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**PATTERNS OF PUPIL ATTENTION TO CLASSROOM DISCOURSE**

by

**Lorne Prupas**

**A. B., Brandeis University, 1973**

**THESIS SUBMITTED IN PARTIAL FULFILLMENT OF**

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## ABSTRACT

Patterns of pupil attention to classroom discourse have been related to the academic status of speakers. Specifically, it has been found that pupils listen to speakers in classrooms who, they believe, will assist them in obtaining academic success. However, previous studies have been framed in sociolinguistic terms and, as such, have neglected the importance of individual attention patterns. This study is framed in cognitive mediational terms and analyses pupils' listening to speakers in terms of a range of academic, social and personal characteristics.

Four teachers and their 100 grade six students participated in this study. Task structure was controlled by studying classrooms in which recitation teaching was a dominant mode of instruction. A series of questionnaires and tests were administered both to teachers and to students to assess each student's academic, social and personal status. Academic measures included Metropolitan Achievement Test scores, teacher ratings of reading ability, and academic status as rated by the teacher and peer group. Social measures included average frequency of participation, and social status as rated by the teacher and peer group. The personal variables were sex and perception of self-efficacy. On three separate occasions students viewed videotape segments of language arts lessons in which they participated and were asked to report the names of speakers and their speech contributions. Frequency of each

student's participation was determined by the teacher. Correlational analyses were used to assess the relationships among speaker and listener attributes and pupil attention to discourse.

Results indicate that students appear to be cognitively mediating classroom discourse but not necessarily in ways that will assist them in obtaining academic success. Patterns of pupil attention to discourse are classroom specific and are related to academic, social or personal attributes of speakers and listeners.

Results of the study are discussed in terms of the classroom specificity of pupil attention patterns and the organizational facets of classroom life that might govern listening patterns in a classroom.

**DEDICATION**

To my parents, Sheila Ditzkofsky and Mel Prupas.



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## I. Introduction

Many recent articles analyzing the relative impotence of research on teaching effects have discussed the inadequacy of conceptualizations of variables used to describe the teaching-learning process (see Winne & Marx, 1977). As well, Brophy (1982) states that most classroom observers have directed their attention to teachers rather than students. Thus little information is available concerning what students do in classrooms or how they actually view the events taking place in those settings. Winne & Marx (1977) state further that extant studies show only weak to moderate empirical relations between student achievement and teacher behaviours. They argue that to build a science of teaching three classes of variables, teacher's cognitive processing while teaching, students' cognitive processing while trying to learn from teaching, and bidirectional relationships among classroom events, require further attention. They particularly emphasize the fact that like the teacher, students are dynamic decision makers participating in instruction as they choose to attend, analyze, or process information impinging on them in the instructional environment. Furthermore, Winne and Marx (1977) state, "that without a better understanding of the unobserved, and heretofore, undescribed internal events in the teacher-learning environment, generating an accurate and efficient pattern of



research on teaching is too chancy." (p. 671)

Three groups of researchers have recently examined teaching-learning environments, each through a particular set of lenses. Winne (1983) contends that the cognitive mediational model bridges the gap between teacher and learner in previous educational research. The model proposes that students' cognitive processing, at any give instant, mediates instructional events and students' performance. Winne and Marx (1982) have employed the model in educational research. Rosenholtz & Wilson (1980) and Rosenholtz & Simpson (1983) have argued that internal events in the teaching-learning environment, that is, the experiences and meanings available to classroom actors, result from the organization of classroom life. Rosenholtz points to the influence of task differentiation, grouping practices, teacher evaluation practices and student autonomy on the internal events in classrooms. Finally, Doyle (1978) has emphasized that student response to the teaching-learning environment is affected by the demands and resources of a particular setting. In particular he describes tasks that are demands placed on all classroom actors and he postulates that student behaviour is directed by the nature of the tasks imposed.

These three research groups have each added to our understanding of the cognitive events in teaching-learning environments. What follows is an articulation of the basic concepts inherent in each perspective as well as examples

describing samples of research supporting the various perspectives.

### The Cognitive Mediational Model

Winne (1983) outlined a brief history of the cognitive mediational model. Early studies during the first six decades of this century typically characterized teaching quite globally. Classrooms were described as democratic or laissez faire, for example. Slowly these descriptions became more detailed as researchers recognized the need for more discrete analyses of the specific behaviours teachers used in classrooms. It became apparent that students' cognitive processing during lessons bridged or mediated the relations between how teachers were behaving and students' ultimate demonstrations of learning and motivation. In the 1950s and the early 1960s most teacher behaviours were characterized jointly in terms of behavioural features that allowed observers to distinguish one kind of teacher behaviour from another, and in terms of a student's hypothesized cognitive response to each kind of teacher behaviour. Students' cognitive processing played a major role in explanations of how teaching affected learning.

In the middle 1950s Guilford and Bloom (1956) provided early languages to describe students' cognitive processing. Guilford's system articulated three aspects of cognitive processing: the content being processed, the cognitive operation

being performed, and the cognitive product that resulted. In research on teaching it was assumed that a teacher behaviour, say an analysis question, would affect this processing in all students equivalently during teaching. The assumptions that students might cognitively process a single question differently, and that several behaviourally equivalent questions might be cognitively processed differently by a single student were, according to Winne (1982), flaws in this research.

Although research in the 1960s and 1970s relied theoretically on students' cognitions to mediate teacher behaviours and achievement, the nature of the mediation was obscure. A cognitive mediational model was then proposed to compensate for weaknesses in the earlier process-product model. The cognitive mediational model describes learning from teaching as a series of interactions between events in the instructional environment and a student's cognitive processing system (Doyle, 1978; Winne, 1982; Winne & Marx, 1977). The model contains four parts: instructional cues, indicators that information is forthcoming and that have a potential to influence each student's cognitive processing; cognitive processes, mental processes that students use to operate on information in a variety of ways; cognitive products, the product after information has been processed; and student performance, the student's behavioural response corresponding to the cognitive product. The model highlights reciprocity so that performances by a student, for example, become cues for the teacher and vice

versa. In short, the most recent version of the cognitive mediational model focuses on the interaction between teacher behaviours, students' cognitive processing and what students learn.

Winne and Marx (1982) have demonstrated how the model can be applied to educational research. They studied two grade seven classes, two grade five classes and one grade four class. They videotaped fifty 25-45 minute lessons varying content across math, science, language arts, and social studies. Videotapes were played back to teachers, and teachers were asked to stop them at points where they wanted students to think in particular ways. Research assistants encouraged teachers to stop the videotape playback by indicating spots where they felt teachers were cuing students to respond cognitively. After teachers had identified segments on the videotape where they expected students to respond cognitively, students viewed the tape. Generally three to four students viewed it at one time.

Students viewed preselected videotape segments where teachers had identified their use of instructional cues beginning a minute or more ahead of the incident to be analyzed and sometimes going a bit beyond. A structured interview schedule composed of six levels of questions was designed to probe students' understanding of their thought processes during instruction.

From these interviews the authors constructed a complicated system to represent the range of intentions that teachers have

for students' cognitive processing and to reflect students' views of the cognitive processes they perceived were intended by their teacher. The analyses highlight three findings substantiating students' active cognitive intervention in teaching-learning interactions. Firstly, the success of the teachers' instructional stimuli often was inversely related to the amount of information that students were to be cognitively processing. When teachers cued a global unit, such as a rule or complicated thinking strategy, there was considerable variability in students' perceptions of the instructional stimulus. On the other hand, when students were not overly taxed by the amount of the material or the cognitive processing that the teacher intended of them, they were more likely to perceive the instructional stimulus as the teacher intended.

Secondly, when students had a well-practised cognitive response to an instructional stimulus, they more easily perceived and claimed they could execute the teacher's intentions for their cognitive processing.

Thirdly, students appeared to be strategic in the cognitive processing they used as they attempted to learn from teaching. On those occasions where teachers did not describe clearly their intentions for students' cognitive processing, and even on some occasions where teachers said they had no such intentions, students nonetheless made cognitive responses to what they perceived to be instructional stimuli. Hence, Winne and Marx concluded that students will construct meaning for classroom

activities regardless of whether the teacher does.

These authors have begun to open up the black box that obscured the nature of mediation by questioning and examining students' thinking processes during classroom learning. Their last finding indicates that students are cognitively active in classrooms. However, cognitive mediation does not occur in a vacuum. Research of the kind done by Winne and Marx (1982) and that presented here must also take into account the contexts within which students' cognitive mediation occurs. As Winne and Marx (1977) stated, "although teacher educators have a vast arsenal of technical skills to teach, research evidence provides them with very little to say about strategies for organizing the use of these skills." (p. 671) An understanding of the context in which cognitive mediation occurs could add to the effectiveness of those strategies.

### The Organization of Classrooms

Rosenholtz and Wilson (1980) and Rosenholtz and Simpson (1983) have argued that the organization of classroom life orders the experiences and meanings available to classroom actors. They argue that particular divisions and stratifications among students are instantiated through rituals--repeated aspects of school life determine the form of the school experience and affect socialization.

Rosenholtz and Wilson (1980) have identified a cluster of classroom characteristics that they posit to produce variation in the content of socialization. The four characteristics they identified were task differentiation, grouping practices, teacher evaluation practices, and student autonomy. They examined how these characteristics relate to how students differentiate their peers in terms of academic ability. Rosenholtz and Rosenholtz (1981) concluded on the basis of analyses of the same data set reported by Rosenholtz and Wilson (1980) that availability of information to participants is crucial to students' interpretations. They have noted that instruction in a single-task, whole class setting where the teacher's evaluation of students is public and students are largely passive observers leads to similar conclusions about degree of academic ability of any one participant by most other participants. In contrast they noted that where tasks are decentralized and the picture of action more diffuse, as in a multi-task, multi-group setting, observations of participants' ability will vary and more-dissimilar attributions will result. They state that where the distribution of opportunities to construct identities is large, individuals may select among a variety of performance options as the bases of social comparison and self-evaluation.

An example of the effects of context on student perception is Rosenholtz' (1982) study. She examined the effects of task differentiation, student autonomy, teacher grouping, and

assessment practices on student perceptions of academic competence and the relation of such competence to perceived social power. Students in fifteen fifth- and sixth-grade self-contained classrooms from three schools in the San Francisco Bay Area participated. Classes were categorized as either unidimensional or multidimensional from teachers' responses to a questionnaire about their curricular materials and instructional practices. Classroom dimensionality was determined by an assessment of classroom task differentiation, student autonomy, the use of grouping and the extent of teacher comparison of one student's work with another's. Multidimensional classes were ones in which there was high task differentiation, high student autonomy, the use of grouping and low frequency of teacher comparison of one student's work with another's. To measure perceptions of individual ability, reading was selected as the vehicle for comparison. Students were asked to rank classmates by their ability to read. Social power was assessed by asking students to nominate classmates of the same gender who were "most able to get others to do things" and "least able to get others to do things."

Rosenholtz found that correlations between reading rank and attributed social power were significantly higher in unidimensional settings than in multidimensional ones when male and female data were pooled. Similarly she found higher dispersion of social power in unidimensional classes than in multidimensional ones when male and female data were pooled.



Rosenholtz concludes that attributed social power, a cognitively mediated variable, cannot be viewed in isolation. The relation of social power structures to academic ability (in this case as assessed by perceived reading ability) and the dispersion of such structures can only be understood by examining the organizational conditions of classrooms. In this study social power more closely related to reading reputation and was more hierarchized under unidimensional conditions than under multidimensional ones.

Rosenholtz contends that context has implications for students' mental health and that social acceptance and emotional adjustment are influenced by instructional organization. According to Rosenholtz, multidimensional conditions appear to produce fewer social power isolates and more equal distribution of friendship choice than do unidimensional settings. Furthermore Rosenholtz and Simpson (1983) point out that there is more variability in reading scores in multidimensional classes when studied longitudinally than in unidimensional ones, at least from grades one to three. According to these findings, stratification persists more within unidimensional settings than within multidimensional ones. Thus, the organization of the context within which research is conducted is as much a determinant of outcome variables as other independent variables.

## A Task Model of Student Mediation

The task model of student mediation is based on an ecological approach to behaviour analysis. A fundamental premise of this approach is that behaviour is a response to the demands and resources of a particular setting. Therefore, an understanding of behaviour can derive only from a careful analysis of the environment in which the behaviour occurred. Ecologically speaking, the classroom is viewed as an ordered, bounded setting with unique demands. An ecological analysis of classrooms is oriented to group phenomena rather than to predicting the behaviour of individuals. As well, the emphasis in an ecological orientation is on determining why naturally occurring practices persist rather than on how these practices can be changed.

Tasks can be viewed as part of the classroom ecology. They are demands imposed on everyone in the class. Tasks are comprehended through an interactive process involving the perception of situational demands and behavioural response to such perception.

An understanding of this interactive process must include the fact that people process information for a purpose. For example, the mental representations of material viewed for personal pleasure may be different from the representations made for that which is viewed for examination purposes. Similarly, instructions to paraphrase may result in representations that

differ from those that are produced by instructions to recall.

Purposes are introduced into the construction of cognitive representations by the task conditions under which people process information. Doyle (1980) has stated that a task is a set of explicit or implicit instructions about what a person will be expected to do after witnessing or participating in an episode. Doyle contends that instructions are broadly construed in informal situations while they are more specifically outlined in formal environments, such as classrooms.

Simon and Hayes (1976) have stated that a task consists of two elements, a goal and a set of operations to reach the goal. However one of the problems in defining tasks is that since a single goal can be accomplished in several ways, it is not always possible to specify the unique set of operations necessary to reach a given goal. It is possible, though, to demonstrate that different goals require different operations for their accomplishment.

Task effects are evident at a more refined level. They are especially evident in experiments manipulating expectations for testing. Doyle (1979) called this an exchange of performance for grades. Subjects adjust information processing to fit the type of test they expect. Subjects will use different strategies of selecting and processing information depending on whether they are expected to be tested for recall, recognition, or inferences. In return for strategic performance, students are awarded grades.

Selective attention and processing depend on familiarity with a task and the developmental level of the person attempting to accomplish the task. Experience with a task increases the clarity of task demands. Task demands may not be realized by individuals outside the developmental period for which the task is appropriate. Furthermore, tasks are transformed because of the evaluative climate, group setting and materials, and history that characterize the classroom environment in which they are embedded.

### The Present Study

All three groups of researchers implicitly agree that there are internal events governing teaching-learning environments, though they each approach analysis of these internal events differently. The cognitive mediational perspective analyzes cognition in such environments with specific reference to instructional cues, cognitive processes, cognitive products and student performance. The organization of classrooms perspective contends that repeated aspects of school life determine the form of the school experience. Factors such as task differentiation, grouping practices, teacher evaluation practices and student autonomy all affect students' perceptions of learning environments. Finally, the task model of student mediation emphasizes the impact of task demands on information processing. All three have important implications for analyses of classroom

process, though all are in developmental stages requiring further investigative work and substantiation.

One recent focus in the analysis of classroom process has been inquiry into pupil attention patterns in classrooms (Morine-Dershimer, Galluzzo and Tully, 1981). Like the three groups of researchers already described, these researchers have been concerned with events governing teaching-learning environments and in one part of their 1981 study they examined pupil attention patterns to classroom discourse. However, they framed their work in sociolinguistic terms. As such, they did not specifically analyse student cognition or mediation of discourse. Rather, in their sociolinguistic approach they were concerned with the effects of social context on verbal behaviour and listener attention to that behaviour. They found that in the academic environment of the classroom, academic status variables of speakers attracted listener attention over social status variables. They argued that listeners were responding strategically to the discourse in classrooms, listening to speakers who would assist them in being successful in such environments.

The present study examined the Morine-Dershimer et al. (1981) findings. It did so by constructively replicating the original methodology including a new variable, self-efficacy perception and excluding others, grade level and ethnicity. It altered data analysis procedures. Most importantly it introduced a different conceptual framework from the one used by

Morine-Dersheimer et al. The present study did not negate the importance of social context on pupil attention patterns to discourse. Rather, it extended the sociolinguistic perspective by emphasizing student cognitive mediation of classroom discourse. Discussion of findings emphasized the role of cognition in student attention patterns with specific reference to the possible impact of classroom organization and the demands of classroom tasks on such cognition. The effects of academic environments on pupil attention patterns were less consistent in the replication than they were in the original. In the replication it appeared that pupil attention patterns were classroom specific. While listeners in one class may have been attracted by academic status variables of speakers, listeners in a second were attracted by social status variables. This study concludes with a suggestion that the effects of classroom organization and the demands of classroom tasks on pupil attention to discourse be examined in greater detail in future studies in order to gain better understanding of the internal events in teaching-learning environments. Furthermore, limitations of an empirical approach to such an inquiry are discussed.

## II. Review of Related Literature

This chapter begins with an overview of Morine-Dersheimer's sociolinguistic research and focuses extensively on a review of the Morine-Dersheimer, Galluzzo and Tully (1981) study. Included are the conceptual framework within which Morine-Dersheimer et al. operated, the objectives of the study, its methodology, and its findings.

Following this review, the process of listening is defined and factors influencing this process are elaborated. A review of the literature on status characteristics and how this literature bears on the cognitive mediational task model presented in the introduction is included. Self-efficacy literature is examined to articulate how views of oneself might relate to who gets listened to in a classroom. The chapter concludes with a summary pointing out that listening is an important classroom task, and that it is likely mediated by hearers' perceptions of the status characteristics of speakers. Six investigative questions for this research project are stated.

### Conceptual framework

Morine-Dersheimer et al., (1981) based their research on a sociolinguistic perspective of classroom discourse. Sociolinguists study differences in form, content, and sequence of verbal expressions that make one expression take on different meanings from another. Specifically, they ask how the words in a sentence convey an attitude, how the situation (e.g. intimate, formal) affects sentence construction, and how who is speaking determines what is said (Hymes, 1972). Sociolinguists consider social context as the most powerful determinant of verbal behaviour (Labov, 1970; Philips 1972). They view all speakers as multidialectical (Labov, 1970) adapting their styles of speaking to social situations (Cazden, 1970; Blom and Gumperz, 1972).

Sociolinguists also have examined verbal expression in educational settings. They have attributed some of the causes of educational failure to sociolinguistic differences between teachers and pupils (Stubbs, 1976). They have also been concerned about how classroom research has been conducted, emphasizing in particular the need to study participants' interpretations of the social situations in which language occurs. According to Stubbs (1976), "a sociolinguistic description of classroom language must come to grips with the values, attitudes, and socially loaded meanings which are conveyed by the language, and only the participants have full access to these values." (p. 76)



Thus from a sociolinguist's point of view, understanding sociolinguistic differences in classrooms will help in the analysis of educational failure. Secondly, a sociolinguistic investigation emphasizes the need to examine participant perspectives of discourse and not simply an observer's interpretations of such discourse. Pupils' interpretations of classroom discourse may differ from the teacher's interpretations, and both may differ from those of an outside observer.

### Background Information

For the past decade Greta Morine-Dershimer and her colleagues have been examining classroom verbal interactions and pupil's and teacher's perceptions of these interactions. Recently she conducted an eight-part study of one data set collected to examine the nature of classroom discourse. In one part of the study, one of the most interesting and surprising findings was that pupils reported hearing the comments or answers of other pupils significantly more often than they reported hearing teachers' questions, or any other type of teacher comments (Morine-Dershimer, Tenenberg and Shuy, 1980). This was unexpected because so much has been written about how teacher talk dominates classroom interaction (e.g., Flanders, 1970). Morine-Dershimer points out that many researchers had begun to assume that teacher talk must dominate pupil

perceptions of classroom discourse as well.

In another part of the project it was found that pupils of high status in the classroom peer group recalled more classroom discourse information than pupils of low or middle peer status. Also pupils high in entering reading achievement recalled more teacher questions than pupils low in entering reading (Tenenberg, Morine-Dershimer and Shuy, 1980).

In a third part of the full study, Morine-Dershimer, Galluzzo and Pagal (1980) report that pupil sex, status with teacher, and entering reading achievement all were related to student participation in classroom discourse, but that ethnicity and status in the classroom peer group were not. They found that boys participated more than girls, and that pupils who were high in both entering reading achievement and status with teacher participated more than pupils exhibiting other combinations of entering reading achievement and status with teacher. They also found that a student's participation in class discussion contributed to the explained variance in final reading achievement, when entering reading achievement was controlled statistically.

Morine-Dershimer, Tenenberg and Shuy (1980) then turned to examine the types of pupils' speech that seemed to attract the attention of other pupils. First, they found that the type of teacher question which preceded a student response had a significant impact on pupils' reports of other pupils' speech. Responses to lower convergent and higher divergent questions

were reported more often than responses to rhetorical, lower divergent, and higher convergent questions, or questions relating to management and lesson transitions. They also found that the type of teacher reaction following a pupil verbal contribution affected listeners' reporting of students' speech. Pupils' speech which drew the teacher's praise was reported more frequently than that which did not draw praise.

In part four of the full study, Morine-Dersheimer, Ramirez, Shuy and Galluzzo (1980) found that comments reported were related to the types of question cycles that occurred in the lessons. Pupil comments which were reported with high frequency tended to occur more often in "conjunctive" and "embedded" cycles than when such comments were not part of a cycle and were responses to individual unconnected teacher questions. A conjunctive cycle is one in which the teacher asks a question and then calls on several pupils in turn to respond to the same question. Other researchers have labeled this redirecting of teacher questions (e.g. Gall et al., 1978). An embedded cycle is one in which the teacher asks a question of one pupil, and then asks a probing or clarifying question of the same pupil in reaction to that pupil's response.

