subtleties need to be developed to gain the information communicated by these means as well as by the more obvious verbal content.

### Expectancy Research

Many studies of teacher expectancy use verbal interaction patterns as evidence of differential treatment provided to students by virtue of the quantity and quality of interaction provided. More research is now needed to find the reasons for the formation and maintenance of teacher expectancy for students. The susceptibility of exhibiting expectancy effects, which does not appear to be universal with all teachers, depends in part on the degree of teacher awareness of the phenomenon itself. Teacher education programs should prepare prospective teachers by acquainting them with the processes of expectancy, thereby sensitizing them to the negative effects that may occur.

Teacher Attitudes to Students. Attitudes to students function as affective expectancy. Conclusive results from previous research have shown that the teacher's affective reaction to students affects treatment of students. In striving to prepare proactive teachers, teacher education programs should present and discuss the findings to date concerning the influence of teacher-held attitudes to students. More research is needed to determine how teacher affect influences teacher behavior with particular students.

### Effects of Participating in Introspective Research

Self-confrontation is a threatening and stressful experience unless the teacher is self confident. The technique should be used with a degree of caution. Teachers involved in this form of research find it time consuming, but not completely without benefit for it forces them to consider ways of thinking about what they are doing. If changes are warranted they are made after reflection about alternative ways of doing things. Teacher educators might use the technique particularly during formative

evaluations of student teachers, and administrators concerned with the supervision of teachers in the system should consider using it in the context of a non-evaluative, clinical supervision type of setting where the teacher is provided with information about his behavior. Care in establishing a suitable rapport cannot be overstated before embarking on stimulated recall experiences with teachers in order for it to be a useful experience for either party involved in the research. The extent to which the teacher should be acquainted with the purpose of the introspective research is open to question. Cooperative subjects attempt to provide what is requested, while at the same time for the researcher a focus is necessary in order to limit the range of thoughts considered to be a manageable number for discussion or analysis.

#### Reflections on Using an Eclectic Approach

Much more research is required in many of the areas isolated for examination in the present study. The treatment of each area was purposely kept minimal in the attempt to determine how many disparate areas could be considered simultaneously. More areas than have been reported here were examined. One becomes quickly humbled by the complexity of life in the classroom. It is apparent that many more researchers must engage in similar studies and that many more hypothesis-generating studies are required before developing the underlying theories which might explain the interacting variables which account for learning gains and effective teaching. It whets the appetite for more of the same. While a certain amount of preplanning is necessary, keeping the approach and methodology open allows for serendipitous findings. It keeps the researcher sensitive to the subjects under study and to the varied methodologies needed for research in education.

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APPENDIX

Copies of the various instruments used in the study are contained in this appendix. Since these instruments originated in other studies and were borrowed and used, the reader is referred to the sources cited for particulars concerning the use and application of each instrument.

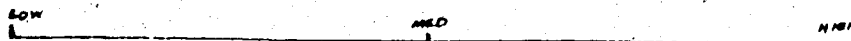
Conners' (1978) Micro Content Analysis System appears only as a summarized list of categories (Page 315) in the present study.

Guidelines for conducting stimulated recall interviews may be found in King's (1979) Appendix B and in Tuckwell's (1980) Appendix E.

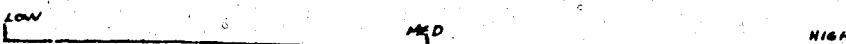


## THE STUDENT ATTRIBUTE SCALE

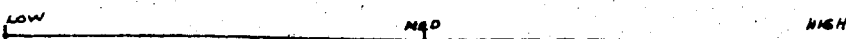
1. Restless, highly active versus calm, good self control.



2. Careless, hasty worker versus careful, deliberate worker.



3. Unhappy versus happy.



4. Probable lowest achiever versus probable highest achiever.



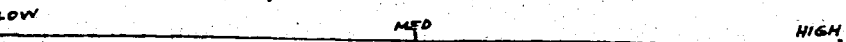
5. Immature versus mature.



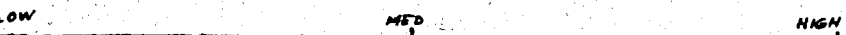
6. Uncooperative, defiant versus cooperative, compliant.



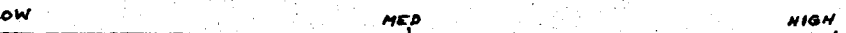
7. Non-creative or unimaginative versus creative and imaginative.



8. Unattractive versus attractive.



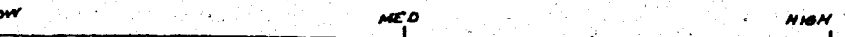
9. Gives up easily, needs to be prodded versus tries hard, persistent worker.



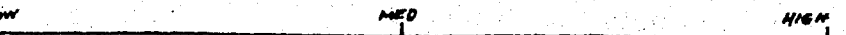
10. Would like to have removed from class versus would like to keep for another year for the sheer joy of it.