Based on these results, Morine-Dersheimer, Tenenberg and Shuy (1980) proposed the following interpretation of pupils' perceptions of classroom questioning:

1. certain types of teacher questions serve to identify the things that pupils ought to know;

2. pupils' answers to questions signal other pupils about what ought to be learned so that, if one pupil knows what ought to be known, soon all may know it;
3. teacher praise marks pupil responses that are particularly "good" (most accurate, most informative), thus pupils should give special attention to those answers which are praised; and
4. teacher "extension" of questions into conjunctive and embedded cycles serves to indicate that this is a particularly important question, thus signaling that pupils should give special attention to the responses it elicits.

#### The Morine-Dershimer et al. (1981) Study

Because the present study replicates much of the prior study by Morine-Dershimer et al., and because the present research also changes several aspects of this prior study in important ways, an in-depth review of the original investigation is provided here. Comparisons and alterations concerning the prior study by Morine-Dershimer et al. and the research done here will be noted explicitly in the next chapter when methods and procedures are described.

Investigative questions. Based on previous findings, Morine-Dershimer, Galluzzo and Tully (1981) asked the following questions:

1. Is pupil reporting of the comments of other pupils related

- to the classroom status of the pupil who is speaking?
2. Is pupil reporting of the comments of other pupils with particular status characteristics related to the classroom status of the pupil who is listening (reporting)?
  3. If patterns of pupil attention are related to classroom status of speaker and listener, are the patterns likely to help pupils learn from the comments of other pupils?

Participants. Participants in the study were 164 children and their teachers in a total of six second, third, and fourth grade classrooms, in a single school located at the southern end of the San Francisco Bay. The school was located in a lower socioeconomic multiethnic, urban area, consisting mainly of small, single family dwellings. Stable, two parent families predominated, and the school population was also remarkably stable for a lower SES community. About 45% of the pupils were Mexican-American, 35% were Anglo, 11% were Black, and 9% were other minority groups (primarily Asian and Portuguese). The six teachers were all female, and all had been teaching for many years. Four of the teachers were Anglo, one was Black, and one was Portuguese.

Data collection procedures. Basic data collection for the study involved videotaping six language arts lessons in each classroom over the first half of the school year (September through January). The videotaped lessons were played back to pupils and their teachers on the same day that they were taught. Each pupil viewed three different lessons over the course of the

study, working individually with a data collector, and responded to a variety of data collection tasks. Each teacher viewed all six lessons, and responded to many of the same data collection tasks as did the pupils.

Videotaping. Approximately 12 minutes of a classroom period were videotaped, including two to three minutes from the "opening" of the period, one or more segments in which verbal interaction occurred, and two to three minutes at the end of the lesson. Teachers were asked to conduct a language arts lesson on a topic of their own choice in which there would be some kind of verbal interaction so as to exclude "seat work," a quiz, spelling, and the like.

Videotaping was carried out during either the first or second hour of the school day. Students viewed playbacks during subsequent one-hour time blocks in the school's schedule. Up to five students engaged in data collection tasks during a given time block, each meeting individually with a researcher. In this manner half of a total classroom was met in one day, all within four hours of the taping in their classroom.

The first time pupils entered the Language Laboratory where the research was conducted they chose the researcher they wished to meet with and sat next to him/her on a small carpet on the floor. These same pupil-researcher pairs were maintained over the course of the study. Each session began with a brief overview or explanation of the task(s) for the session, given by one of the principal investigators to the entire group of

participants. Approximately three minutes of the first segment of verbal interaction in the lesson which had been recorded earlier in the classroom was then played. Each researcher then asked the pupil with whom s/he was working, "What did you hear anybody saying in that part of the lesson?" The answer was recorded verbatim by the data collector on a 3 x 5 card, and the researcher then asked, "What else did you hear anybody saying in that part of the lesson?" This continued until the pupil could think of no more responses. The next tape segment was then played, and the procedure repeated, until three segments, totalling approximately 10-12 minutes had been viewed. Students' verbatim answers on the 3 x 5 cards constituted the corpus of data used in the analyses of discourse.

Frequency of participation. Videotapes of the lessons were used to produce transcripts of each class discussion, and seating charts provided by the teacher were used to identify, whenever possible, the pupil who made each comment. These data were used to derive a measure of frequency of participation in discussion over six lessons for each pupil. Within each classroom pupils were classified as high, middle, or low in frequency of participation, based on the overall number of utterances in that class.

Status with peers. In order to assess each pupil's status within the peer group, Morine-Dershiner et al. presented each child with an array of photographs of children in the class and then read each of seven scenarios. Each child was asked to

select the three children most likely and least likely to fit each scenario by pointing to the randomly arranged pictures of their classmates. In five of the scenarios the teacher was not a participant in the episode. These scenarios involved selection of a team for a sports contest, selection of a team for a TV quiz show, identification of children who would be likely (or unlikely) to take charge and know what to do if there were an accident in the classroom and no adults were around, and identification of the children who would probably be observed "hanging around" with the pupil if s/he were followed for a week and identification of the most photogenic children in the class. In two of the scenarios the teacher was a participant in the episode. These scenarios involved teacher selection of a student to take charge of the class in his/her absence and teacher selection of an individual to take a message to the office. The two sets of scenarios, those in which the teacher was a participant and those in which s/he was not, were treated separately in data analysis. Composite scores were developed for each pupil according to how frequently s/he was mentioned by peers under "most likely" and "least likely" categories. Then, within each classroom, pupils were classified as high, middle, or low in peer status on the basis of these composite scores.

Student status with teacher. In Morine-Dershimer's study, data on pupils' status with their teacher was collected by asking the teacher to group children on the basis of several different language characteristics. In September, October, and



December, teachers were presented with a set of 3 x 5 cards, each containing the name of a pupil in their classroom and asked to sort, or group, the pupils five times according to: their participation in class discussions; their attentiveness during lessons; their tendency to follow the "no-talking" rules of the classroom; their use of "standard English"; and their probability of success in reading achievement for the year. Teachers' groupings of pupils in December, when the classroom was well established, were used to develop composite scores of their ratings of pupils. Within each classroom pupils were classified as high, middle, or low in status with the teacher on the basis of these composite scores.

Reading achievement. Pupil "entering" reading achievement scores were based on the results of the Metropolitan Achievement Test which was routinely administered by all teachers in the school in October. Within each classroom these scores were organized by quartiles, based on national test norms.

"Final" reading achievement was measured by scores on the Metropolitan Achievement Test which was administered in the fall of the following year.

Data analysis. The initial step in data analysis was to take the instances of language reported by each pupil, locate where each instance occurred in the lesson transcript, and mark that language event with the identification number of the student who reported hearing it.

Next a chart was developed for each class, showing the total number of identifiable comments made by each pupil in each of the six lessons, and the total number of these comments that were reported as heard by every other pupil in the class who viewed the videotape. (Each videotaped lesson was played back for only half of the class, and each pupil viewed three of the six videotaped lessons.) For each listener, based on the chart, it was possible to derive a measure of attention to the comments of every other pupil in the classroom. This measure was the number of comments or partial comments reported for each speaker, divided by the number of comments actually made.

A computer programme was developed to compute a mean ratio of attention for each listener to speakers categorized according to the speaker's sex, ethnicity, peer status, status with teacher, entering reading achievement, and frequency of participation. The mean ratios were ranked within categories. These rankings were analyzed using the Friedman two-way analysis of variance by ranks, to identify significant patterns of attention relative to the classroom status of pupil speakers and pupil listeners.

These statistics were computed over the full set of participants aggregated over classrooms for each of the classroom status variables. In addition, the data were analyzed separately by subgroups of listeners within each variable set (e.g., for boys and girls separately with regard to sex). A further analysis was made, broken down by grade level, to

identify any differences in patterns of attention for third and fourth graders. Some separate analyses were run by classroom to identify possible classroom differences in patterns of attention. A conservative alpha level of .01 was used to identify results of statistical reliability.

Findings. Morine-Dershimer et al. (1981) concluded that pupil classroom status was related to patterns of participation in and listening to classroom discourse.

Specifically comments made by pupils who scored above the third quartile on a standardized reading achievement test were reported proportionately more often than those made by speakers below this level of reading achievement. Furthermore, high reading achievers reported hearing other high reading achievers more often than middle or low reading achievers reported hearing high achievers.

Comments of Anglo pupils were reported proportionately more often by all pupils than those by pupils of other ethnic groups. Mexican-American speakers were listened to proportionately less often than other groups. On the whole, Mexican-Americans did not listen in different amounts to other ethnicities. On the other hand, other ethnicities showed significant patterns of differential attention. Morine-Dershimer et al. suggest that this may be due to subtle discrimination on the part of students or may be confounded with distinctions students made in terms of entering reading achievement. Mexican-Americans displayed lower entering reading achievement scores.

Pupils who participated frequently in class were high in entering reading achievement, and high in status with the teacher. Amount of participation was also positively correlated with final reading achievement. Listeners tended to report the speech of both frequent and infrequent participators in approximately equal proportions. The speech of both frequent and infrequent participators was reported significantly more often than the speech of average participators. The researchers noted that there was a special subgroup of girls who were low in frequency of participation but high in entering reading achievement and attributed attention to infrequent participators to the presence of these females in that subgroup.

Though there were no sex differences for participants in terms of entering reading achievement, status with the teacher, or peer status, the study found that girls listened to girls more often than to boys.

When data was pooled across all three grades in the study, results showed that pupils did not attend significantly more often to any peer status or status with teacher group as measured by the sociometric and teacher rating devices.

Some differences not present in across-grade data analysis appeared in within-grade data analysis. Pupils in the fourth grade listened more to other pupils and they tended to listen to higher reading achievers and to students higher in status with the teacher.

## Student Mediation of the Listening Process

Morine-Dersheimer et al. examined listening in terms of a set of student variables that might affect the listening process. They based analyses on a sociolinguistic perspective of classroom interaction and, in consonance with that model, concluded that students reported listening to students in class depending on social status characteristics. The replication conducted here emphasizes the cognitive mediational processes affecting hearers' reporting during their task of listening.

Like the sociolinguistic perspective, the cognitive mediational model proposes that listeners regularly listen to specific kinds of speakers in the class. However, it emphasizes the interactions between events in the instructional environment and a student's cognitive processing system (Doyle, 1978; Winne, 1982; Winne & Marx, 1977). It breaks selective attention as witnessed in sociolinguistic analyses into its component parts. So, for example, listener attention to tall, Mexican-American speakers would be analyzed in terms of the listener's cognitive processing. The model would first look at the cue for the listener, in this case the speaker's height and ethnicity. It would examine how a listener cognitively processes the cues and the cognitive product after information processing via a listener behavioural response. In the example this would mean assessing how the height and ethnicity of the speaker affect a listener's attention. The model would examine how different

listeners categorized according to a range of variables such as height and ethnicity listen to speakers of varying height and ethnicity. The model highlights reciprocity. A complete cognitive mediational examination would look at how cues for listeners produce cognitively mediated listener behaviours which in turn become cues for speakers, causing cognitively mediated speaker behaviours, and so on. In the height and ethnicity example just cited, this would mean not only examining how listeners behaved in response to height and ethnicity cues from speakers, but also how speakers responded to listeners' responses to them. As can be seen, the loop of listener processing and response to speaker variables, and speaker processing and response to listener variables is never-ending.

The following review discusses the major variables in the replication. It begins with a discussion of the nature of listening followed by summary reviews of literature on peer status and status with teacher, sex and self-efficacy that have implications for the listening task.

### The Nature of Listening

Dechant (1970) described listening as a thinking activity.

Only by associating experiences with symbols can the pupil arrive at meaning. Listening occurs only when the pupil organizes and remembers what is heard. The major goal of all communication, including listening is understanding or comprehension, and this is a central process involving thinking.

Rankin (1966a) defined listening ability as the ability to understand spoken language. He further explored the individual components of ability to listen, including ability to hear, recognize words, acquire new words, understand and gain meaning, concentrate or attend, anticipate sequences of speech events, associate with ideas, and recall as well as to identify important elements of speech. Bois (1966), Harwood (1966), Nichols and Stevens (1957), and Taylor (1964) all have listed similar characteristics of the listening process.

Rankin (1966b), using individual records of listening time of elementary school children found that over a period of 60 days, 29.7% of the average waking day was spent in listening. This percentage was three times as much time as was spent in reading.

Wilt (1966) reported that the amount of time children in elementary school spend in listening came to 57.5% or 158 minutes of a school day, whereas teachers' estimates of the time pupils spent in listening was half that amount, 77.6 minutes. In his study of 19 elementary school classes, Wilt (1966) concluded that "neither grade nor classroom type made a significant difference in the amount of time children were expected to listen" (p.79).

To summarize, listening is a central process involving the organization and remembering of symbolic information to which meaning can be associated with what is heard. The act of listening comprises much of what students do inside and outside

the classroom.

### The Listening Process

Attending. Many studies of the listening process include references to attending behaviour (Anderson, 1966; Broadbent, 1970; Bruner, 1957; Duker, 1966; Moray, 1970; Trabasso and Bower, 1968). It has been found that to achieve sustained attention, there must be slight content overload, challenging material, physical and mental well-being, and interesting delivery (Taylor, 1964). Anxiety of the listener affects attentiveness, with overly tense listeners being less attentive (Johnson, 1966). Similarly, the newer and more complex the input, the less likely it is to be attended to (Pessenden, 1966).

Listening and reading. There seems to be a strong relationship between reading and listening (Taylor, 1964; Young, 1972). Achievement in one is usually predictive of achievement in the other (Delcamp, 1969; Goldstein, 1940; Moe, 1966; Pratt, 1966). Because there is an abundance of research on recall of text material, it is useful to include an examination of some of it here and to make generalizations from it about listened material.

Morine-Dershimer, Galluzzo and Pagal (1980) found that most students were very aware of differences in rules of discourse in formal (school) settings as opposed to informal (home or play)



settings. In their study they pointed out that speakers speak differently in formal settings than in informal ones. Findings on recall of discourse in formal and informal settings are ambiguous. Rosenthal (1977) tested R. J. Spiro's (1975) hypothesis that subjects tend to reproduce (literally recall) text information in formal situations and to reconstruct ~~them~~ (inferentially recall) in informal situations. In his study of sixth graders, Rosenthal found that subjects do not differ in their reproduction and reconstruction of material listened to in either of the situational conditions.

Berry and Erickson (1973), Labelle (1973), Montague and Carter (1973) and Woodcock and Clark (1968) have all stated that suprasegmental features, such as speaking rate, syntactic order and placement of pauses also affect a child's ability to listen to and understand a sentence and hence his/her ability to recall it. Using participants enrolled in undergraduate introductory psychology classes, Montague and Carter (1973) found that recall of narratives presented orally in correct syntactic order was significantly greater than recall of passages in which words were presented in a random order. Also, in their study Woodcock and Clark (1968) presented standardized listening narrative passages read at varying rates to children ranging in mental age from nine years, four months to eleven years, three months. On both immediate and one-week posttesting they found that more efficient learning and retention occurred at rates of 228 to 328 words per minute. These rates are significantly faster than the

average 173 words uttered per minute in normal narrative reading. They also found an interaction between intelligence, retention and rate of presentation. Children with lower IQs performed better at rates which were slower than the most efficient rates for higher IQ children. Nelson (1976) found that comprehension of spoken language by children between five-and-a-half and nine-and-a-half years of age was facilitated as age increased and by reduced sentence difficulty. In contradiction to the findings of Woodcock and Clark (1968), Nelson found that comprehension increased with reduced rate of presentation.

Summary. The literature on the nature of the listening process suggests that what an individual attends to will affect what s/he hears. The complexity of the speech (rate of presentation, syntactic structure and use of suprasegmentals) may affect the degree to which speech is comprehended and remembered. It appears that the correctness of syntax will influence recall. However the effects of rate of presentation are controversial. While some researchers have found recall enhanced with above-normal rate, others have found comprehension increases with below-normal rates. Similar controversy exists over the effects of informal and formal settings on recall.

## Status Characteristics

When classmates interact on a school task, some students are more active and influential than others. Berger, Cohen and Zelditch (1966) theorized about this kind of behaviour in their introduction to status characteristics theory. Initially the theory was designed to cover the situations in which two interactants oriented toward single tasks with examination of only one status characteristic. Berger and Fisek (1974) formulated the second stage of the theory, enlarging its scope to include situations in which two actors possess any number of salient characteristics. They categorized the characteristics as either diffuse or specific. In the third and current stage of status characteristics theory, Berger, Fisek and Norman (1977) cover multicharacteristic situations involving more than two actors and actors of different types.

A status characteristic is a generally agreed upon social ranking in which there are at least two ranked states (Cohen and Anthony, 1982). There are two kinds of status characteristics, diffuse and specific. If a status characteristic is not restricted to any specifiable situation (e.g. "intelligence"), it is said to be diffuse. If, on the other hand, it describes how an individual is expected to act in a clearly defined situation (e.g. "logical ability"), it is referred to as specific (Humphreys and Berger, 1981).

Status variables, whether diffuse or specific, are theorized to become salient in new collective tasks even if they have no direct relevance to the task at hand (Cohen and Anthony, 1982). For example, in an early study, Zander and Van Egmond (1958) found that in groups of grade three students who were given the task of guessing the number of beans in a bottle, successful influence by students on their peers' decision making processes was related to students having a higher IQ, their having higher social power, and their being male. Thus higher status individuals will be more active and influential in a group task than lower status individuals.

Status characteristics are perceived through the status organizing process. During this process, differences in cognitions and evaluations of individuals become the basis of differences in the stable and observable features of social interaction (Humphreys and Berger, 1981). The patterned effects of race differences, sex differences and occupational differences are examples of status organizing processes.

During the status organizing process, some status states are perceived as being more salient than others, regardless of their relevance to the task at hand. Cohen (1982), Rosenholtz (1982) and Stulac (1975) have all found that certain status characteristics, such as reading ability, function as status characteristics in groups working on a task which requires no reading or other academic skill. Humphreys and Berger (1981) though, caution that researchers examining status variables of

interactants should act as if information embodied in all status elements, including ones not examined empirically, may be relevant.

Research about the status organizing process is abundant. One example of a study examining the relationship between interaction and status is the one done by Cohen and Anthony (1982). They found that students in grades two to four who were high in status with peers as assessed via a sociometric instrument (choices involved assessment of peers in academic areas) were more likely to be found talking and working with peers than students in lower states of status characteristics. These researchers also described a "snowball effect" by which peers who are perceived as high in one status characteristic tend to be high in others.

Certain caveats have been issued regarding the research in student status characteristics and their relation to behaviour. An important one has been raised about the work on reading ability as a specific status characteristic. Critics have been concerned with whether observed dominance of students with high reading status is due to reading status or due to some other measure that correlates with reading achievement and is actually more valuable to the group (Cohen and Anthony, 1982). An example of this difficulty occurred in the Morine-Dersheimer, Galluzzo and Tully (1981) study in which the correlation between reading achievement and ethnicity confounded the results about who was not being listened to, low reading achievers or

Mexican-Americans. To address this issue in status characteristic research, the intercorrelations between various status characteristics as well as the degree of relationship between those same characteristics and a behavioural measure must be examined.

Summary. Student status characteristic theory currently details the effects of multiple interactants with multiple characteristics. Status characteristics may be specific or diffuse and are likely to become salient in new collective tasks, regardless of the relevance to the task at hand. Generally speaking, higher status individuals are more active and influential in a group task than lower status individuals. Perceived status characteristics are processed cognitively and during processing, some will appear more salient than others. Until demonstrated otherwise, however, all status characteristics should be considered as relating to behaviour in a given situation. Finally, some concern has been issued in status characteristic research about focusing on variables such as measured reading achievement to the exclusion of other factors that correlate with such variables.

#### Status Characteristics Examined in the Replication Study

Morine-Dersheimer, Galluzzo and Tully (1981) examined a number of status characteristics and their relationships to a specific task. Specifically, they examined reading achievement,

frequency of participation in class discussions, peer status, status with teacher, ethnicity, sex and grade level. During the experiment, students were engaged in the task of recall of classroom discourse. The only diffuse status characteristic included in the replication was sex. In the replication, students were asked to engage in the same recall task. What follows is a review of available literature on status variables used in the replication study, their interrelationships and their relation to listening.

Sex. Mischel (1970) has summarized the general findings in regard to attentional behaviour with specific reference to sex as follows:

From the viewpoint of social learning theory, the greater attentiveness to same-sex models, especially when they are displaying appropriately sex-typed behavior, probably reflects that people generally are reinforced throughout their histories more for learning sex-typed behaviors of same-sex models than those of cross-sex models. (p. 38)

A number of studies have demonstrated the lack of a relation between sex and encoding and decoding accuracy for speakers or listeners. In a study of 5 to 7 year-olds, Karabenick and Miller (1977) studied whether or not there were interaction effects between age, sex, trials and condition on a task involving speaking and listening skills in feedback and no feedback situations. In their experiment, two conditions were employed. In one condition, the speaker and listener could not see each other but could communicate freely back and forth; in the second the speaker and listener could not see each other, and only the

speaker could talk. The task in all trials was for speakers to get listeners to reproduce a pastoral scene. The speakers were allowed to view the completed puzzle while the listeners had only puzzle cutouts randomly assembled, available to them. Assessment of communication was based on speakers' accuracy of encoding, listeners' correct responding, and interactive communication between speaker and listener. The researchers found that older students conveyed significantly more information than younger ones. They found no difference between amounts communicated by males or females in the no-feedback condition; however, only boys generated superior messages with listener feedback. As listeners, boys were more active than girls, asking more questions and confirming more speaker messages. At all ages both male and female listeners were able to carry out most of the adequately encoded messages.

Other studies (Maccoby and Wilson, 1957; Rudy, 1981) have examined the attentional style of subjects to same vs. other-sex models. In a study in which pictures of male and female models performing matched acts were shown to children aged 5 to 6 and 9 to 10, Bryan and Luria (1978) assessed visual attention by the method of feedback electroencephalography (EEG). No reliable difference was found in EEG attentional measures for the male versus female slides. Similarly, there were no consistent differences in recall and stated preferences of same-sex or other-sex slides. In the first experiment, the children recalled and preferred slides of tasks performed by same-sex models



reliably more often than slides of tasks performed by other-sex models, and also tended to prefer same-sex models. In their second experiment within the same study, these same researchers found that children, regardless of gender, recalled more of the male slides. In this experiment, males preferred the male tasks while females preferred male and female tasks equally.

### Self-Efficacy

In addition to the status variables examined by Morine-Dershimer et al. (1981), a non-status characteristic, perceived self-efficacy, is included in the replication. Although assessable through a probe, self-efficacy is a covert variable and as such not observable to listeners in the class. Nevertheless, self-efficacy perception and its effects on academic performance have been gaining prominence in the literature over the past several years (Bandura, 1977b; Bandura and Adams, 1977; Bandura, Adams, Hardy and Howells, 1980; Bandura and Schunk, 1980; Schunk, 1979.) Bandura (1982) has stated that one's perceived efficacy in dealing with one's environment is not fixed, nor is it determined simply by knowing what to do to achieve goals. It involves orchestrating and continuously improvising component cognitive, social and behavioural skills. "Perceived self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations" (Bandura, 1982, p. 122).

The inclusion of self-efficacy perception as a variable in this study may add to our understanding of the relationship between self-efficacy perception and listener attention patterns. An important finding in the Morine-Dershimer et al. (1981) study was that listeners attended to speakers with high scores in a standardized reading test over those with lower scores on that measure. A follow-up to the original study would be one examining whether listeners in Morine-Dershimer et al.'s (1981) study were attracted solely by strong academic performers or equally or more attracted to the speech of speakers with high self-efficacy perception in academic areas, regardless of their actual academic performance.

Considerable research exists that has examined the relationship between people's percepts of self-efficacy and their performance on a variety of clinical and academic tasks (Bandura, 1977b; Bandura and Adams, 1977; Bandura, Adams, Hardy and Howells, 1980; Bandura and Schunk, 1980; Schunk, 1979.) In these studies it was found that self-efficacy judgments were made about performance in prospective situations which contain many unpredictable, ambiguous and/or stressful elements. These judgments can be influenced by previous performance accomplishments, vicarious experiences, verbal persuasion and physiological arousal (Bandura, Adams and Beyer, 1977; Bandura, Jeffrey, & Gajdos, 1975). Generally, it has been found that previous performance accomplishments are the source of stronger and more generalized percepts of efficacy. Perceived

self-efficacy affects behavioural functioning by influencing people's choice of activities, their expenditure of effort, and their persistence in the face of difficulties (Bandura, 1982). The higher the perceived efficacy, the greater is the sustained involvement in the activities and subsequent achievement.

Bandura (1982) reports evidence that those who perceive themselves as being extremely self-efficacious in an undertaking may feel little need to invest much preparatory effort in it. He reports on Salomon's work (in press) in which high perceived self-efficacy as a learner is associated with heavy investment of cognitive effort and superior learning from instructional media that children consider difficult, but with less investment of effort and poor learning from media that they believe to be easy. Thus some uncertainty about efficacy to complete a task may have preparatory benefits.

Self-efficacy judgments also influence thought patterns and emotional reactions during anticipatory and actual transactions with the environment. Ruminations about potential poor performance create stress and can impair performance by diverting attention from how best to proceed with an undertaking (Bandura, 1982).

In testing propositions relating self-efficacy and performance, individuals are presented with graduated self-efficacy scales representing tasks varying in difficulty, complexity, stressfulness, or some other dimension, depending on the particular domain of functioning being investigated.

Perceived self-efficacy has been shown to be a better predictor of subsequent behaviour than performance attainment, acting as an intermediary between performance accomplishments. Thus, it is theoretically related to students' cognitive mediations of classroom tasks. In summary, then, perceived self-efficacy is an individual's covert views of self. Essentially, this covert view, though apparently static at the time of a self-efficacy probe, is constantly in flux, varying as a function of task (math vs. music) and from time to time. Individuals' self-efficacy percepts may affect their performance at a task which, in turn, may affect their subsequent self-efficacy percept. As such, self-efficacy perception of speakers may be the factor determining listener attention patterns and not academic achievement per se.

### Conclusion

This review of literature has made several points. Firstly, listening is an activity that occupies much of a student's time, both inside and outside the classroom. The task of recalling listened to material, broadly speaking, is affected by a student's attention to speech and the complexity of the speech event. Status characteristics such as the speaker's and the listener's reading achievement, frequency of participation, sex, peer status, and status with teacher are variables that may influence a listener's attention to the speaker, thereby

influencing how the listener mediates recall of a message. The literature has shown that high status individuals are more active and influential and that the variable of reading achievement may be too microscopic for investigating listeners' attention to speakers. Furthermore, a non-status characteristic, perceived self-efficacy, has been shown to be a major correlate of future performance. It may be a covert factor that precedes performance and is more strongly correlated with listener reports of speech than actual academic performance.

The review indicates that the study of pupil attention patterns may be framed in cognitive mediational terms. Accordingly, the effects of speech may be viewed in terms of individual mediation of cues and assessed from students' reports of speech events. An examination of the effect status characteristics bear on pupil attention patterns as well as covert factors affecting those characteristics can enhance our understanding of the impact of classroom discourse on students.

The questions for the replication study, then, are as follows:

1. On the average, do listeners report hearing the speech of speakers who occupy higher status on academic variables?
2. Do listeners who have various academic status characteristics attend differentially to their peers as a function of their peers' academic status?
3. On the average, do listeners report hearing the speech of speakers who occupy higher status on social variables?

4. Do listeners who have various social status characteristics attend differentially to their peers as a function of their peers' social status?
5. On the average, do listeners report hearing the speech of speakers who occupy higher status on personal variables?
6. Do listeners who have various personal status characteristics attend differentially to their peers as a function of their peers' personal status?

### III. Method

#### Participants and Setting

The participants in this study were four teachers and the grade six students in each teacher's intact classroom. Participation in the study was voluntary and required the permission of the students' parents. Of the possible 103 student participants, 100 students returned permission slips. The three students who did not return slips pursued independent study while the research was being conducted.

The classrooms were in three schools located in a suburban school district in the lower mainland of British Columbia. Based on regular travel through the area as well as discussions with the teaching staff of the schools in the study, it was judged that the schools all were located in a middle socioeconomic area consisting mainly of small, single family dwellings. Stable, two parent families predominated. Though most of the participants were caucasian, an assessment of class lists suggested that approximately 20% were of Asian descent. The four teachers were all female, and all had been teaching for more than five years.

## Selection of Classes

Classroom task structure across classes was controlled by studying classrooms in which recitation teaching was a dominant mode of instruction. The recitation mode has been described by Bellack, Hyman, Smith and Kliebard (1966) as a highly structured method of teaching in which the whole class attends to instruction delivered by the teacher and dialogue is characterized by a question-response-react cycle. Teachers who were invited to a preliminary meeting were asked whether they used the recitation mode of teaching in their lessons. To help these teachers determine whether they used the recitation mode, they were shown a videotape example of this type of teaching. It portrayed a teacher using a recitation strategy to instruct a grade three-four split class on how to use quotation marks in sentences.

After viewing the videotape, two of the six teachers who attended the preliminary meeting stated that they either did not use this method of instruction or were unwilling to participate in the study. To determine whether the remaining four teachers used the recitation mode, as they claimed, dates were scheduled for videotaping sample lessons in each of their classrooms. Because the study was going to take place during language arts instruction, teachers were asked to teach a lesson in this subject area. Otherwise, they were free to determine the content of their lessons.



The trial videotaping occurred during the last two weeks in April. Teachers generally kept this lesson to between 20 and 30 minutes. The first 20 minutes of the videotape of this trial lesson was viewed by the class immediately following the videotaping, to reduce the novelty of videotape playback.

In order to assess teachers' use of the recitation mode in their lessons, the Recitation Study Observation System as described by Clark, Gage, Marx, Peterson, Stayrook, and Winne (1979) was employed. Lessons were judged as being predominantly recitation if approximately two-thirds of speaking time was attributable to the teacher and if speech acts could be characterized as following cycles of teacher structuring, teacher presenting information, teacher soliciting, student responding and teacher reacting. More specifically, soliciting is usually followed by student response which is then followed by a teacher reaction. Generally after the reaction, the teacher either structures, presents information, or solicits again.

From these analyses of the four teachers' lessons, it was concluded that these teachers used the recitation mode of teaching as requested. Results of these analyses appear in Appendix A. Subsequently, all four teachers agreed to participate in the study on the condition that they use the recitation mode during the language arts lessons they would teach as part of the study. Pictitious names for the participating teachers were randomly selected from the telephone directory. The four names selected were: Mrs. Bandy, Mrs.

Dankin, Mrs. Mason, and Mrs. Parici.

### Variables and Instrumentation

Classification of variables. The nine discrete variables used in the replication were classified as academic, social or personal. The academic variables were so classified because they reflected either the student's ability or achievement in school subject matter, particularly reading, as assessed by the teacher, the student, or a standardized test. The academic variables in this study are: teacher rating of student reading ability, Metropolitan Achievement Test scores, student academic standing as rated by the teacher, and student academic standing as rated by peers. The social variables were so classified because they were related to students' popularity and esteem within the peer group. The social variables in this study are: average frequency of participation in class discussion, student social standing as rated by the teacher, and student social standing as rated by peers. The personal variables are sex and self-efficacy perception.

The Metropolitan Achievement Test was used as one measure of reading achievement in this replication because it was included in the original study. Scores based on the number of correct responses, which could range from 0-60, were used in statistical analyses.

A modification of the forced-choice format described by Marx (1978) was used to obtain the teachers' ratings. Teachers were asked first to divide their class into high, middle, and low thirds in terms of ability to read difficult material silently and really understand it. Teachers were instructed not to take reading rate into account when making their judgments. Following this categorizing procedure, each student's name was paired with the names of every other student in his/her category in his/her class. The number of pairs generated by this procedure for each third of the class thus was  $N(N-1)/2$  where  $N$  equals the number of students in a category. Thus if there were eight children in the high group, there would be 28 pairs of names. Each pair of students' names was placed on an index card. The paired names were listed vertically on a card, and a particular student's name appeared in the top position on half the cards on which it was listed. Cards were stacked by successively selecting one card randomly from each third of the class. Stacking continued until there were no cards remaining in at least one of the thirds. At that point, remaining cards were randomly placed in the deck.

When teachers were given the deck of cards, they were asked to circle the name of the better of two readers in a pair using the following criterion:

For the purposes of this study, the best reader in your class is being defined as the one who can read the most difficult material silently and really understand it. Do not consider reading rate when rating a student's reading ability.

After the teacher had made her selections, the researcher returned the deck to its original order of top, middle, and bottom thirds. Then students within each third were ranked separately based on the number of times a student's name was circled such that within each category, students were assigned a rank within the range of ranks for their third. Thus, students in the top third of a class of 27 students were assigned ranks between 27 and 19. Students in the middle third of that same class were assigned ranks between 18 and 10. If students within a particular third of the class were selected an equal number of times by the teacher, then ranks were shared among them. For example, two students receiving scores of 3 in the top third of a class could be occupying ranks 23 and 24. In this case, each would be assigned a rank of 23.5. If three students had received scores of 3 and were occupying ranks 23, 24, and 25, each would receive a rank of 24. The lowest ranking pupil in each class received a rank of one. Thus the range of scores on the teacher ranking of reading ability for the four classes were 1-26 for Mrs. Bandy's class, 1-22 for Mrs. Dankin's class, 1-29 for Mrs. Mason's class and 1-23 for Mrs. Parici's class. Appendix B presents a copy of the form asking teachers to divide the class in thirds.

Student status with teacher. Data on student status with teacher also were gathered differently from the way they were gathered in the original study. In order to simplify the procedure, student status with teacher was established by

administering to teachers an adaptation of the peer status questionnaire administered to students. The only difference between the questionnaire administered to students and the one administered to teachers was that one question on the students' form (concerning which peers would most likely be seen hanging around with the respondent) was deleted from the teachers' form. (See Appendix C for a copy of this questionnaire.) Also, like peer status, teachers were given as much time as they needed to complete the questionnaire. This variable was scaled by assigning a pupil a score of one for each time s/he was selected by the teacher for a particular item.

Status with peers. During the first week of the study, each child was asked to fill in a questionnaire about who performed best in a variety of classroom activities (see Appendix D.) The names of all students, including those not participating in the study, were listed on the blackboard prior to their responding. In the questionnaire, students were asked to choose peers who would perform best in athletics, who had the most general knowledge, who did the best in language arts activities, and who showed the most autonomous and responsible behaviour. A pupil received a score of one each time s/he was selected.

The questionnaire was administered to the entire class, except for absentees. Absentees for this administration were administered it two weeks following the collection of all other data.

Prior to administration of the questionnaire, a passage designed to create set induction was read to all students. (See Appendix E for a copy of this set induction.) The purpose of the set induction was to remind students that their responses would be kept totally confidential and to inform them of the parameters of the questionnaire. Students were not to select themselves for any of the choices on the questionnaire. They were also asked to choose only students from their own class when filling in the questionnaire. As well, it was requested that they answer each question completely and that if they had difficulty selecting an individual for any of the questions, they were to guess someone they might choose in the future.

Because the focus of status with peers is on children's choices of other children, questions in the original study by Morine-Dershimer, Galluzzo and Tully (1981) that dealt with children's predictions of teacher choices were deleted. There also was a concern about the ethics of asking students to name peers that they would rate as worst or least capable in a number of skill areas as Morine-Dershimer et al. (1981) had done. Therefore students were asked to name only students they would choose first, second or third for a variety of tasks. Students did not view photographs of their peers while filling out the questionnaire as in Morine-Dershimer et al. (1981) because resources prohibited this procedure. Since their peers' names were on the board, it was felt all students were considered in filling out the questionnaire. The questions on language arts

were additions to the original scenarios written by Morine-Dershimer et al. (1981) and were included to reflect the content of the lessons to be videotaped.

Frequency of participation. While students were viewing the videotape of the lesson, their teacher was asked to write down who was speaking on the videotape or a "T" for their own speech. Any time a student made any verbal contribution, his/her name was to be written down. However, "T" was to be written down only when the teacher's speech event exceeded one word. Thus, counting of minimal encouragers such as "uh-huh" was avoided. As well, the simple calling of a student's name by the teacher also was not counted.

After all the other data had been collected without students present, teachers again viewed the videotapes, repeating the same task. Teachers were asked to review the tapes to increase the reliability of their ratings of frequency of participation. Teachers were reminded of the criteria for a speech event prior to the second viewing of the lesson. Tallies for first and second viewings were coded separately. A student's total number of speech event contributions in a given lesson equalled the average of these two tallies.

Self-efficacy. In order to obtain a self-efficacy judgment by the students, a self-efficacy measure was developed following the guidelines outlined by Bandura (1982). Bandura has contended that efficacy judgments vary on dimensions of magnitude, strength and generality. He also states that because

self-efficacy judgments are related to the performance of a specific behaviour, they are best assessed either immediately prior to or immediately following the performance of that behaviour.

The self-efficacy measure included in this study was appended to the answer sheet of the Metropolitan Achievement Test. It adhered to the two previously mentioned guidelines for self-efficacy measures. After completing the Metropolitan Achievement Test, students were asked to rate themselves on how they thought they would perform on a future reading test similar to the one they'd just taken and containing the same number of questions. Students were asked to mark one score that best represented their estimate. The range of scores listed was the same as the range on the Metropolitan Achievement Test, 0 to 60; however scores were listed in five point intervals. A copy of the probe is presented in Appendix P.

#### Statistical Procedures for Derivations of Variables

This section describes the derivations of the class mean report of speech score, the individual mean report of speech score, the average frequency of participation score, the academic standing as rated by teacher score, the social standing as rated by teacher score, the academic standing with peers score, and the social standing with peers score.

Class mean report of speech score. In order to derive the average proportion of times a student was listened to by all



his/her classmates, the following procedure was used. First a count of each student's speech was established by averaging the teacher's two reports of each student's speech from her viewings of the three videotapes, one for every lesson. Next a proportion was calculated for each speaker within each lesson. The proportion was calculated by counting the number of times a particular student listener heard a speaker and dividing that number by the count of that speaker's oral contributions during the lesson as assessed by the teacher. Thus, for each listener within each lesson, the number of proportions calculated equalled the number of students who were potential speakers in the class. The proportions were calculated individually for each of the three lessons and separately in each class.

Once these proportions were calculated, certain ones were ignored or modified before final calculation of the class mean report of speech score. A listener's reporting of his own speech was not included in the class mean report of speech score. Secondly, if a listener reported hearing a speaker who was absent or if s/he reported hearing a speaker more often than the speaker actually spoke, a proportion of 1.00 was assigned to that speaker for that lesson.

A special procedure was followed to deal with the report of speech of a speaker who in fact did not speak. This involved calculating two preliminary class mean report of speech scores for each speaker prior to final calculation of class mean report of speech score.

Let's call the first preliminary calculation of class mean report of speech score, X. Prior to calculation of X, both modifications just described would have been performed. As well, a third modification would now be performed. Speakers who were reported as having spoken but in fact did not speak would be assigned proportions of 0.00 for that lesson. Then X would be calculated for each speaker, averaging the proportions of speech reported by all listeners for each speaker across the three lessons. In a class of 26 students, X would be calculated 26 times, once for each speaker.

Let's call the second preliminary calculation of class mean report of speech score, Y. Again, prior to calculation of Y, both modifications mentioned above would be performed. That is, a listener's report of his own speech would not be included in the calculation of Y; and, if a listener reported hearing a speaker who was absent or if s/he reported hearing a speaker more often than the speaker actually spoke, a proportion of 1.00 would be assigned to that speaker for the lesson. The third modification in the calculation would be that speakers who were reported as having spoken but in fact did not speak would be assigned proportions of 1.00. Then Y would be calculated for each speaker, averaging the proportions of speech reported by all listeners for each speaker across the three lessons. Y would also be calculated 26 times.

Let's call Z the final and actual reported value for class mean report of speech scores. Z would be the average of X and Y

for each speaker. In other words,  $Z = (X + Y)/2$ .

In all cases the class mean report of speech score was adjusted to compensate for missing values due to speakers' absenteeism. Proportions for absent students were excluded from the calculation of the above averages.

Individual mean report of speech score. In this study, analyses of pupil attention patterns were not based on the class mean report of speech score as was done by Morine-Dersheimer et al. (1981). The major reason for elimination of this data analysis procedure was that it did not fit within the cognitive mediational paradigm. In the replication specific emphasis was placed on analysing how individual students were mediating their attention to the discourse of their peers. Morine-Dersheimer et al.'s analysis was insensitive to individual differences in mediation patterns because it aggregated all listeners' reports of a given speaker's speech to derive one class mean report of speech score for each speaker in the class.

In the replication, an individual mean report of speech score was used to analyze pupils' attention to discourse. The individual mean report of speech score was derived in the same way the class mean report of speech score was derived. The difference between class mean report of speech score and individual mean report of speech score is that, whereas the class mean report of speech score is the average proportion of a speaker's speech event contributions reported by all listeners in a class, the individual mean report of speech score is the

average proportion of a speaker's speech event contributions reported by one of his/her classmates. The same modifications as done to the class mean report of speech score were done to the individual mean report of speech score. The proportion was averaged three times for each speaker. In a class of 26 students, it was calculated 25 times for each listener. Because individual mean report of speech scores of a pupil listening to his own speech were not included, the total number of individual mean report of speech scores in a class equalled  $N$  squared minus  $N$ .

An illustration of the calculation of the individual mean report of speech score for a small class should assist the reader in understanding its derivation and rationale for its use. Assume that in Ms. Schwartz's class there were six students, three females and three males. The females were Anne, Lynn and Sara. The males were Dave, Nick and Pete. The raw data for the number of individual listener reports of each speaker's speech events appears in Table 1. Note that 'X' indicates a listener's report of his/her own speech and is therefore ignored in calculation of individual mean report of speech scores. 'A' indicates that the listener was absent during that lesson.

Table 1

Number of Individual Listener Reports  
of Each Speaker's Speech Events

Speakers by Lesson																		
	Anne			Lynn			Sara			Dave			Nick			Pete		
	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3	L1	L2	L3
A n n e	X	X	X	1	0	0	1	0	1	2	2	0	4	4	1	3	2	3
L y n n	4	A	4	X	X	X	1	A	1	2	A	0	5	A	0	2	A	3
S a r a	4	2	3	0	0	1	X	X	X	6	7	1	4	3	0	6	6	4
D a v e	1	1	A	0	1	A	0	0	A	X	X	X	1	0	A	1	0	A
N i c k	4	3	4	0	0	0	1	0	1	7	6	0	X	X	X	6	5	4
P e t e	2	1	1	0	0	1	2	0	2	3	2	0	4	3	0	X	X	X

Note: L1 = lesson 1, L2 = lesson 2, L3 = lesson 3

Table 2 includes the speech contributions of each speaker as assessed by the teacher. The first two entries for each speaker are the actual observations made by the teacher upon each viewing of the videotape playback. The third entry is the average of the first two entries. It is this third score that was used as the denominator in calculating the proportion of a speaker's speech reported by a listener.