11. Doesn't require special attention versus concerns me a great deal. I would like to be able to devote much more attention.



12. Not noticeable versus stands out, very noticeable.



13. Averts eyes versus looks you in the eye.



Student's name \_\_\_\_\_

## ATTITUDE-TO-STUDENT QUESTIONNAIRE.

Directions given by Silberman, 1969, and by Willis and Brophy, 1974 were to nominate one child/ three children (respectively) to each of the four attitude to student groups. The researcher in the present study used the same definitions but asked the teacher to place all 26 students in his class into one of the four attitude to student groups. The descriptions below were the ones provided to the teacher in order to elicit the students' names. The teacher filled out the form himself in the presence of the researcher.

## ATTACHMENT

If you could keep one student for another year for the sheer joy of it, whom would you pick?

## INDIFFERENCE

If a parent were to drop in unannounced for a conference, whose child would you be least prepared to talk about?

## CONCERN

If you could devote all your attention to a child who concerned you a great deal, whom would you pick?

## REJECTION

If your class was to be reduced by one child, whom would you be relieved to have removed?

INSTRUCTIONS FOR FILLING OUT THE 7-POINT RANKING SCALE

from

Brophy, Evertson, Anderson, Baum, and Crawford, 1976, The Student Attribute Study, Page 469.

HIGH

MIDDLE

LOW

"For each scale, select your three highest and three lowest students and put their names in the highest and lowest sections of the scale. Then select your next four highest and lowest students and put their names in the next highest and lowest sections of the scale. Do the same thing for the next highest and lowest section. You may leave some blanks in this section if you feel that you do not have enough students whose names belong here. Put all remaining students' names in the middle section. The students in each section of the scale will be considered to have the same ranking, so do not spend too much time making fine discriminations between students."

For some analysis purposes the researcher in the present study combined scores of 1 and 2 into HIGH, scores of 3, 4, and 5 into MIDDLE, and scores of 6 and 7 into LOW rankings on the scales.

Six class ranking scales were completed in all, by the teacher, in the present study:

- General Intellectual Ability
- Probable Achievement in Language Arts
- Probable Achievement in Mathematics
- Motivation to Do School work
- Maturity
- Cooperation/Compliance

## PROJECT QUEST

A joint project of the Centre for Research in Teaching and the  
Edmonton Public School Board, Winter 1978-1979.

## HIGH INFERENCE CODING SHEET

1. Teacher used a system of rules dealing with personal and procedural matters.				
1	2	3	4	5
LOW		MED		HIGH
				NOT OBSERVED

2. Teacher prevented misbehaviors from continuing.

3. Teacher directed disciplinary action accurately.

4. Teacher moved around the room a lot (monitoring seatwork).

5. Teacher handled disruptive situations in a low-key manner (non-verbal, proximity, eye contact).

6. Teacher insured assignments were interesting and worthwhile while the children worked independently.

7. Teacher used a system of rules which allowed pupils to carry out learning tasks with a minimum of direction.

8. Teacher optimized academic learning time. Pupils were actively involved and productively engaged in learning tasks.

9. Teacher used a standard signal to get students' attention.

10. Teacher did not begin speaking to the group until all students were paying attention.

11. Teacher stopped speaking/instructing until all students were paying attention.

12. Teacher used a variety of instructional techniques adapting instruction to meet learning needs.

13. Teacher encouraged quantity and quality of work in Language Arts.

14. Teacher used a system of spot-checking assignments.

15. (Do not complete until last minute.)  
Teacher related math games and independent activities to the concepts being taught.

from Project Quest...continued

16. (Do not complete until last visit.)  
Teacher increased the amount of written work so that pupils did some writing every day.
  17. Teacher used techniques that provide for the gradual transition from concrete to more abstract activities.
  18. Teacher used an appropriate mixture of high and low order questions.
  19. Teacher was aware of what was going on in the classroom.
  20. Teacher was able to attend to more than one issue at a time.
  21. Teacher facilitated the smooth flow of the lesson or a smooth transition from one activity to another.
  22. Teacher's behavior maintained the pace of the lesson.
  23. Teacher was clear in presentations to the class.
  24. Teacher was able to motivate children.
  25. Teacher provided evidence of "caring", "accepting", and "valuing" of the children.
  26. Teacher responded accurately to both obvious and less obvious meanings, feelings, and experiences of the children.
- NOTE: For the following items, please use the five point scale to indicate how frequently the behaviors occurred during the period observed.
27. Many different pupils were selected by the teacher to respond to questions.
  28. When pupil's answers were incorrect or only partially correct, the teacher used techniques such as rephrasing, giving clues, or asking a new question to help the pupil to give an improved response.
  29. The teacher used praise to reward outstanding work as well as to encourage pupils who were not always able to do outstanding work.
  30. The teacher used mild criticism on occasion to communicate expectations to more able pupils.
  31. When pupils initiated interaction, the teacher accepted and integrated the pupil question, comment, or other contribution.
-