Table 2

Number of Speaker's Speech Contributions  
by Observation and then Averaged

	Lesson								
	L1			L2			L3		
	01	02	M	01	02	M	01	02	M
A n n e	5	4	4.5	3	3	3	6	7	6.5
L y n n	0	0	0	0	0	0	1	1	1
S a r i a	2	2	2	0	0	0	2	1	1.5
D e a n v e r	8	8	8	9	8	8.5	0	0	0
M i c k	4	4	4	3	3	3	0	0	0
P e t e	8	7	7.5	7	7	7	5	5	5

Note: 01 = Observation 1, 02 = Observation 2  
L1 = Lesson 1, L2 = Lesson 2, L3 = Lesson 3

Table 3 includes the final individual mean report of speech scores for each speaker calculated for each listener. Explanations of some sample calculations will assist in understanding the calculation of individual mean report of speech scores.



Table 3

Individual Mean Report of Speech Scores  
for Each Speaker by Each Listener

		Speakers					
	Anne	Lynn	Sara	Dave	Nick	Pete	
A n n e	X	.25	.39	.25	.84	.43	
L Y n n	.76	X	.59	.25	.5	.44	
S a r a	.67	.50	X	.86	.67	.82	
D a v e	.28	.5	0.00	X	.13	.07	
N i c k	.84	0.00	.39	.82	X	.77	
P e t e	.31	.5	.67	.31	.67	X	

First, note the individual mean report of speech score value of .67 for Sara listening to Anne in row 3, column 1 of Table 3. The raw scores in Table 1 (3,1) were converted using Anne's estimated speech contributions in Table 2 (1,1) as follows. In lesson 1 Sara reported hearing Anne 4 times. As reported by the teacher, Anne spoke 4.5 times. The proportion of Anne's speech that Sara reported for that lesson was .89 (i.e.  $4/4.5$ ). In lesson 2 Sara reported hearing Anne 2 times. Anne had 3 speech contributions in that lesson. The proportion of Anne's speech that Sara reported for that lesson was .67. In lesson 3 Sara reported hearing Anne 3 times. The teacher's estimate of Anne's speech contributions was 6.5. Therefore the proportion of Anne's speech that Sara reported for that lesson was .46. Over all three lessons the average proportion of Anne's speech reported by Sara equalled  $(.89 + .67 + .46)/3$ , or .67 as appearing in Table 3 (3,1).

The above is an example of an ideal situation. Both speaker and listener were present for all three lessons. The listener reported the speaker's speech in all lessons but did not report it more often than it actually occurred. What follows are explanations of derivations of individual mean report of speech scores that are exceptions to the ideal.

In Table 3 (1,2) Anne's report of Lynn's speech was derived as follows. Because Anne reported hearing Lynn in lesson 1 where Lynn was present but actually did not speak, two calculations of individual mean report of speech score had to be made and

averaged for the final entry in Table 3. In the first calculation Anne's report of Lynn's non-existent speech was changed to a non-report of speech. Because Lynn was absent in lesson 2, Anne's non-report of Lynn's speech contributions was ignored and only proportions for the first and third lessons were included in this first calculation. In the second calculation the proportion for Anne's report of Lynn's non-existent speech in lesson 1 was changed to a value of 1.00. Again only the proportions for lessons 1 and 3 were used in this second calculation of individual mean report of speech score. So the individual mean report of speech score in the first calculation equalled 0. The individual mean report of speech score in the second calculation equalled .5. The final was the average of these 2 proportions,  $(0 + .5)/2$  or .25 which appears in Table 3 (1,3).

It should be noted that when an absent student was not reported as having spoken, the individual mean report of speech score was calculated from the two lessons in which the speaker was actually present. However if an absent student was reported as having spoken, the individual mean report of speech score was calculated from three proportions. In Table 1 (3,4) the individual mean report of Dave's speech as reported by Sara was based on the average of three proportions. Though Dave was absent in lesson 3, Sara reported having heard him speaking in that lesson. A proportion of 1.00 was therefore assigned for her report of his speech and included in the overall calculation of

individual mean report of speech score.

The raw score of 5 in Table 1 (2,5) was converted to a proportion of 1.00 for inclusion in the calculation of Lynn's individual mean report of Nick's speech. This was an example of a listener reporting more speech events than actually uttered by a given speaker. In Table 1 (2,4) the final frequency count for calculating individual mean report by Lynn of Dave's speech was the frequency of 2 appearing in table 1 (2,4). This was because Lynn was absent in lesson 2 (Table 1 (2,4)) and reported no speech for Dave in lesson 3. Dave himself was absent in lesson 3. A final example of averaging based on less than 3 lessons occurs in Table 1 (4,2). It would be expected that because Lynn was absent in lesson 2 and Dave was absent in lesson 3 only 1 proportion would be used for the calculation of individual mean report of speech score. However, because Dave reported hearing Lynn in lesson 2 where Lynn was in fact absent, a proportion of 1.00 was assigned for Dave's report of Lynn's speech for that lesson and included in the final calculation of individual mean report of speech score.

In this class of 6 students, 30 individual mean report of speech scores were generated. In Morine-Dershiner et. al's procedure only 6 class mean report of speech scores would have been generated. They would have been the average of the column in Table 3. In the original, an overall attention pattern by all listeners to a speaker was used to generate discussion. In the replication, individual differences in each listener's attention

to each speaker were examined.

Academic and social status as rated by the teacher. To calculate a student's status with the teacher, the questions on the sociometric instrument (Appendix C) administered to teachers were divided into two categories, those dealing with a student's academic status with the teacher and those dealing with his/her social standing with the teacher. Items two, three, five and eight were classified as academic status questions while questions one, four, six, seven and nine were classified as social status questions. Academic status with the teacher equalled the total number of times a student was selected on items two, three, five and eight, divided by four. Social status with teacher equalled the total number of times a student was selected on items one, four, six, seven and nine divided by five.

Academic and social status as rated by peers. To calculate a student's status with peers, the questions on the sociometric instrument (Appendix D) administered to students were divided into two categories. One dealt with students' academic status. The second concerned their social status with their peers. Items two, three, five and eight were classified as academic status questions and items one, four, six, seven, nine and ten were classified as social status questions. Academic status with one peer equalled the total number of times s/he was selected by that peer on items two, three, five and eight divided by four. Academic status with peer group equalled the average of academic

status with all peers within a class. Similarly, social status with one peer equalled the total number of times s/he was selected on items one, four, six, seven, nine and ten by an individual classmate divided by six. Social status with peer group equalled the average of social status with all peers within a class.

Average frequency of participation. The average frequency of a student's participation was calculated by dividing the total number of the teacher's assessment of that student's speech contributions in all three lessons by the total number of speech events in the three lessons. The total number of speech events equalled the sum of all teacher speech events plus all speech events of all student speakers, with one exception. Speech events used in the calculation of average frequency of participation were counted only in lessons where the speaker was present.

### The Lessons

During the initial meeting with teachers, the content area for the three lessons was mutually selected. All four teachers chose to do one lesson each on advertising, on a short story, and on commas. Though the specific content and exact method of instruction were not standardized across classes for all three lessons, the intended learning outcomes as described below were standardized. Some materials, described below, were provided to

all teachers by the experimenter. The purpose of providing materials for the teacher was to standardize content across teachers somewhat, as well as to reduce the burden of lesson preparation for the research project.

Advertising lesson. The intended learning outcome of the advertising lesson was that students would be able to identify devices used to influence belief in and acceptance of a given item in magazine ads. For Mrs. Dankin's, Mrs. Mason's and Mrs. Parici's classes, the given item was cigarettes. Mrs. Bandy used a variety of different magazine ads to approach this learning outcome.

Short story. The intended learning outcome of the lesson on short story was that pupils would better understand and appreciate characterization. Students were to examine how convincing the protagonist was in the short story "Charles" by Shirley Jackson. They were to examine specifically how they learnt about the character through a) what the author tells us about him; b) what the character says; c) what other characters say about him; and d) what the character does.

Commas. The intended learning outcome of the commas lesson was that students would be able to use commas appropriately for parenthetical inclusions and for natural pauses in sentences. A class worksheet emphasizing these two uses of commas was given to each teacher. Appendix G presents a copy of this worksheet.

## Procedures

Initial contact. The initial contact session began with personal introductions and a description of the study (1 hour.) The general area of investigation, rationale for the study, procedures, time commitment, time line, and lesson content were all discussed.

Schedule. After commitment by the teachers to be involved in the study, and selection of teachers following trial videotaping of a recitation, the following five-week schedule was established:

Week 1: Administration of the peer status and status with teacher inventories; teacher selection of top, middle and bottom thirds of the class in terms of reading achievement.

Week 2: Administration of the Metropolitan Achievement Test (reading subsection) and the method of paired comparison for teacher ranking of students' reading ability.

Week 3: Lesson 1; advertising lesson.

Week 4: Lesson 2; short story.

Week 5: Lesson 3; comas.

All teachers adhered to this schedule and taught their lessons between 9:00 A.M. and 10:25 A.M. with the following exceptions. Mrs. Parici taught her lessons from 1:40 P.M. to 3:00 P.M. She began the study one week late, and her fifth session (lesson 3) was delayed one week beyond the planned schedule.



Videotaping. During the actual study, teachers kept their lessons to between 20 and 30 minutes.

At least twelve minutes of each lesson were videotaped in three segments of 4 minutes each. Videotaping of the first segment began at the point where the teacher asked the first content question in the lesson. Content questions typically began with words like "how," "what," "where," "when," and "why." These are different from procedural questions which deal with issues like management, transitions, and orienting. Videotaping was stopped four minutes after its initiation unless a speech event was occurring. In that case, taping continued until the end of this event. Videotaping of second and third 4-minute segments began when the teacher asked the next content question following termination of the prior segment.

Playback. Each of the lesson's three segments were played back sequentially to pupils in the class on the same day and immediately after the lesson was taught. When the videotape was stopped at the end of each segment, students were asked, "What did you hear anybody saying during that part of the lesson?" Students were also instructed to write down as many of the names of each person they could remember talking along with as much of what they said as they could recall. They were urged to write down the actual words spoken on a preprinted form. Students were instructed to place question marks in columns where they were unable to remember either the name of the speaker or what was said. Students were given five minutes to write down as much as

possible of what they could remember from the videotape. To familiarize students with the videotaping and playback procedure, a practice trial was tried after the advertising lesson (lesson one).

This procedure was followed for lessons one and two. Before the taping of the third lesson, teachers expressed concern that they would be unable to keep the lesson going long enough to allow for 12 minutes of videotaping with two breaks between videotaped segments. For the third videotaping, a modified procedure was employed. A total of 12 minutes of the lesson was videotaped without interruption. During playback, the videotape was stopped after at least four minutes. Playback was not stopped in the middle of a speech event.

Students' reports of the content of speakers' speech were not analysed. Each time a listener reported hearing a speaker that report was counted as one instance of a speaker being heard.

### Data Analysis

As described in Chapter 2, Morine-Dershimer et al. (1981) developed a computer programme to compute mean ratios of attention to each speaker for all listeners in a class, or what have been labelled class mean report of of speech scores in the present study. For each of six pupil variables (sex, ethnicity, peer status, status with teacher, entering reading achievement,

and frequency of participation) Morine-Dershimer et al. ranked the students. Then the students were placed in blocks of two, three, or four, depending on the variable being examined. Following the blocking of data, Friedman two-way analyses of variance by ranks were used to identify significant patterns of attention relative to speakers' and listeners' rank on these variables.

In the replication, this data analysis procedure was not followed. Morine-Dershimer et al. based their analyses on the class mean report of speech score. In the replication, a second variable, the individual mean report of speech score, was generated to probe listening patterns further. Analyses of variance as done by Morine-Dershimer et al. could not be done using this generated variable. This was because these scores were calculated across speakers heard by one listener. For example, in a class of 26 students, a listener would listen to 25 different speakers from which 25 individual mean report of speech scores were generated. These 25 scores were not statistically independent of each other as they were all generated by the same listener. Because of non-independence of data, analyses of variance were not performed because they assume independence of data. Secondly, Morine et al.'s blocking of ranked data into halves, thirds, or quarters is questionable because data at the extremes within one block were considered more similar than the next ranked datum in an adjacent block.

An alternative form of data analysis was developed to compensate for inadequacies in the original while still answering the investigative questions. The new data analysis addresses the investigative questions outlined by Morine-Dershimer et al. replicated in this study. This analysis has two thrusts corresponding to the major findings in the original study. Firstly, it illuminates relationships between a variable describing a speaker and the likelihood of listeners reporting speech of that speaker. Secondly, it examines the relationship between a variable describing a listener on the one hand, and the relationship between that same variable describing a speaker and the speaker's likelihood of being listened to. To illustrate, suppose one were interested in examining the effects of height on listener attention patterns. The first analysis would describe a relationship between height of a speaker and the likelihood an average listener reported that speaker's speech. The second analysis would describe how height of the listener was related to the probabilities of reporting speech of speakers with different heights.

The new data analysis entailed correlational, median, regression and confidence interval analyses. What follows is an explanation of each step of the data analysis procedure. The height example is used throughout to illustrate the interpretations of findings from each step of the procedure.

First, within each listener, correlations were calculated between a variable describing speakers and the individual mean

report of speech scores that listener had for the speakers. In the example, this is a correlation between the heights of speakers and a listener's corresponding individual mean report of speech scores for each of those speakers. (Recall that each listener has a separate individual mean report of speech score for each speaker in his/her class). This correlation describes the relation between these speaker variables for this single listener. This calculation was repeated for all other listeners in the class. The set of these correlations, one correlation for each listener, describes the relationship between height of speaker and the report of speakers' speech for all the listeners in the class. For variables in this study, these correlations describe the relationship between variables describing speakers and the report of speakers' speech for each listener.

The next step was to calculate the median correlation within each set of correlations between one variable describing speakers and individual mean report of speech scores. In the height example, this corresponds to finding the median correlation in the class between speakers' height and the probabilities of listeners' reports of speakers' speech. The median describes the class' central tendency in listening patterns given a specific variable describing a speaker. The median in this example would describe the degree to which the class as a whole listened to speakers of different heights. For example it would answer this question: Did listeners on the whole report more speech as speakers' heights increased?

Next, box and whisker diagrams (see Erickson and Nosanchuk, 1977) were plotted. The vertical axis for the box and whisker plots comprised the range of correlations from -1.00 to +1.00. Horizontal lines were placed across the graph where the median correlation between a given variable and individual mean report of speech scores occurred. As well, horizontal lines were placed where the correlations at the 25th and 75th percentiles occurred. These horizontal lines were joined by vertical lines creating a box. The highest and lowest correlations were then plotted and vertical lines were drawn joining the top of the box to the highest score and the bottom of the box to the lowest score. These form the whiskers of the diagrams. Nine such plots were made, one box-and-whisker plot for each of the nine sets of correlations between variables describing speakers and individual mean report of speech scores within each class. Box and whisker diagrams were used to answer these questions: Which median correlation between a variable describing speakers and individual mean report of speech score was highest? Which median correlation between a variable describing speakers and individual mean report of speech score was lowest? By visual scanning, were there any appreciable differences among the diagrams in the range of correlations in the boxes? Were there any differences among the diagrams in terms of the range from highest to lowest correlations? Of these three descriptions of the box and whisker diagrams, (height of median correlation, range between 25th and 75th percentile and range from lowest to

highest correlation), were descriptions significantly different among academic, social and personal variables describing speakers? Box and whisker diagrams for all four classes appear in Appendix H.

Outliers as defined by Erickson and Nosanchuk (1977) were identified. An outlier was defined as a correlation that fell above or below the median correlation by more than one-and-a-half times the difference between the correlation at the 75th percentile and that at the 25th percentile. Patterns of descriptive data from the speakers represented by the outlying data points was insubstantial and could not be used to provide important explanations for their being outliers.

Next, correlations were then graphed. The range of correlations between a variable describing speakers and individual mean report of speech scores appeared on the y-axis. The x-axis comprised the ascending range of scores of listeners on the same variable describing speakers on the y-axis. The x-axis ranged from the lowest scores of listeners to the highest. The points plotted were the correlations between the variable describing the speaker and the individual mean report of speech score for listeners. Plotted points corresponded to the listener for whom the correlations had been calculated. This was done to see if regression analyses performed on the correlations plotted in this way would show practically important slopes and correlations.

Slopes of regression lines were examined to assess whether the median correlation between speaker's achievement and probability of listening to speakers was the best descriptor for listeners in the class. This analysis elaborates the median correlation (or other measure of central tendency) because the median, by its very nature, does not measure the dispersion of the distribution as much as it represents central tendency. Slopes of regression lines are slightly different descriptors of the relationship between speaker achievement and likelihood of listening to speakers as they take into account the range of achievement of listeners listening to those speakers.

Returning to the height example, all listeners in a class would be ranked on the x-axis in terms of height from shortest to tallest. The y-axis would correspond to the correlations between a listener's report of speakers' speech and the speakers' heights. Thus, for each listener one point would be plotted. A bivariate regression analysis of these plotted points was then performed. The slope of the regression helped answer this question: As listener height increased, was there a systematic change in listener attention patterns? In other words did tall listeners listen more to taller speakers? Did they listen less?

The final concern was whether changes in listener attention patterns at the extremes of the range of a given variable describing listeners e.g., listeners' height, were statistically significant. To examine this, confidence intervals were computed



for points on the regression line corresponding to the lowest and the highest predicted listener values on the horizontal axis. This was done by first transforming the predicted correlations for these two listeners into Fisher Z-scores. Then a confidence band was calculated following this formula:  $Z \pm 1.96 \{1/(N-3)\}$ . If the lower range of the interval for the higher Fisher Z-transformed correlation was above the higher range of the interval for the lower Fisher-Z transformed correlation, a statistically reliable difference was established.

Take the height example again. Suppose there were 46 students in the class. The shortest predicted listener in the class had a correlation between speaker's height and individual mean report of speech of .20. Suppose the tallest predicted listener had a correlation of .90. A confidence band was calculated for each of these correlations. The upper limit of the confidence interval for the shortest predicted listener's correlation of .20 is .50. The lower limit of the confidence interval for the tallest predicted listener's correlation of .90 is .63. Therefore the two intervals do not overlap and would be judged statistically reliably different. This would mean that tall listeners listen more and more to speakers as the speakers get taller and taller. Short speakers do the same. However tall listeners show this listening pattern reliably more predictably than short listeners as evidenced by the correlation of .90 versus .20.

Though an initial attempt was made to interpret the regression analyses according to these criteria, a major problem was discovered making both regression slope and confidence interval analyses uninterpretable. The variance of the variables describing speakers differed tremendously. So, for example, the range of the scale for the Metropolitan Achievement Test scores was from 0-60. The range of the scale for academic status as rated by the teacher was 0-1. When listeners were ranked on the x-axis in terms of their scores on each of these variables and correlations between speakers' scores on these variables and individual mean report of speech scores for speakers were plotted for each listener on the x-axis, slopes of the regressions could not be compared. An increase of 1 on the x-axis would take in the entire x-axis for listeners ranked in terms of academic status as rated by the teacher, but only 1/60 of the x-axis for listeners ranked in terms of Metropolitan Achievement Test scores. As the regression lines appeared meaningless for purposes of comparison, so did confidence intervals for values at the extremes of the regression lines.

An alternative statistic was used to determine important change in listener attention patterns as listeners ranked along the x-axis increased on a given variable. This was the higher order correlation. The higher order correlation is a correlation between two variables. The first variable is in itself a correlation between a status variable describing speakers and the individual mean report of speech scores. The second variable

is the same status variable used in the first correlation only  
it describes the listener for whom the first correlation was  
calculated.

#### IV. Results

In this chapter descriptors for the reporting of the correlations are explained. Scatterplot analyses are discussed. This includes discussions of median correlations between variables describing speakers and individual mean report of speech scores. For each variable describing students, higher order correlations between listener's scores on a variable on the one hand and on the other hand, the correlation between speakers' likelihood of being heard and their scores on that variable, are reported and discussed within each class. Summary descriptions of data collected within each class are included. The chapter concludes with a discussion of between-class differences in these summary descriptions.

##### Explanation of Descriptors for the Reporting of the Correlations

A correlation of .50 or above is reported here as a strongly positive correlation. At this cut-off point two correlated variables have 25% of their variance in common. A correlation of between .23 and .49 is reported as moderately positive. At the .23 cut-off two correlated variables have approximately 5% of their variance in common. A correlation of .00 to .22 is reported as positive. Parallel adjectives are applied to negative correlations falling in the same range of

absolute value. The statistical significance of a correlation coefficient is largely influenced by sample size. In this study specific interest was placed in within-class analyses where sample sizes were too small for analysis of statistical significance.

### Descriptive Statistics

Table 4 reports the means and standard deviations for all four classes on all variables. Scaling of all variables is discussed in Chapter 3.

Table 4

Means and Standard Deviations of All Variables  
In All Four Classes

Class/Variable	Bandy	Dankin	Mason	Parici
Class Mean Report of Speech	.18	.34	.20	.28
	.14	.15	.10	.13
Teacher Rating of Reading Ability	13.50	12.36	15.00	13.09
	7.65	6.70	8.50	7.53
MAT	45.15	45.64	48.03	49.87
	10.58	12.22	11.39	7.87
Teacher Status: Academic	.12	.14	.10	.13
	.24	.23	.17	.28
Peer Status: Academic	.12	.14	.11	.13
	.21	.21	.14	.14
Participation	.16	.19	.21	.19
	.18	.11	.18	.17
Teacher Status: Social	.12	.14	.10	.13
	.15	.14	.14	.18
Peer Status: Social	.12	.14	.11	.13
	.10	.09	.09	.09
Sex	.54	.59	.41	.48
	.51	.50	.50	.51
Self-Efficacy	44.42	44.32	47.24	49.13
	8.87	9.92	9.50	7.02

Note: Upper numbers are means  
Lower numbers are standard deviations

Mrs. Bandy's Class

Table 5 presents a list of all median correlations and all higher order correlations for all academic, social and personal variables in Mrs. Bandy's class.

Academic Variables

Teacher rating of reading ability. The median correlation between teacher rating of reading ability and individual mean report of speech scores is .36. This indicates that to a moderate degree, the average student listens more to speakers who have been rated more highly by the teacher on reading ability.

A practically important trend is observed from analysis of the higher order correlation. The moderately positive higher order correlation between the listener's rated reading ability on the one hand and, on the other hand, the correlation between speakers' likelihood of being heard and their teacher rated reading ability, is .43. This indicates that as listeners increase in teacher rated reading ability, there is a moderately increasing positive relationship between their report of a speaker's speech and that speaker's teacher rating of reading ability.

Table 5

Median Correlations and Higher Order Correlations  
Mrs. Bandy's Class

Variable	Median r	Higher Order r
Teacher Rating of Reading Ability	.36	.43
HAT	.30	.13
Teacher Status: Academic	.31	.10
Peer Status: Academic	.26	.24
Participation	.66	.32
Teacher Status: Social	.20	.16
Peer Status: Social	.04	-.10
Sex	.30	.45
Self-Efficacy	.38	.08



Metropolitan Achievement Test. In this class the median correlation between Metropolitan Achievement Test scores of speakers and individual mean report of speech scores is .30. Thus, to a moderate degree, the average student listens more to speakers with higher Metropolitan Achievement Test scores. This finding is similar to that for the teacher ratings of reading ability variable.

The higher order correlation of .13 is of no practical importance in analysing pupil attention patterns to discourse. As the higher order correlation for teacher ratings of reading ability shows a moderately positive relationship, it can be concluded that in this class more information describing attention patterns was derived from analyses of teacher ratings of reading ability than from the standardized Metropolitan Achievement Test scores.

Student academic standing as rated by the teacher and peers. Analyses of both student academic standing as rated by the teacher and academic standing as rated by peers are virtually the same. Median correlations between either the teacher's rating of speakers' academic status or academic standing as rated by peers and individual mean report of speech scores are .31 and .26, respectively. This indicates that to a moderate degree the higher the speaker's academic status as rated by the teacher or peers, the more likely his/her speech will be reported by listeners.

Furthermore, practically speaking, the higher order correlations indicate that students listen similarly to their peers regardless of their own academic status as rated by the teacher. The higher order correlation for academic ability as rated by the teacher is .10. However, the higher order correlation for academic ability as rated by peers of .24 indicates that as listeners increase in peer rated academic status, there is a moderately increasing positive relationship between their report of a speaker's speech and that speaker's peer rated academic status.

### Social Variables

Average frequency of participation. The median correlation between the speakers' average frequency of participation in class discussion and individual mean report of speech scores is .66, the highest median correlation for all variables in this class. To a strong degree this indicates that the higher a speaker's average frequency of participation, the greater the likelihood of student attention to his/her speech. The higher order correlation between listeners' average frequency of participation on the one hand and, on the other hand, the correlation between speakers' likelihood of being heard and their average frequency of participation is .32. In other words as listeners increase in average frequency of participation there is a moderately increasing positive relationship between their report of speakers' speech and speakers' average frequency of participation scores.

### Student social status as rated by the teacher and peers.

Neither median correlation nor higher order correlational analyses of these variables provide important information in understanding pupil attention patterns to class discourse in this class. The median correlation between the teacher's rating of speakers' social status as well as social status as rated by peers and individual mean report of speech scores are .20 and .04 respectively. The higher order correlations involving social status as rated by the teacher and social status as rated by peers are .16 for the former and -.10 for the latter.

### Personal Variables

Sex. The median correlation between sex and individual mean report of speech scores, .30, is moderately positive. This indicates that the children in this class regardless of sex, tend to report the speech of boys moderately more often than the speech of girls (recall that for analysis purposes, boys were coded "1" and girls were coded "0"). The higher order correlation is .45. This indicates that there is a moderately increasing relationship between sex and individual mean report of speech for boys as compared to girls.

Self-efficacy perception. The median correlation between the students' self-efficacy perception and individual mean report of speech scores, .38, shows that to a moderate degree the average student listens more to speakers with higher perceptions of self-efficacy. The higher order correlation is .08 and is of no practical importance. Thus, practically

speaking, listeners' own self-efficacy perception is not related to the correlation between a speaker's self-efficacy and the listeners' report of speech.

#### Mrs. Dankin's Class

Table 6 presents a list of all median correlations and all higher order correlations for all academic, social and personal variables in Mrs. Dankin's class.

#### Academic Variables.

Teacher rating of reading ability. Neither median correlation nor higher order correlation analyses of this variable provide important information for this study. The median of correlations between teacher rating of reading ability and individual mean report of speech scores is .05. The higher order correlation is .20.

Metropolitan Achievement Test. In this class the median correlation between Metropolitan Achievement Test scores and individual mean report of speech scores is .19. The higher order correlation is .39. This indicates that as the listeners' scores increase on the Metropolitan Achievement Test, there is a moderately increasing positive relationship between listeners' report of a speaker's speech and that speaker's Metropolitan Achievement Test score. This last finding shows that somewhat more information describing attention patterns was derived from analyses of Metropolitan Achievement Test scores than from teacher ratings of reading ability in this class.

Table 6

Median Correlations and Higher Order Correlations  
Mrs. Dankin's Class

Variable	Median r	Higher Order r
Teacher Rating of Reading Ability	.05	.20
MAT	.19	.39
Teacher Status: Academic	.06	-.05
Peer Status: Academic	.09	.27
Participation	.28	.14
Teacher Status: Social	.37	-.19
Peer Status: Social	.33	.05
Sex	.03	.33
Self-Efficacy	.10	-.08

Student academic standing as rated by the teacher and peers. The median correlation between the teacher's rating of speakers' academic status and individual mean report of speech scores is .06. The median correlation between academic standing as rated by peers and individual mean report of speech scores is .09. Neither is of practical importance. The higher order correlation for academic status as rated by the teacher indicates that students listen similarly, regardless of their own academic status as rated by the teacher. The higher order correlation, -.05, is of no practical importance either.

The higher order correlation for academic status as rated by peers is .27. Practically speaking this shows that there is a moderately increasing positive relationship between listeners' report of a speaker's speech and that speaker's peer rated academic status.

#### Social Variables.

Average frequency of participation. The median correlation between the speakers' average frequency of participation in class discussion and individual mean report of speech scores is .28. This indicates that to a moderate degree the higher a speaker's average frequency of participation, the greater the likelihood of student attention to his/her speech. The higher order correlation is .14 and is of no practical importance.

Student social status as rated by the teacher and peers. The median correlation between the teacher's ratings of social status as well as social status as rated by peers and individual

mean report of speech scores are .37 and .33 respectively. They indicate that, to a moderate degree over all listeners, the higher the speaker's social status as rated by the teacher, the more likely his/her speech will be reported. Also, to a moderate degree, the higher the speaker's social status as rated by peers, the more likely his/her speech will be reported. The higher order correlations for these variables are of no practical importance. The higher order correlation is  $-.19$  for social status as rated by the teacher and  $.05$  for social status as rated by peers.

#### Personal Variables.

Sex. The median correlation between sex and individual mean report of speech scores,  $.03$ , is of no practical importance. The higher order correlation is  $.33$ . This correlation indicates that there is a moderately increased relationship between sex and individual mean report of speech for boys as compared to girls.

Self-efficacy perception. Neither correlation analysis for self-efficacy perception is of practical importance in this class. The median correlation between the speakers' self-efficacy perception and individual mean report of speech scores is  $.10$ . The higher order correlation is  $-.08$ .

### Mrs. Mason's Class

Table 7 presents a list of all median correlations and all higher order correlations for all academic, social and personal variables in Mrs. Mason's class.

#### Academic Variables.

None of the median correlation or higher order correlational analyses for academic variables in this class prove to be of practical importance except for the Metropolitan Achievement Test score variable. What follows is a report of the median correlations and the higher order correlations for all academic variables. The practical importance of the higher order correlation for the Metropolitan Achievement Test score variable is discussed at the end of this section.

The median correlations are .09 between teacher rating of reading ability and individual mean report of speech scores, .12 between Metropolitan Achievement Test scores and individual mean report of speech scores, and .06 between academic standing as rated by both the teacher and peers and individual mean report of speech scores. The higher order correlations are -.03 for teacher rating of reading ability, -.36 for Metropolitan Achievement Test scores, .11 for academic standing as rated by the teacher and -.07 for academic standing as rated by peers.



Table 7

Median Correlations and Higher Order Correlations  
Mrs. Mason's Class

Variable	Median r	Higher Order r
Teacher Rating of Reading Ability	.09	-.03
MAT	.12	-.36
Teacher Status: Academic	.06	.11
Peer Status: Academic	.06	-.07
Participation	.30	-.06
Teacher Status: Social	.16	-.15
Peer Status: Social	.21	-.06
Sex	.12	.52
Self-Efficacy	.04	-.39

Overall, then, in terms of academic variables only the higher order correlation for Metropolitan Achievement Test scores provides useful information in describing listener attention patterns in this class. According to data gathered on Metropolitan Achievement Test scores, as the listener increases on these scores, there is a moderately increasing negative relationship between listeners' report of a speaker's speech and that speaker's Metropolitan Achievement Test score. In this class, then, more information describing attention patterns is derived from Metropolitan Achievement Test scores than from any other academic variable.

#### Social Variables.

Except for the analysis of the median correlation between the speakers' average frequency of participation in class discussion and individual mean report of speech scores, none of the median or higher order correlational analyses of social variables provide practically important information. The median correlation between speakers' variables and individual mean report of speech scores are .30 for average frequency of participation, .16 for social standing as rated by the teacher and .21 for social standing as rated by peers. This indicates only that, to a moderate degree, the higher a speaker's average frequency of participation, the greater the likelihood of listener attention to his/her speech.

The higher order correlation for average frequency of participation is  $-.06$ . The higher order correlation for social

status as rated by the teacher is  $-.15$ . It is  $-.06$  for social status as rated by peers. In other words, listening patterns are not dependent on the listeners' average frequency of participation or social standing as rated by either teacher or peers.

#### Personal Variables.

Sex. The median correlation between sex and individual mean report of speech scores,  $.12$ , is only slightly positive. This indicates that the average listener in this class does not report the speech of either sex more often than the other. The higher order correlation is  $.52$ . This indicates that there is a strongly increased relationship between sex and individual mean report of speech for boys as compared to girls.

Self-efficacy perception. The median correlation between the students' self-efficacy perception and individual mean report of speech scores,  $.04$ , shows that the average listener does not listen more to speakers with higher self-efficacy perception scores. The higher order correlation between listeners' self-efficacy perception on the one hand and, on the other hand, the correlation between speakers' likelihood of being heard and their self-efficacy perception is  $-.39$ . This indicates that as the listener increases in self-efficacy perception, there is a moderately increasing negative relationship between listeners' report of a speaker's speech and that speaker's self-efficacy perception.

### Mrs. Parici's Class

Table 8 presents a list of all median correlations and all higher order correlations for all academic, social and personal variables in Mrs. Parici's class.

#### Academic Variables.

None of the analyses of median correlations or higher order correlations in this class show practically important results, except for the analysis of the median correlation between academic status as rated by the teacher and individual mean report of speech scores and the higher order correlation for the Metropolitan Achievement Test scores. The median correlation between teacher rating of reading ability and individual mean report of speech scores is .20. The median correlation between Metropolitan Achievement Test scores and individual mean report of speech scores is  $-.04$ . The median correlation between academic status as rated by the teacher as well as by peers and individual mean report of speech scores are .31 and .22 respectively. This indicates that, to a moderate degree, the average listener is more likely to report the speech of higher teacher rated academic status speakers over lower ones. None of the higher order correlations are practically important. The higher order correlation for teacher ratings of reading achievement is  $-.06$ . The higher order correlation for Metropolitan Achievement Test scores is  $-.27$  and indicates that there is a moderately increasing negative relationship between the listeners' report of a speaker's speech and that speaker's

Metropolitan Achievement Test score. The higher order correlation for academic standing as rated by the teacher is  $-.09$  and for academic status as rated by peers is  $-.03$ . In other words, listener listening patterns are not dependent on listener standing on any of the academic variables.

Table 8

Median Correlations and Higher Order Correlations  
Mrs. Parici's Class

Variable	Median r	Higher Order r
Teacher Rating of Reading Ability	.20	-.06
MAT	-.04	-.27
Teacher Status: Academic	.31	-.09
Peer Status: Academic	.22	-.03
Participation	.36	.15
Teacher Status: Social	.10	-.44
Peer Status: Social	-.08	.24
Sex	.06	.64
Self-Efficacy	.23	.59

## Social Variables.

Average frequency of participation. The median correlation between the speakers' average frequency of participation in class discussion and individual mean report of speech scores is .36, the highest median correlation for all variables in this class. To a moderate degree this indicates that the average listener is more likely to listen to speakers with higher average frequency of participation scores over lower ones. The higher order correlation for average frequency of participation is .15. In other words, listening patterns are not related to the listener's own average frequency of participation.

Social status as rated by the teacher and peers. The median correlation between the speakers' social status as rated by the teacher as well as social status as rated by peers and individual mean report of speech scores are .10 and -.08 respectively. They indicate that the average listener does not attend more often to speakers with higher teacher or peer rated social status. The higher order correlation for social status as rated by the teacher is -.44. There is a moderately increasing negative relationship between the listeners' report of a speaker's speech and that speaker's teacher rated social status. The higher order correlation for social status as rated by peers is .24. As listeners increase in peer rated social status there is a moderately increasing positive relationship between listeners' report of a speaker's speech and that speaker's peer rated social status.

### Personal Variables.

Sex. The median correlation between sex and individual mean report of speech scores, .06, is of no practical importance. The higher order correlation is .64. There is a strongly increased relationship between sex and individual mean report of speech for boys as compared to girls.

Self-efficacy perception. The median correlation between the students' self-efficacy perception and individual mean report of speech scores, .23, shows that the average listener reports the speech of higher self-efficacious speakers over lower ones to a moderate degree. The higher order correlation is .59. This indicates that as the listener increases in self-efficacy perception, there is a strongly increasing positive relationship between listeners' report of a speaker's speech and that speaker's self-efficacy perception.

### Summary of Within Class Findings

Mrs. Bandy's Class. In Mrs. Bandy's class the average student listens more to speakers with several academic and personal attributes but only one social attribute. In this class, to a moderate degree, the average student listens more to speakers with higher teacher ratings of reading ability, higher Metropolitan Achievement Test scores, and higher teacher or peer rated academic status. As well, s/he listens moderately more to males than to females and to students with higher self-efficacy



perception. Finally, the average student listens strongly more to speakers who display higher average frequency of participation.

The higher order correlations show less predominance of academic and personal attributes. As listeners increase in teacher ratings of reading ability or peer ratings of academic status, to a moderate degree, they show an increasingly greater likelihood of reporting the speech of higher teacher rated reading ability speakers or higher peer rated academic status speakers. As listeners increase in average frequency of participation, to a moderate degree they also show an increasingly greater likelihood of reporting the speech of more frequently participating speakers. Finally, there is a moderately increased relationship between sex and individual mean report of speech for boys as compared to girls.

Mrs. Dankin's Class. In Mrs. Dankin's class the average student listens more to speakers with certain social attributes. In this class, to a moderate degree, the average student listens more to speakers with higher teacher and peer rated social status as well as to more frequent participators. However, the higher order correlations do not show this trend to be magnified as listeners increase in their ratings on social variables. On the contrary, higher order correlations reveal important relations in the analysis of two academic and one personal variable. As listeners increase in Metropolitan Achievement Test scores or peer ratings of academic status, to a moderate degree they show

an increasingly greater likelihood of reporting the speech of speakers with higher Metropolitan Achievement Test scores or peer ratings of academic status. As well, there is a moderately increased relationship between sex and individual mean report of speech for boys as compared to girls.

Mrs. Jason's Class. In this class the average student listens moderately more to speakers who display higher average frequency of participation. The higher order correlations show some contrasts to trends in the previous two classes. As listeners increase in Metropolitan Achievement Test scores they are increasingly moderately less likely to report the speech of speakers with higher Metropolitan Achievement Test scores. Similarly as listeners increase in self-efficacy perception they are increasingly moderately less likely to report the speech of speakers with higher self-efficacy perception. Again, in this class, there is a strongly increased relationship between sex and individual mean report of speech for boys as compared to girls.

Mrs. Parici's Class. In this class the average student listens moderately more to speakers displaying one academic and one social attribute. The average student listens moderately more to speakers with higher teacher rated academic status. As well, the average student listens moderately more to speakers who display higher average frequency of participation and have higher self-efficacy perception. The higher order correlations show at least two reversals from trends in the first two classes. As

listeners increase in Metropolitan Achievement Test scores or in teacher rated social status, they are increasingly moderately less likely to report the speech of speakers with higher Metropolitan Achievement Test scores or higher teacher rated social status scores. As listeners increase in peer rated social status they are increasingly moderately more likely to report the speech of higher peer rated social status speakers. In this class there is a strongly increased relationship between sex and individual mean report of speech for boys as compared to girls. As well, as a listener increases in self-efficacy perception, s/he is increasingly strongly more likely to report the speech of speakers with higher self-efficacy perception.

#### Discussion of Inter-Class Similarities and Differences

No one class shows the same picture of pupil attention to classroom discourse of peers as functions of the academic, social and personal variables describing speakers and listeners. There are certain findings that are common across all classes while there are others that serve to differentiate clearly one class' listening patterns from the next's. In this section inter-class similarities will be described. Then inter-class differences, first in terms of median correlations and then in terms of higher order correlations, will be presented.

Inter-class Similarities. Listeners reported the speech of speakers when described by average frequency of participation

and sex in some similar ways across all four classes. In all classes except Mrs. Bandy's the average listener listened moderately more to more frequent participators. In Mrs. Bandy's class the average listener listened more to frequent participators to a strong degree. Second, in all classes there is an increased relationship between sex and individual mean report of speech for boys as compared to girls. This was true to a moderate degree in Mrs. Bandy's and Mrs. Dankin's classes and to a strong degree in Mrs. Mason's and Mrs. Parici's classes. Third, an examination was made of box and whisker plots for all median correlations exceeding .23 between variables describing speakers and individual mean report of speech scores. The interquartile range of values of correlations between the 75th and the 25th percentiles exceeded .25 in only one instance. In Mrs. Dankin's class the interquartile range of .25 was exceeded for peer rated social status. In other words, central tendencies described by the medians discussed fall within a clearly defined and limited range for almost all practically important correlations. The median correlations are fairly accurate representations of the correlations. And fourth, the analyses of outlying data show that some students in all classes are consistently outliers, exhibiting unusually low or high correlations between an academic, social or personal variable and individual mean report of speech scores. However no data were collected on any of these students that might indicate a reason for their appearing consistently as outliers.

### Inter-Class Differences.

Median correlations. Only in Mrs. Bandy's and Mrs. Parici's classes did the average student listen moderately more to speakers with certain academic attributes. In Mrs. Bandy's class the average listener was attentive to the speech of speakers with higher scores in all academic status variables. In Mrs. Parici's class only academic status as rated by the teacher served to describe speakers who drew moderately more average listener attention.

Aside from average frequency of participation whose importance has already been discussed, social variables served to describe speakers who drew moderately more average listener attention only in Mrs. Dankin's class. In that class the average student listened moderately more to speakers with higher teacher and peer rated social status over those with lower such status on these variables.

The average listener reported moderately more speech of speakers described by the personal variables in Mrs. Bandy's and Mrs. Parici's classes. In Mrs. Bandy's class both variables were of moderate importance. While in Mrs. Parici's class only self-efficacy was of moderate importance. Of note is the fact that of the 14 median correlations exceeding .23, seven occur in that class. Also of note is that only one occurs in Mrs. Mason's class while the other classes have three each. Clearly, in certain classes patterns of average listener attention are more discernible.

Higher order correlations. On their own, the higher order correlations describe a different pattern of factors describing listener attention than did the median correlations. Two higher order correlations of the academic variables figure importantly in all four classes but none exactly duplicates the findings of the other. In Mrs. Bandy's and Mrs. Dankin's classes, as listeners increase on one of the reading achievement variables, they become moderately more likely to report the speech of increasingly higher reading achievers. In Mrs. Mason's and Mrs. Parici's classes the opposite is the case in the Metropolitan Achievement Test measure. In these classes as listeners increase on Metropolitan Achievement Test scores they are increasingly moderately less likely to report the speech of higher Metropolitan Achievement Test scorers. Furthermore over all four classes, when total number of practically important median or higher order correlations are taken into account, neither teacher rating of reading achievement nor Metropolitan Achievement Test scores prove to be more helpful in describing listener attention patterns. In both Mrs. Bandy's and Mrs. Dankin's classes, as listeners increase in peer rated academic status they become increasingly moderately more likely to report the speech of higher peer rated academic status speakers.

One higher order correlation of the social variables figures importantly in Mrs. Bandy's class and two do in Mrs. Parici's class. In Mrs. Bandy's class it is average frequency of participation while in Mrs. Parici's they are teacher and peer

rated social status.

Aside from sex, whose higher order correlation has already been described, the higher order correlation for self-efficacy perception is of moderate practical importance in Mrs. Mason's class and strong practical importance in Mrs. Parici's class. However the findings in these two classes are opposite. In Mrs. Mason's class as listeners increase in self-efficacy perception, there is a moderately increasing negative relationship between their report of a speaker's speech and individual mean report of speech for that speaker. As listeners increase in self-efficacy perception in Mrs. Parici's class, their report of the speech of speakers with higher self-efficacy perception increases.

The variables of importance in median correlation analyses were not always the same as those in higher order correlation analyses within a given class. Neither median correlations nor higher order correlations of practical importance were the same from class to class. Therefore it can be concluded that the context i.e., classroom, within which a student listens has at least moderate impact on how that student listens, though the impact of context will be different for students occupying different academic and social strata.

## V. Discussion

In chapter one, six questions that reiterated and extended the concerns appearing in the Morine-Dershimer et al. (1981) study were presented. They were:

1. On the average, do listeners report hearing the speech of speakers who occupy higher status on academic variables?
2. Do listeners who have various academic status characteristics attend differentially to their peers as a function of their peers' academic status?
3. On the average, do listeners report hearing the speech of speakers who occupy higher status on social variables?
4. Do listeners who have various social status characteristics attend differentially to their peers as a function of their peers' social status?
5. On the average, do listeners report hearing the speech of speakers who occupy higher status on personal variables?
6. Do listeners who have various personal status characteristics attend differentially to their peers as a function of their peers' personal status?

In this chapter these questions are addressed in light of current findings. Comparisons are made with results in the original study. Conclusions regarding student cognitive mediation of discourse within classes are stated with particular reference to the literature on context of learning. Limitations



of the current study are reviewed and implications for future research emphasizing the impact of classroom organizational structure on pupil attention to discourse are presented.

#### Attention to Academic Status

It should be noted that in this study the analysis procedures to assess patterns of attention of listeners with different status on a given variable to speakers with different status on those variables differed from the original study. Morine-Dershimer et al. used a blocking approach in their analysis. They analysed pupil attention within subgroups by blocking listeners and speakers into three groups on each variable. Those subgroups were composed of students who were of high, middle or low rank on a given variable. In the replication each individual listener's attention pattern was analysed by examining the changing relationship between a speaker's scores on a descriptive variable and listener report of speaker's speech as listeners increased on that descriptive variable. Thus findings in the original and those in the replication are not completely comparable.

In two classes academic status of speakers was related to average listener attention to discourse. In Mrs. Bandy's class the average pupil listened moderately more to speakers who had higher standing on all academic variables. In Mrs. Parici's class, the average pupil listened moderately more to speakers

with higher teacher ratings of academic status. Academic variables describing speakers were not related to listener attention in either Mrs. Dankin's or Mrs. Mason's classes.

In all classes, as listeners increased in standing on academic variables certain relationships between their report of speakers' speech and speakers' ratings on those same variables were of moderately increasing importance. However the relationships were not always positive. Nor were the same academic variables of importance in each class.

Morine-Dershimer et al.'s finding that over all listeners, speech of high reading achievers was reported more often than the speech of all other speakers was essentially corroborated in one class in the replication. Similarly, the original finding that high reading achievers listened substantially more to themselves than did any other subgroup of reading achievers was only moderately substantiated in two classes. In those two classes there was a moderately increasing positive relationship between listeners' report of a speaker's speech and that speakers' reading ability.

The original finding that pupils did not attend significantly more to any subgroup as defined by status with the teacher was corroborated in only two of the four classes in the replication. In the replication, status as rated by the teacher was divided into an academic and a social variable. In both Mrs. Bandy's and Mrs. Parici's classes, the average pupil listened moderately more to speakers with higher academic status as rated

by the teacher.

Finally, the original finding that pupils did not attend significantly more often to any peer status subgroup was not substantiated in two classes. Again, in the replication, status with peers was divided into an academic and a social variable. In Mrs. Bandy's class the average pupil listened more to speakers with higher academic status as rated by peers. In both Mrs. Bandy's and Mrs. Dankin's classes, as listeners increased in academic status as rated by peers, they became increasingly more likely to report the speech of higher peer rated academic status speakers over lower ones.

In short, in terms of academic variables, the picture painted by Morine-Dershimer et al. (1981) is not as clear in the replication as it was in the original. Academic status of speakers does have a bearing on how listeners mediate classroom discourse. However the impact of academic status seems to be classroom specific. In some classes the academic status of speakers appears importantly related to pupil report of discourse while in others it does not.

#### Attention to Social Status

In the original study it was found that listeners reported the speech of frequent participators more often than average participators. This was particularly so for the subgroup of listeners who were themselves frequent participators in class

discussions. However Morine-Dershiner et al. also found that pupils in general, and listeners who were frequent participators in particular, reported the comments of pupils low in frequency of participation in the same proportions as the comments of pupils high in frequency of participation. Using a 3 x 2 x 2 table (frequency of participation x sex x reading achievement) Morine-Dershiner et al. (1981) suggested that low reading achievers were most apt to fall in the middle range of frequency of participation. They also noted a subgroup of girls who were low in frequency of participation but high in entering reading achievement.

In all classes in the replication the average pupil listened more to frequent participators. This was moderately the case in three of the experimental classes and strongly the case in Mrs. Bandy's class. Therefore it can be concluded that the finding in the original study that listeners reported the speech of frequent participators more often than average participators was essentially corroborated in the replication. Because all median correlation analyses for frequency of participation were positive and at least of moderate practical importance, it can be concluded that the finding that infrequent participators' speech was reported as often as frequent participators' speech was not corroborated in any of the classes in the replication. Having found this pattern in the original study, Morine-Dershiner examined reasons as to why infrequent participators' speech might have been reported frequently.

Because no such finding occurred in the replication, examination of why infrequent participators' speech might be reported frequently was not done in the replication. The finding by Morine-Dershiner et al. that pupils who themselves were frequent participators listened more to frequent participators than any other subgroup of listeners was corroborated to a moderate degree only in Mrs. Bandy's class. Aside from this one social variable, the average listener was attracted to the speech of speakers having high social status in only Mrs. Dankin's class. Only in Mrs. Bandy's and Mrs. Parici's classes did listeners with increasing status on social variables show differential attention patterns to speakers described by such variables.

In the original study, pupils did not attend significantly more to any subgroup as defined by status with teacher or peers. As already discussed, status with teacher and peers was divided into academic and social categories in the replication. Again, findings in the original with regard to status with teacher or peers were not corroborated in two of the classes, Mrs. Dankin's and Mrs. Parici's, when social status was defined separately from academic status. In Mrs. Dankin's class the average listener listened moderately more to speakers with higher social status as rated by the teacher or peers. In Mrs. Parici's class, as listeners increased in social status as rated by the teacher they became moderately less likely to report the speech of higher teacher rated social status speakers. In that class, as listeners increased in peer rated social status they became

increasingly moderately more likely to report the speech of higher peer rated social status speakers.

Again, in terms of social variables the picture painted by Morine-Dershiner et al. (1981) is not as clear in the replication as it was in the original. One thing seems certain. Frequent participators' speech is generally attended to. However, the impact of social status on listener attention patterns seems, overall, to be classroom specific. In one class the average listener did attend to speakers with higher social status moderately more than those without such status. In another class, as listeners increased in social status they showed increased attention to speakers with parallel status.

#### Attention to Personal Status

In all classes there is an increased relationship between sex and individual mean report of speech for boys as compared to girls. This was moderately the case in two classes and strongly the case in the two others. In only one class did the average listener (boys and girls taken together) listen more to boys than to girls. In no class did the average pupil listen to girls more than to boys.

In the original study, Morine-Dershiner et al. (1981) found that girls listened to girls more often than to boys. As such, the finding in the original was not substantiated in the replication.

Self-efficacy perception and its impact on listener attention patterns was not examined in the original study. In the replication it was found that in two classes, Mrs. Bandy's and Mrs. Parici's, the average listener does listen moderately more to speakers with higher self-efficacy perception. As listeners increased in self-efficacy perception they became moderately less likely to report the speech of speakers with higher self-efficacy perception in Mrs. Mason's class and increasingly strongly more likely to report the speech of speakers with higher self-efficacy perception in Mrs. Parici's class.

Again, the effects of self-efficacy perception on pupil mediation of classroom discourse seem to be classroom specific.

### Conclusions

Morine-Dershimer et al. attempted to demonstrate that pupils were displaying attention patterns that would enhance their chances for academic success. They justified their conclusion by pointing out that, generally, students are attracted to speakers with high reading achievement. If other factors described speakers who drew listener attention, such factors (e.g. infrequent participation) were positively related to reading achievement and hence supported Morine-Dershimer et al.'s conclusion that students listened to speakers who would better enable them to obtain academic success. In the case of

listener attention to infrequent participators for example, Morine-Dershiner et al. argued that such attention was to a subgroup of academically successful, infrequently participating girls.

The findings in the replication essentially do not corroborate Morine-Dershiner et al.'s conclusions regarding listener attention to academically successful speakers. It was found that listeners in the replication, as in the original, listen to frequent participators. It was also found that there is an increased relationship between sex and individual mean report of speech for boys as compared to girls. However all other findings appear to be classroom specific. Though findings in the original study may have been corroborated in one class, they were not necessarily corroborated in another. Certainly the conclusion that students attend to other students in order to obtain academic success is suspect in view of findings in the replication.

The questions then become, are students in fact mediating classroom discourse and, if so, are they doing so in any systematic ways that are generalizable across classrooms? It seems certain that students are actively mediating classroom discourse. There are important relationships between listener report of speech and variables describing speakers. As such, pupils are listening selectively to speakers in their classrooms.



Doyle (1979) contends that students exchange performance for grades. This contention is tenuous given current findings. If students were in fact exchanging performance for grades it would be assumed that they would mediate classroom discourse in such a way as to attend to academically successful speakers. This was not consistently the case in the replication.

But, to repeat, the fact that there are not random variations in pupil attention patterns but important correlations within the various classes is likely to reflect systematic differences in the nature of the social systems within those classes. There is room for speculation as to the roots of these systematic differences. It is likely that the source of sanctioned power within the classroom, namely the teacher, determines the environment within which students listen. Determination of the environment is, however, not done in isolation but is the result of a reciprocity between the student culture within the classroom and teacher behaviour (Winne & Marx, 1977). There are aspects of classroom organization that likely affect class environment, the social system within the classroom and hence listener attention patterns.

Rosenholtz and Wilson (1980) argue that the organizational facets of classroom life order the experiences and meanings available to classroom actors. Organizational facets were only minimally controlled in the replication study. Teachers were given lessons to teach and told to teach them using

teacher-centered recitation type lessons. However, the characteristics that Rosenholtz and Wilson (1980) state are the content of socialization that may determine modes of cognitive mediation (i.e., task differentiation, grouping practices, teacher evaluation practices, and student autonomy) were only controlled in the three experimental lessons. Classroom dimensionality, which Rosenholtz (1982) has pointed out can be a major factor in determining such cognitively mediated variables as attributed social power, was not controlled. Nor was history, which Doyle (1980) described as having the power to transform tasks in classroom environments and implicitly the cognitive mediation of such tasks, controlled in this study.

Other factors may be creating the social system within the classroom. The amount of power attributed to the source of sanctioned power in the class may in fact alter the effects of classroom organization. Variance in student subcultures caused by differences in socioeconomic status of students, different ethnicities or different school locations may affect class environments and hence pupil attention patterns. What are pupil attention patterns in classes where teachers are viewed by students as powerful as opposed to classes where teachers are viewed as ineffectual? Do black students, for example, respond differently to discourse than east Indian students, children from wealthy families differently than children from poorer families, or children from urban settings differently than children from rural settings?

The picture is complex and varied and, as such, conclusions regarding overall student mediation of classroom discourse are elusive. Average listeners were attracted to speakers with high academic and personal attributes in Mrs. Bandy's and Mrs. Parici's classes and high social attributes in Mrs. Dankin's class. In Mrs. Mason's class only frequent participators drew average listener attention to a moderate degree. As listeners increased in status on any of the variables, they showed differential attention patterns to speakers described by all three categories of variables in Mrs. Bandy's and Mrs. Parici's classes and the academic and personal categories in Mrs. Dankin's and Mrs. Mason's classes, though differential attention patterns within these categories were not replicated from class to class.

What is necessary is a longer term study in which the history of within-class task differentiation as described by Rosenholtz and Wilson (1980) is examined. Such was not done in either the original or the replication. In the replication the only requirement was that teachers be able to teach teacher-centered recitation type lessons and that they use such a mode of teaching in their experimental lessons. An assessment of classroom dimensionality, i.e. the history of task differentiation, grouping practices, teacher evaluation practices and student autonomy, would assist in disentangling the maze of variation between classes in listener attention patterns as found in the replication. If viewed in terms of the

literature on classroom dimensionality, differences in listener attention patterns among classes might be examined according to the following questions. Was Mrs. Bandy's class a unidimensional one in which the teacher's evaluation of students was public and students were largely passive observers coming to similar conclusions about the degree of academic ability of their peers and the degree to which they should listen to their peers? Was the same the case in Mrs. Parici's class only to a lesser extent? Was Mrs. Dankin's class a multidimensional one where social attributes were related to average listener attention? Were multidimensional factors at play in Mrs. Mason's class where only frequent participation was related to average listener attention? Similar questions could be posed regarding the effects of classroom dimensionality on listener attention patterns as listener status on given variables changes.

Other limitations of the present study should be addressed in a future one. Research assistants should be employed to ask students individually to report the discourse they heard. This could prevent students from reporting speech of speakers not present or speakers who did not speak. It could also prevent the over-reporting of speech events. More descriptive data should be included on each of the pupils so outliers in analyses can be examined in greater depth. An hypothesis not examined was whether or not students reported hearing speakers who spoke at the beginning of lesson segments or those who spoke closest to the time of the reporting of discourse. An examination of the

effects of sanctioned vs. attributed teacher power on listener attention might add to our understanding of the phenomenon. Investigation of ethnicity, school location, and student socioeconomic status might also elucidate the complexities of social systems within classrooms and their impact on pupil attention patterns.

## VI. Appendices

### Appendix A

STANFORD UNIVERSITY - SCHOOL OF EDUCATION  
 SCRDT Program on Teaching Effectiveness  
 RECITATION STUDY OBSERVATION SYSTEM

Teacher: Mrs. Bandy  
 Coder: L. Prupas  
 Date: April 29, 1982  
 Start Time: 9:15 A.M.  
 Stop Time: 9:25 A.M.

Class: Grade 6  
 Session: Practice Page 1  
 of 1

	1	2	3	4	5	6	7	8	9
*****									
TEACHER STRUCTURING									
*****									
Reviewing									
Stating Objectives	3C								
Outlining	5B								
Transitions	3B	33B							
Important Points									
Summarizing									
*****									
Teacher Presenting	25B								
Information									
*****									
TEACHER SOLICITING									
*****									
Lo Questions	1	33A	42	50	70	74			
Hi Questions	3D	27	33C	62					
*****									
STUDENT TALK									
*****									
Student Response	4	6	8	10	12	14	16	18	20
Student Response	22	24	26	28	30	32	34	39	41
Student Response	43	45	47	49	51	53	55	57	59
Student Response	61	63	65	67	69	73	75		
Student Question	2								

Student Comment	71								
*****									
TEACHER REACTING									
*****									
Gives Correct Answer	3A   35								
Praise									
Neutral Feedback									
"No"									
"No" + Reason									
Redirecting	38   72								
Probing	11   15	25A   29	40   44	46   48	52				
Probing	54   58	64   66	68						
Prompting	31   37	56   60							
Writing Student Ideas	5A   7	9   13	17   19	21   23					
*****									
Unclassifiable									
*****									

Note: Numbers represent utterances.  
 Letters represent parsing of utterances into sentences.

Sample Transcript--Mrs. Bandy's Class

1. (T) Yes.

2. (S) Did you get that yearbook, that forest thing yesterday or what?

3. (T) No. It's been here for three months, sitting on the side shelf. Nobody took it off the shelf. That's the way we get things noticed--when we take a look there. We get one every quarter.

Last night I was marking your reading notebooks. I've made a list of people who'll keep me company at 3:00 P.M. because a) they didn't finish their work or b) they weren't doing the appropriate activities yesterday. And I thought, well eventually we'll be doing the individualized reading programme and there's a variety of vocabulary activities that some people will choose to do. Yesterday S. and L.E. did a vocab. activity. Now I'd like you to give me suggestions for vocabulary activities if you're in an individual reading programme. What can you do with new words you learn in a novel?

4. (S) A crossword.

5. (T) A crossword, E. We'll come back and we'll all give definitions for these things in a moment because sometimes we have to have them explained. P.

6. (S) Word search.

7. (T) A word search. Anyone else?

8. (S) You can make up a poem.

9. (T) N?



10. (S) (inaudible)
11. (T) I don't understand.
12. (S) Put things down and see who can say them.
13. (T) Oh, I see, a pronunciation list. R?
14. (S) After you've finished reading you could write another story sort of like the first but on another subject. If the story was science fiction, you could write fantasy.
15. (T) What does that have to do with vocabulary and learning new words? Help me to understand.
16. (S) How to use it when you're writing the story.
17. (T) Ah, I'll put your suggestion down and maybe you can explain a little better.
18. (S) Write them in a sentence.
19. (T) P?
20. (S) Just write the meaning.
21. (T) Definitions. J?
22. (S) Just look at one and look it up in the dictionary and then learn it in your head.
23. (T) Anything else.
24. (S) Write out questions.
25. (T) How is that going to help me learn the vocabulary? These are activities that'll help us learn the vocabulary. Do you want to take back your answer? N?
26. (S) Like she said questions and what she means maybe is how you could use them in sentences.
27. (T) Why don't you take a combination of the two and I think

you can tell me. I could take a list of words and I can find my definitions and what sort of activity could I make up? It's not a crossword. It's another kind of activity.

28. (S) Match the word with the definition.

29. (T) Matching game. More. Who knows what it is.

30. (S) (Inaudible)

31. (T) Say it louder please.

32. (S) Scrabble.

33. (T) How many of you have played a game with baseball terms in scrabble? These are some suggestions for vocabulary activities and I'm going to call on you now to explain to me what is involved in the job. We have a crossword. Who can tell me what does a crossword ask you to do?

34. (S) Find out words in rows.

35. (T) You have to put words in rows but you have to do something else. P?

36. (S) You have to answer the question and put it into boxes.

37. (T) Add to that Gary. I think you put your hand up there.

38. (T) The word has to go in a space. Can anyone add to what these three people have said?

39. (S) You sort of like have a cross and you put what you see in the window and would say like "baseball cards" so you put baseball cards in one down.

40. (T) So you're doing it by \_\_\_\_\_. Who'd like to say that word?

41. (S) Context.

42. (T) And what does it mean? Some of you have done a whole

bunch of exercises on context.

43. (S) Sort of read what's around it.

44. (T) It fits in the sentence. Remember you had a choice of two words that fit in the sentence. Remember you could do a crossword by context or what's another way you could do a crossword? They don't just give you, "Benjie threw a \_\_ out the window." What's the other way?

45. (S) They can give you some clues.

46. (T) Clues. And what's the other way?

47. (S) Definitions.

48. (T) Definitions. Under clues, S. has mentioned one already.

What was one?

49. (S) When you have a short word.

50. (T) What are short words called?

51. (S) Abbreviations.

52. (T) Abbreviations. What other things. H?

53. (S) When you give a word that means the same thing.

54. (T) What do we call a word that means the same as another word?

55. (S) A synonym.

56. (T) We have abbreviations, synonyms. Suppose the word was hot and I put down cold.

57. (S) Opposites.

58. (T) Opposites. What's the big people's word for opposites?

A?

59. (S) Antonyms.

60. (T) Right. Then the second word was blue. And I put down for b-l-u-e, b-l-e-w. K?

61. (S) Homonyms.

62. (T) Homonyms. So those are the examples of clues for definitions. Somebody explain what a word search is.

63. (S) You have to find the meaning of words.

64. (T) Can anyone add to what T said?

65. (S) On a separate sheet it tells where to find the word.

66. (T) Anything to add? K?

67. (S) Put words in boxes and put other words around them.

68. (T) R?

69. (S) Sometimes it's similar to a crossword.

70. (T) Does anyone need an explanation of what a poem is? Who said list of words? J., do you want to explain what a list of words is?

71. (S) Not me.

72. (T) Oh, I'm sorry. N?

73. (S) To make a list put down the definition and write a sentence for it.

74. (T) Rewrite yours, R. How many understood what R. was saying? How many did not? Do you want to tell me how this can help us learn vocabulary.

75. (S) Well, when you write a story you have to know what all the words mean before you can put it in the story or you'll have it wrong.

STANFORD UNIVERSITY - SCHOOL OF EDUCATION  
 SCRDT Program on Teaching Effectiveness  
 RECITATION STUDY OBSERVATION SYSTEM

Teacher: Mrs. Dankin  
 Coder: L. Prupas  
 Date: April 30, 1982  
 Start Time: 9:15 A.M.  
 Stop Time: 9:25 A.M.

Class: Grade 6  
 Session: Practice Page 1  
 of 1

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

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TEACHER STRUCTURING

\*\*\*\*\*

Reviewing									
Stating Objectives									
Outlining	21B								
Transitions	39C								
Important Points	45A								
Summarizing	13A	21A	71						
Teacher Presenting Information	1A	41B	43A	45B					

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TEACHER SOLICITING

\*\*\*\*\*

Lo Questions	1B	21C							
Hi Questions	13B	39D	45C	67B	69B				

\*\*\*\*\*

STUDENT TALK

\*\*\*\*\*

Student Response	2	4	6	8	10	12	14	16	18
Student Response	20	22	24	26	28	30	32	34	36
Student Response	38	40	42	44	46	48	50	52	54
Student Response	56	58	60	62	64	66	68	70	
Student Question									
Student Comment									

\*\*\*\*\*

TEACHER REACTING

\*\*\*\*\*

Gives Correct Answer	4 1A								
Praise									
Neutral Feedback	17	69A							
"No"									
"No" + Reason									
Redirecting	3	7	9	11	23B	29B	31B	33B	39B
Redirecting	43B	59B	61	63B					
Probing	5	15	19	25	55				

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Prompting									
Writing Student Ideas	23A	27	29A	31A	33A	35	37	39A	47
Writing Student Ideas	49	51	53	57	59A	63A	65	67A	
*****									
Unclassifiable									
*****									

Sample Transcript--Mrs. Dankin's Class

1. (T) Something that we've been talking about a fair bit since September is that we have to listen to each other when we talk. Sometimes I get the feeling that we only have been paying lip service to that. By lip service I mean we've been saying it but we haven't been feeling it, and perhaps part of the difficulty is that you're getting hearing and listening confused. I think we have to differentiate between them. I've put a list of things on the board of things we may hear. Who can read the first one on the list?

2. (S) A singing meadow lark.

3. (T) What's a second?

4. (S) Heavy footsteps.

5. (T) Pardon me.

6. (S) Heavy footsteps.

7. (T) O.K. Another one.

8. (S) A child talking.

9. (T) A different one. The next one, E?

10. (S) Directions to city hall.

11. (T) O.K. The last one.

12. (S) Traffic on Lougheed Highway.

13. (T) Cars and traffic on Lougheed highway. Those are all things we would hear in day-to-day existence. There's one thing that you would probably listen to more carefully than anything on that list. What might it be? One thing. Look at the list carefully for a minute. What's one thing you would possibly

listen to more carefully than anything else on that list? Take a good look at it and think why it would stand out more than the others.

14. (S) Heavy footsteps.

15. (T) I can't hear you.

16. (S) Heavy footsteps.

17. (T) O.K. For you that might be one.

18. (S) Directions to city hall.

19. (T) O.K. Why do you think that one as opposed to others, O.?

20. (S) Because without them you won't know where to go.

21. (T) O.K. The others you could listen to and just kind of register the fact that a bird was singing and say, yeah that sounds o.k. You could listen to heavy footsteps and maybe you wouldn't think that that was alright. Maybe you'd get a little nervous about it. A child talking might awaken you at night and you might tell it to stop. But directions to city hall, if you just sort of heard it and didn't listen very carefully you might find yourself lost in the city. What I'd like to do now is to do a little bit of brainstorming and make a list of things we could hear in day-to-day work in this classroom. O.K. What are some of the things we could hear in this classroom?

22. (S) Talking.

23. (T) O.K., talking. What's something else?

24. (S) Someone walking.

25. (T) Should I put walking or footsteps?

26. (S) Footsteps.



27. (T) Footsteps.
28. (S) Sneezing.
29. (T) O.K. Something else.
30. (S) Rustling of papers.
31. (T) O.K., rustling of papers.
32. (S) P.A. announcements.
33. (T) O.K., the P.A. announcements.
34. (S) People coughing.
35. (T) O.K. I'll put that beside sneezing.
36. (S) Chalk on the board.
37. (T) Chalk. Sometimes chalk sounds alright and sometimes it makes a squeaky noise.
38. (S) Shuffling.
39. (T) O.K., shuffling. Anything else? We've covered quite a range. We hear all of those things unless they get so noisy so that you can't hear people talking. Which one of those do you listen to more carefully than others?
40. (S) P.A. announcements.
41. (T) That's one. If you don't you miss out on checker tournaments, on house games and choir practices, and basketball practices.
42. (S) You.
43. (T) Hopefully if I'm talking to you you're going to be listening. Or if someone else is talking to you you'll be listening. You listen more carefully to talk directed at you. Is there anything else on there?

44. (S) Coughing and sneezing.

45. (T) Is it really important to listen to coughing and sneezing? But you might pay more attention because it's irritating you. The other one, footsteps, is generally happening and you don't zero in on every footstep. Or background talking. You wouldn't zero in on it unless it goes on and on. Sneezing is the same thing. Rustling of papers is just general every day noise. We don't pay that much attention to it. O.K. Let's take a different situation. You're babysitting and it's late at night and you started at 11:30 to watch a movie. When you put it on it sounded pretty good but it was a horror movie. And you thought, heh this is going to be really good but what happens is that it's a little scarier than you had bargained for and you're sitting downstairs with the t.v. on. What are the things you're going to hear in that house?

46. (S) Sometimes you hear the house settling back.

47. (T) O.K. The sound of the house settling back.

48. (S) One of the children crying.

49. (T) You may hear one of the children crying.

50. (S) Furnace starting up.

51. (T) O.K. The sound of the furnace starting up.

52. (S) Doors opening.

53. (T) O.K. The creaking of doors. Normally you don't hear that noise but all of a sudden your awareness is heightened.

54. (S) (inaudible)

55. (T) Say it again, I couldn't hear you.

56. (S) Sound that you think you hear.
57. (T) O.K. Imagined sounds. B?
58. (S) Things outside.
59. (T) Things outside that you wouldn't normally pay attention to. O?
60. (S) The refrigerator.
61. (T) Anything else? C?
62. (S) Trees rustling.
63. (T) O.K. Trees rustling. And D?
64. (S) Trees against the window.
65. (T) Yeah, trees against the window.
66. (S) Raining.
67. (T) O.K., raining. O.K. In that kind of situation you're paying more attention to noises than you would in an ordinary situation. The refrigerator comes on, the trees rustle, the telephone rings--you'd probably pay attention to which one of those things if you were eating your dinner with your mom and dad?
68. (S) The telephone.
69. (T) Right. The others are everyday noises. But if you're in a situation where you're nervous about it all, you'd probably zero in on all of those things. Why? Why are we listening to them when we normally don't give them any attention?
70. (S) It's a surprise.
71. (T) O.K. And you're aware of all sorts of noises that normally you shove to the back of your brain and don't pay alot

of attention to. I put a question up there. So there's a difference then between hearing and listening. We hear people talking in the hall, but I don't stop and listen. That's not important to what's going on in here. Hopefully. So hearing is something that goes on in the background and listening is something we focus in on.

STANFORD UNIVERSITY - SCHOOL OF EDUCATION  
 SCRDT Program on Teaching Effectiveness  
 RECITATION STUDY OBSERVATION SYSTEM

Teacher: Mrs. Mason  
 Coder: L. Prupas  
 Date: May 1, 1982  
 Start Time: 9:15 A.M.  
 Stop Time: 9:25 A.M.

Class: Grade 6  
 Session: Practice Page 1  
 of 1

	1	2	3	4	5	6	7	8	9
*****									
TEACHER STRUCTURING									
*****									
Reviewing									
Stating Objectives									
Outlining	1A								
Transitions	23B								
Important Points									
Summarizing									
*****									
Teacher Presenting Information	33	92							
*****									
TEACHER SOLICITING									
*****									
Lo Questions	3B	23C	37B	43	45	59	86B	94	96B
Hi Questions	1B	15B	49B	70					
*****									
STUDENT TALK									
*****									
Student Response	2	4	6	8	10	12	14	16	18
Student Response	20	22	24	28	30	32	34	36	38
Student Response	42	44	46	48	50	52	54	56	58
Student Response	60	62	64	66	68	69	71	73	75
Student Response	77	79	81	83	85	87	89	91	93
Student Response	95	97	99	101					
Student Question									
Student Comment	40								
*****									
TEACHER REACTING									
*****									
Gives Correct Answer	3A	37A	39	49A	51	53	57A	65	67A
Gives Correct Answer	72A	82A	84A	86A	96A				
Praise	15A	88							
Neutral Feedback	19A	55	63						
"No"	13A								
"No" + Reason									
Redirecting	11B	13B	19	21B	27	41B	47	57B	72B

Redirecting	174	190								
Probing	5	7		9B	17		25		31	
Probing	76	78		80		84B		98		100
Prompting	82B									
Writing Student Ideas	11A		21A		23A		29		35A	
*****	*****									
Unclassifiable										
*****	*****									

Sample Transcript--Mrs. Mason's Class

1. (T) What they're asking you to do is to skim the opening of the story and find three ways that the ocean can benefit people. Would you do that now please. Let's put them on the board. What is one way that the ocean can benefit people?
2. (S) It contains protein.
3. (T) Yes it contains protein. Who can explain for us what protein is before we go on to the next one? What's protein?
4. (S) Sort of like it's a mineral like fish has it and it keeps it healthy.
5. (T) Yes. Yes. All meat products have it don't they? What do you need it for? Protein?
6. (S) It might help to build up your body.
7. (T) What part of your body in particular?
8. (S) Muscles.
9. (T) Muscles. Yeah. You need it for your muscles. So the ocean has protein in the form of what? Where would we get the protein from the ocean?
10. (S) From fish.
11. (T) From fish. What else? There's other sources of protein in the ocean.
12. (S) Minerals.
13. (T) No. What other forms of life in the ocean would have protein?
14. (S) There's other seafood, like clams and lobsters and stuff.

15. (T) That's right, like shellfish. And then there are very very tiny animals that live in the ocean that have protein. O.K. How else can the ocean benefit people?
16. (S) You can take the salt off the water, You can use desert land for farming.
17. (T) Yes. Yes if you take the salt out of the soil. Does anyone have any idea of how they do that?
18. (S) They got some kind of thing and they take the salt out of the water and then they bring it over on a plane and drop it on some desert land.
19. (T) How do they get the salt out of the ocean actually? What's a way that would work?
20. (S) Evaporate the water.
21. (T) That's right. They have shallow pools where they evaporate the water. And the third thing?
22. (S) Minerals.
23. (T) Minerals. So the ocean can be quite beneficial to us. And I think one of the points in the story is that we should look after the ocean because of these benefits. Now another question asks us what dangers the scientist might face. What dangers did the scientist face in this story?
24. (S) Big clams.
25. (T) Yes, let's list those dangers. And why were they dangerous?
26. (S) (inaudible)
27. (T) What other dangers?



28. (S) They were talking about a shark.
29. (T) (writes response on board)
30. (S) Going down too deep.
31. (T) What's the problem with going down too deep?
32. (S) Lose breath and not enough time to get up.
33. (T) Remember, she had no artificial breathing apparatus.
34. (S) Water pressure too.
35. (T) Yes and what did that do? What did water pressure do to her?
36. (S) Like when you go up on mountains your ears pop and when you go under water you feel it in your ears too.
37. (T) That's right. You develop pressure. Can you remember what she specifically said about water pressure. On p. 284.
38. (S) It says that her face mask pushes onto her face.
39. (T) That's right. It makes it very very uncomfortable.
40. (S) And also, when you go down that deep, like say they're going to take the clam and the clam grabs you, you could run out of breath.
41. (T) That's right. That's right. Any other dangers? Sharks, clams, water pressures we've said. Any other dangers? Sharks, clams, water pressure we've said. Any other dangers?
42. (S) It didn't mention anything about it but little plants.
43. (T) Can any of you think of any plants that might be dangerous or harmful to people?
44. (S) Animals. They look like coral but when you touch them they grab you.

45. (T) Yes, and coral itself would be dangerous too. Why?
46. (S) Because clams hide in it.
47. (T) Yes. What else?
48. (S) It's sharp.
49. (T) Yes it's very sharp. You can cut yourself on coral. O.K. How do you think these scientists could avoid these dangers. Or could they? Maybe they can't.
50. (S) Maybe like if they went down with air tanks.
51. (T) O.K. By using air tanks and diving suits.
52. (S) Going down with two people so if something went wrong the other guy could get help.
53. (T) Yes. In fact I think divers almost always dive in teams. Uh huh.
54. (S) They've got these new diving suits. They're sort of like metal all around them and they were like testing them and a shark bit them and nothing happened to the person in them.
55. (T) Oh, is that right? So they don't have to use rubber anymore. That's interesting.
56. (S) Also, they shouldn't go down to the bottom because that's where the clams are.
57. (T) Avoid dangerous places. Uh huh. Any other way you can avoid these dangers?
58. (S) Well, I heard about this person. He went swimming. There was seaweed on the ground but his weight caught and his foot got caught in the seaweed, but he got out.
59. (T) He was lucky. Let's recall ways that this man helped the

scientists. Theacon was his name, the native man. What ways did he help? Can you think of one way?

60. (S) Teach them under water. Like...

61. (T) Like what?

62. (S) How to survive. Like not get caught.

63. (T) Yes.

64. (S) How to get clams to help you.

65. (T) Yes he was quite good with the clams.

66. (S) How to spear a fish.

67. (T) Yes, how to spear a fish.

68. (S) He had two spears, one in each hand.

69. (S) And he also... Like if he missed he tried to think out its next move, then he'd go after it again.

70. (T) What would be difficult about spearing a fish? Think about our science unit. What is difficult about spearing a fish?

71. (S) When you're spearing try to get him in some special spot or else if you miss the shark might try to bite you.

72. (T) Yes, because the spear won't go through the shark's skin. It's too tough. What else is difficult about spearing fish?

73. (S) When you're going down, you might not be able to go down fast enough.

74. (T) O.K. And one more thing I'm thinking of, B.

75. (S) Umm...

76. (T) Why might you miss the fish?

77. (S) Because it might move in one spot.

78. (T) But supposing it didn't move. Why might you miss it?
79. (S) Because of the light?
80. (T) What happens?
81. (S) The fish seems to be in a different place.
82. (T) Yes the light refracts. Do you remember that? M, what were you going to say?
83. (S) The light refracts.
84. (T) Yes, the light refracts. And so what happens?
85. (S) You don't really see where the fish is.
86. (T) Yes, the angle is changed, isn't it? So he taught her that. Is there anything else that he taught her?
87. (S) He taught her different seafood that she could eat that she never thought of.
88. (T) That's right, D.
89. (S) Like when they went down diving he'd cut open a clam and say it was really good for raw seafood.
90. (T) E?
91. (S) He said a clam caught him and he couldn't get up but when he came up he had a mussel in his hand.
92. (T) Yes and he was planning a joke and she didn't think it was funny.
93. (S) He taught her about when it's raining the water.
94. (T) What was that called? Find it in the book. P. 283 has it.
95. (S) Schlieren.
96. (T) Yes, schlieren. And it's a German word and what does it

mean?

97. (S) When rain water falls into the salt water and it moves.

98. (T) It moves and what effect does it have on the divers?

99. (S) It's hard to swim through.

100. (T) Yes, and what do you have to do?

101. (S) You have to go down below the schlieren.

STANFORD UNIVERSITY - SCHOOL OF EDUCATION  
 SCRDT Program on Teaching Effectiveness  
 RECITATION STUDY OBSERVATION SYSTEM

Teacher: Mrs. Parici  
 Coder: L. Prupas  
 Date: May 9, 1982  
 Start Time: 1:15 P.M.  
 Stop Time: 1:25 P.M.

Class: Grade 6/7  
 Session: Practice Page 1  
 of 1

	1	2	3	4	5	6	7	8	9
***** TEACHER STRUCTURING *****									
Reviewing									
Stating Objectives									
Outlining									
Transitions									
Important Points									
Summarizing	154B								

Teacher Presenting Information	18A	36A	48A	78A	80A				
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***** TEACHER SOLICITING *****									
Lo Questions	1	44	46B	58	78B	80B	92B	98	108
Lo Questions	118	140B							
Hi Questions	18B	36B	48B	54	62B				

***** STUDENT TALK *****									
Student Response	2	4	5	6	7	8	9	10	11
Student Response	12	13	14	15	17	19	21	23	25
Student Response	27	29	31	33	35	37	39	41	43
Student Response	45	47	49	51	53	55	57	59	61
Student Response	63	65	67	69	71	73	75	77	79
Student Response	81	83	85	87	89	91	93	95	97
Student Response	99	101	103	105	107	109	111	113	115
Student Response	117	119	121	123	125	127	129	131	133
Student Response	135	137	139	141	143	145	147	149	151
Student Response	153								
Student Question									
Student Comment									

***** TEACHER REACTING *****									
Gives Correct Answer	46A	62A	64	66	68	72	74		
Praise	22	28	42	50	134	138	140A		

Neutral Feedback	30	32	34	40	52	82	84	86	88	
Neutral Feedback	90	92A	100	104	106	110	112	114	122	
Neutral Feedback	126	130	136	142	144	146	148	150	152	
Neutral Feedback	154A									
"No"										
"No" + Reason	56A	116	124	128	132					
Redirecting	3	16	38	56B	60	102				
Probing	20	24	26	70	76	94	96	120		
Prompting										
Writing Student Ideas										
*****										
Unclassifiable										
*****										

Sample Transcript--Mrs. Parici's Class

1. (T) List the words on the one side which are sound words. Starting from the back, D., would start and read off these words one by one.
2. (S) Lap.
3. (T) D?
4. (S) Gurgle.
5. (S) Crash.
6. (S) Murnur.
7. (S) Pour.
8. (S) Ripple.
9. (S) Roar.
10. (S) Plunge.
11. (S) Drip.
12. (S) Spout.
13. (S) Slip.
14. (T) Sprinkle.
15. (S) Sprinkle.
16. (T) I wanted that from M. Can you think of one to add to the list? A sound word.
17. (S) Drop.
18. (T) Drop. That's a good one. All these are sound words, they sound like the things they're describing. Now in two seconds I'm going to ask you to give me words that describe snow. Let's try snow.
19. (S) White.



20. (T) Is that what snow sounds like?
21. (S) Crunchy.
22. (T) That's a good one.
23. (S) Softly.
24. (T) Softly. Uh huh. What does it sound like?
25. (S) Slippery.
26. (T) Does it sound slippery? What word do you use when snow is falling?
27. (S) Tumbling.
28. (T) Tumbling, yes that's a good one.
29. (S) Slushy.
30. (T) Yes it does sound slushy when you put your car through it.
31. (S) Squish.
32. (T) Yes.
33. (S) Slosh.
34. (T) Yes.
35. (S) Splat.
36. (T) Yes, when someone throws a snowball it splats up against the window. Alright, now let's think of something different. When you think of bees, what are some sounds they make?
37. (S) Buzz.
38. (T) Buzz. Right, anymore?
39. (S) Bizz.
40. (T) Uh huh.
41. (S) Zoom.

42. (T) Zoom, yes that's a good one.
43. (S) Zoom.
44. (T) You'd say that too. Alright, who knows what sound words are called.
45. (S) Oo-noo-matoo-poa-ee-ah.
46. (T) We say that onomatopoeia. Say that class.
47. (Class) Onomatopoeia.
48. (T) They are words that imitate sounds. When you think of a snake can you think of a sound word for a snake?
49. (S) Slither.
50. (T) Slither. That's a good one.
51. (S) Rattle.
52. (T) Uh huh.
53. (S) Slide.
54. (T) Uh huh. Can you think of a word that sounds like an elephant?
55. (S) Vrooo. Vrooo. Vrooo.
56. (T) That's a sound but it's not a word. Can you think of a word that sounds like an elephant?
57. (S) Broom.
58. (T) Yes. What do elephants do? What do we call an elephant's sound?
59. (S) Meow.
60. (T) What do we call it?
61. (S) Trumpet.
62. (T) A trumpet. Yes an elephant's trumpet. Which of the words

on your list are peaceful? Which sound are peaceful?

63. (S) Sprinkle.

64. (T) Sprinkle.

65. (S) Ripple.

66. (T) Ripple, yes.

67. (S) Flow.

68. (T) Flow, yes.

69. (S) Churn.

70. (T) Is that a peaceful word? Churn? What are you doing when something is churning?

71. (S) It's going round very fast.

72. (T) Yes, it's going round very fast.

73. (S) Ripple.

74. (T) Ripple.

75. (S) Spout.

76. (T) Do you think spout is a peaceful word?

77. (S) Lap.

78. (T) Yes, lap. The water lapping. You know when you're at the beach, the beach on a lake and there's wind. The water's coming in and gently lapping against the beach, lapping. Lake water lapping. What's that when we have all those sounds that sound the same? Lake water lapping.

79. (S) Alliteration.

80. (T) Yes, we did that a few weeks ago. So onomatopoeia are sound words like that. Which ones describe fast running waters. What's a word that describes fast running waters?

81. (S) Slap.
82. (T) Alright.
83. (S) Splash.
84. (T) Splash, alright S.
85. (S) Plunge.
86. (T) Plunge, yes.
87. (S) Crash.
88. (T) Crash.
89. (S) Gurgle.
90. (T) Well, gurgle, could be couldn't it.
91. (S) Spout.
92. (T) Yes, that's all fast moving water. Alright, what does murmur mean?
93. (S) Mumbling.
94. (T) Not exactly. It's something you say very quietly and very gently. Sometimes in silent reading you murmur to yourself. Very quietly talking to yourself.
95. (S) Sort of like whispering to yourself, maybe.
96. (T) Not quite.
97. (S) When someone's mad at you and you start talking under your breath.
98. (T) That's called muttering, not murmuring. Which word then describes slow moving water, D?
99. (S) Flows.
100. (T) Flows.
101. (S) Sprinkle.

102. (T) Sprinkle. M. Find me one.
103. (S) Lap.
104. (T) Lap.
105. (S) Drip.
106. (T) Drip. Yes.
107. (S) Plunge.
108. (T) Well it depends how it falls. We said that was probably fast moving, didn't we? Now which words are sounds for falling over a cliff?
109. (S) Spout.
110. (T) Spout.
111. (S) Plunge.
112. (T) Plunge.
113. (S) Drip.
114. (T) Hum.
115. (S) Sprinkle.
116. (T) Um, yes. But I wouldn't say that was falling over a cliff.
117. (S) Flow.
118. (T) Flow. Yes it could be flow. What happens to brooks in February?
119. (S) Doesn't the ice melt and then it starts rushing out?
120. (T) That's right. So which word would describe this brook in February?
121. (S) Gurgling.
122. (T) Gurgling.

123. (S) Murmuring.
124. (T) I wouldn't think so. I think it would be more than murmuring.
125. (S) Splash.
126. (T) Splash.
127. (S) Ripple.
128. (T) I think that's a bit gentle for ice melting in February.
129. (S) Spout.
130. (T) Spout.
131. (S) Murmur.
132. (T) Too quiet.
133. (S) Crack.
134. (T) That's a good one for ice melting.
135. (S) I think maybe roar. When the ice is cracking and the water starts rushing out maybe it's a giant waterfall.
136. (T) Yes.
137. (S) Churn.
138. (T) Churn. That would be a good one.
139. (S) Crash.
140. (T) Crash. That's good. Which words would be more effective on a day like this: a warm, spring, sunny, windless day.
141. (S) Flow.
142. (T) Flow.
143. (S) Sprinkle.
144. (T) Sprinkle.

- 1  
145. (S) Drip.  
146. (T) Drip.  
147. (S) Ripple.  
148. (T) Ripple.  
149. (S) Lap.  
150. (T) Lap.  
151. (S) Gurgle.  
152. (T) Gurgle.  
153. (S) Murmur.  
154. (T) Murmur. All the quiet words fit a sunny warm day.

## Appendix B

### Teacher Rating of Reading Ability

There are ( ) students in your class. Divide your class into thirds, ranking your students in the top, middle or bottom third of the class in terms of reading ability. There should be ( ) students in each third.

For the purposes of this study, the best reader in your class is being defined as the one who can read the most difficult material silently and really understand it. Do not consider reading rate when rating a student's reading ability.



## Appendix C

### Teacher Perception of Peer Status Questionnaire

Instructions to the teacher:

Each child in your class has special strong points. What follows is a series of questions about who you think performs best in a variety of areas. Please answer each question as honestly as possible. Please give each student's first and last name. You may choose as student's name as often as you like.

Example:

Suppose there is going to be a crafts fair in your school. Which three people would you choose to represent your class at the fair?

- a. Who would you choose first?
- b. Who would you choose second?
- c. Who would you choose third?

1. Suppose there is going to be a sports contest between your class and another grade 6 class.

- a. Who would be your first choice for your team?
- b. Who next?
- c. Who next?

2. Suppose an award was going to be presented to the student in your class who could read and understand the most difficult book in language arts.

- a. Who would be your first choice to receive this award?
- b. Who would be your second choice?

- c. Who would be your third choice?
3. Suppose your class got a chance to be on T.V. quiz show playing against another grade 6 class. Your class has to send a team of 3 people who will be asked questions about things learned in school.
- a. Who would you choose first to be on your class team?
  - b. Who second?
  - c. Who third?
4. Suppose you had to leave the classroom.
- a. Who do you think would do the best job of keeping the class under control?
  - b. Who next?
  - c. Who next?
5. Suppose you had the students write an advertisement for the Vancouver Sun as a homework assignment.
- a. Who do you think would write the best ad?
  - b. The second best?
  - c. The third best?
6. Suppose an accident happened in your class and you were not around.
- a. Which student would most likely take charge and know what to do?
  - b. Who else?
  - c. Who else?
7. Suppose you had an important message to send to the office.
- a. Who would you choose first to make sure the message got

quickly to the office and the student returned to class immediately?

b. Who second?

c. Who third?

8. Suppose you had to choose someone in your class to correct punctuation in one of your students' work.

a. Which student would be best at this task?

b. Second best?

c. Third best?

9. Suppose a photographer came around and wanted to photograph some kids for the cover of a book for children. The photographer doesn't know any of the kids. He just walks around for awhile. He opens the door of your class, pokes his head in, and looks at the children in the class for just a minute and then closes the door.

a. If we had to decide right then, who would you like to be photographed for the book cover?

b. Who next?

c. Who next?

Appendix D

Peer Status Questionnaire

Example:

Suppose there is going to be a crafts fair in your school. Which three people would you choose to represent your class at the fair?

- a. Who would you choose first?
- b. Who would you choose second?
- c. Who would you choose third?

Remember to try to give each student's last name (or initial) and not to choose yourself. You may repeat a student's name as often as you like.

1. Suppose there is going to be a sports contest between your class and another grade 6 class.

- a. Who would be your first choice for your team?
- b. Who next?
- c. Who next?

2. Suppose an award was going to be presented to the student in your class who could read and understand the most difficult book in language arts.

- a. Who would be your first choice to receive this award?
- b. Who would be your second choice?
- c. Who would be your third choice?

3. Suppose your class got a chance to be on T.V. quiz show playing against another grade 6 class. Your class has to send a

team of 3 people who will be asked questions about things learned in school.

- a. Who would you choose first to be on your class team?
- b. Who second?
- c. Who third?

4. Suppose your teacher had to leave the classroom.

- a. Who do you think would do the best job of keeping the class under control?
- b. Who next?
- c. Who next?

5. Suppose you had to write an advertisement for the Vancouver Sun as a homework assignment.

- a. Who do you think would write the best ad?
- b. The second best?
- c. The third best?

6. Suppose an accident happened in your class and no grown-up was around.

- a. Which student would most likely take charge and know what to do?
- b. Who else?
- c. Who else?

7. Suppose your teacher had an important message to send to the office.

- a. Who would you choose first to make sure the message got quickly to the office and the student returned to class immediately?

b. Who second?

c. Who third?

8. Suppose you had to choose someone in your class to correct punctuation in one of your paragraphs.

a. Which student would be best at this task?

b. Second best?

c. Third best?

9. Suppose my job was to follow you around for a week and make a list of the people in your class you were hanging around with.

a. Who would most likely be at the top of the list?

b. Who second?

c. Who third?

10. Suppose a photographer came around and wanted to photograph some kids for the cover of a book for children. The photographer doesn't know any of the kids. He just walks around for awhile. He opens the door of your class, pokes his head in, and looks at the children in the class for just a minute and then closes the door.

a. If we had to decide right then, who would you like to be photographed for the book cover?

b. Who next?

c. Who next?

## Appendix E

### Set Induction for Peer Status Questionnaire

Each of you has special strong points. I would like you now to think about the strong points of your classmates. What follows is a series of questions about who you think performs best in a variety of areas. Please answer each question as honestly as possible. Keep your work to yourself. ( Also, remember that what you write down will be kept totally confidential. I will be the only one reading your answers. When giving a student's name, try to give his/her last name. Also, do not choose yourself for any of the questions. You may choose a student's name as often as you like. Let's do the first example together.

(At this point students did the example question in the questionnaire.)

Are there any questions?

As soon as you've finished, I will collect your paper. Please study or read while waiting for the others to finish. ✓

Appendix F

Self-Efficacy Probe

Please answer this question.

If you were to take another test just like this, and it also had sixty questions, how many of the sixty do you think you would get right? Put a check mark beside the number of questions you think you would get right.

0 \_\_\_\_\_

5 \_\_\_\_\_

10 \_\_\_\_\_

15 \_\_\_\_\_

20 \_\_\_\_\_

25 \_\_\_\_\_

30 \_\_\_\_\_

35 \_\_\_\_\_

40 \_\_\_\_\_

45 \_\_\_\_\_

50 \_\_\_\_\_

55 \_\_\_\_\_

60 \_\_\_\_\_

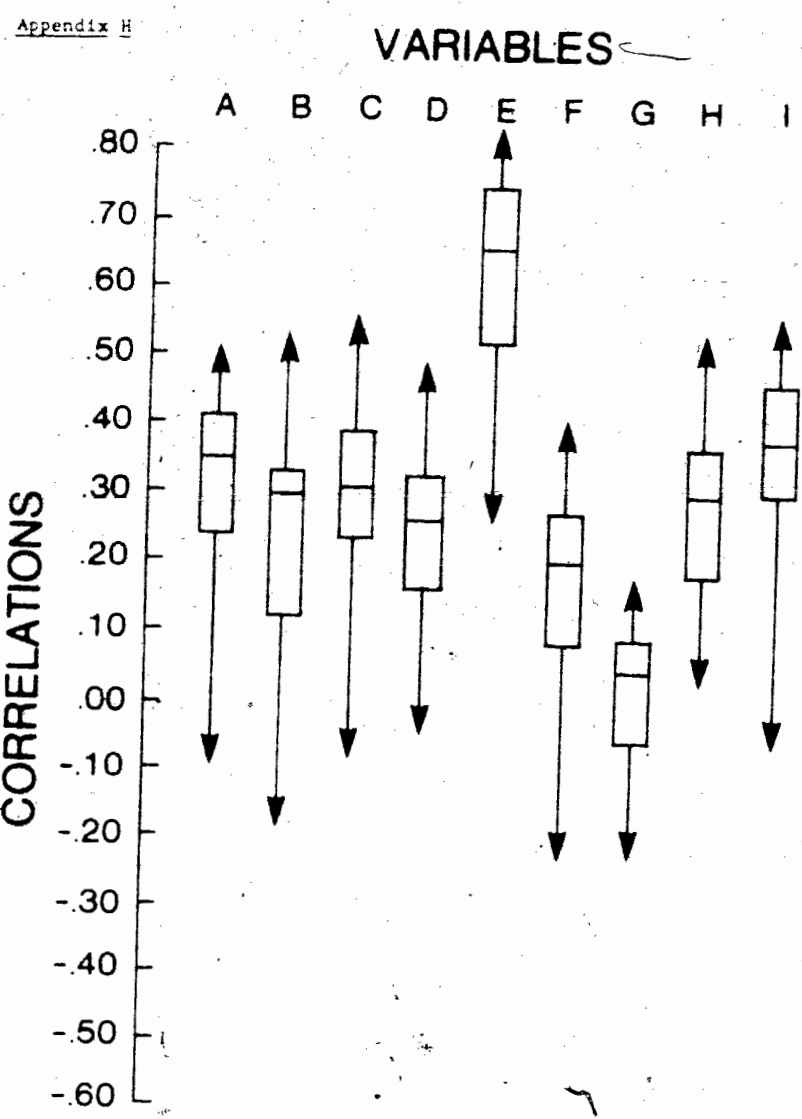


## Appendix G

### Punctuation: Commas

1. Please bring pens pencils and erasers to class.
2. During the next five years you will learn to write.
3. George and Albert were late to class.
4. I don't mind teachers students principals and vice-principals.
5. Screaming in pain the student left the emergency room.
6. You may however not get the best mark.
7. That boy the one wearing the hat is talking.
8. I was bored first second and third period.
9. I hate examinations because I always fail.
10. I received an "A" in Socials "B's" in English and Math and a "C" in Science.
11. That pen the blue one is out of ink.
12. Because I was late I have a detention.
13. There apples pears and oranges in the salad.
14. All students even those in class must report to the gym.
15. Two teachers Mr. Jones and Ms. Smith will sponsor the club.

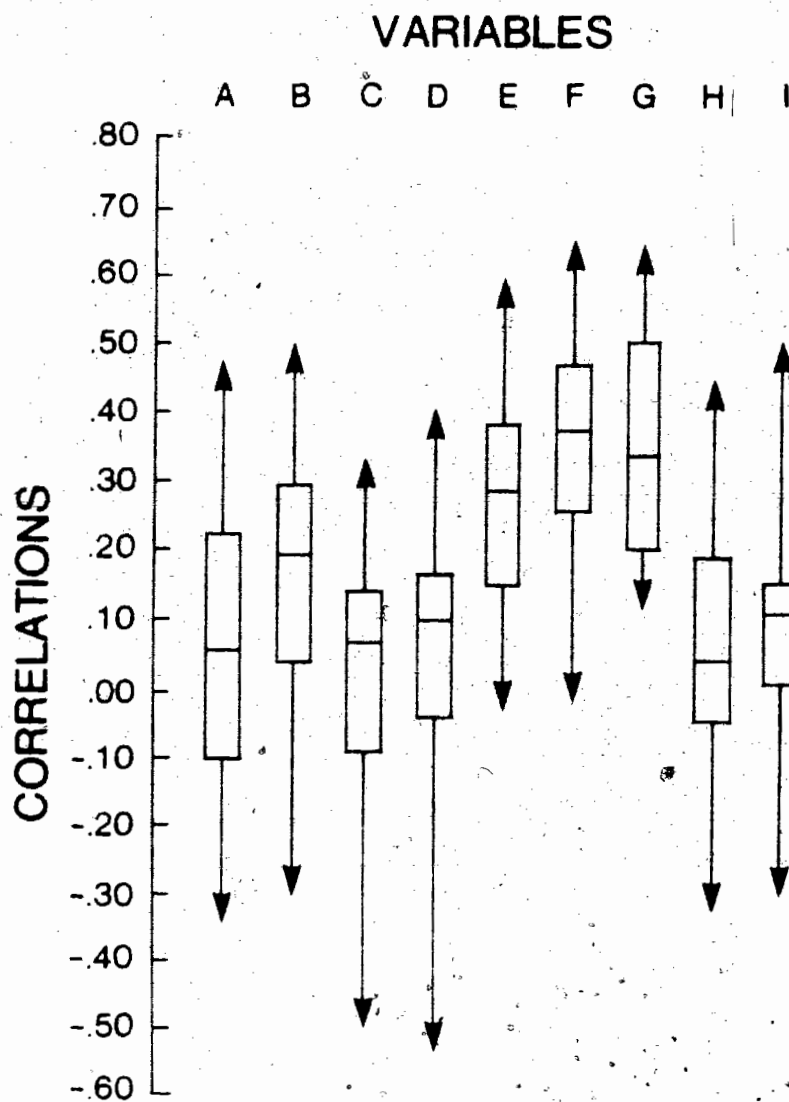
Figure 1



Box-and-Whisker Plots for Mrs. Bandy's Class

A = Teacher Rating of Reading Ability; B = MAT; C = Teacher Status: Academic; D = Peer Status: Academic; E = Participation; F = Teacher Status: Social; G = Peer Status: Social; H = Sex; I = Self-Efficacy

Figure 2

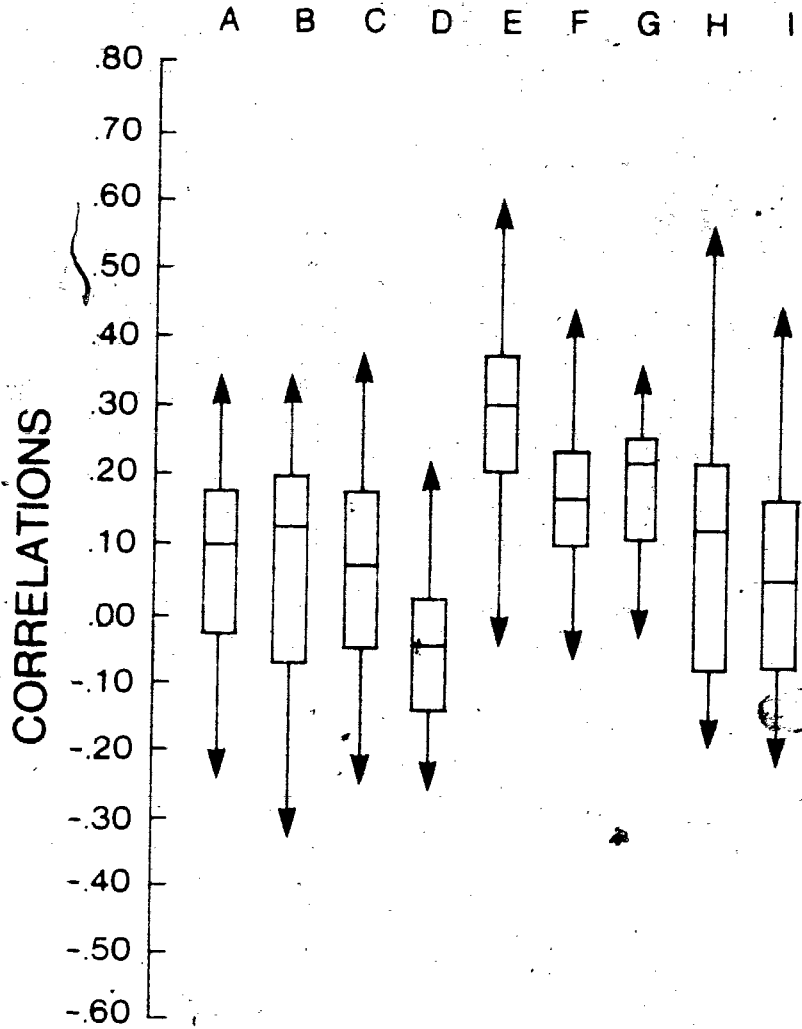


Box-and-Whisker Plots for Mrs. Dankin's Class

A = Teacher Rating of Reading Ability; B = MAT; C = Teacher Status: Academic; D = Peer Status: Academic; E = Participation; F = Teacher Status: Social; G = Peer Status: Social; H = Sex; I = Self-Efficacy

Figure 3

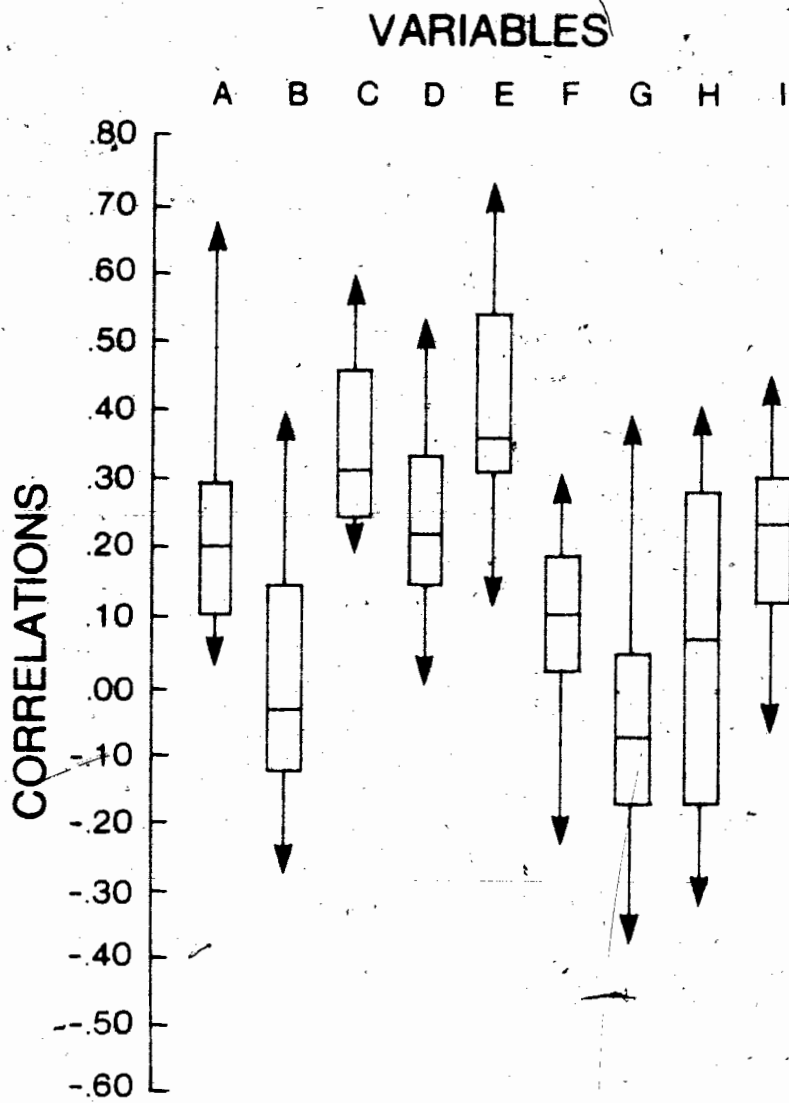
### VARIABLES



Box-and-Whisker Plots for Mrs. Mason's Class

A = Teacher Rating of Reading Ability; B = MAT; C = Teacher Status: Academic; D = Peer Status: Academic; E = Participation; F = Teacher Status: Social; G = Peer Status: Social; H = Sex; I = Self-Efficacy

Figure 4



Box-and-Whisker Plots for Mrs. Parici's Class

A = Teacher Rating of Reading Ability; B = MAT; C = Teacher Status: Academic; D = Peer Status: Academic; E = Participation; F = Teacher Status: Social; G = Peer Status: Social; H = Sex; I = Self-Efficacy

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