ABSTRACT. This study is concerned with possible differences in interaction patterns between teachers and certain groups of students: high and low achievers, and boys and girls. Detailed and comprehensive records of all verbal teacher-student interactions, both public and private, were obtained through videotaping a grade 6 class in three different settings: mathematics, language and science. While there was much consistency in the way the teacher monitored in this study interacted with the different groups, some important differences occurred in the quality and quantity of his interactions with students perceived as 'best' and 'weakest', and with boys and girls in mathematics classes.

BACKGROUND

Classroom dynamics, typically thought of as the interactions between teachers and students, and students and students continue to be a source of much interest to educational researchers and practitioners. The diverse range of perspectives brought to this area is illustrated particularly well by the variety of observational systems that have been used to describe and quantify classroom behaviour. A substantial number of the methods used prior to the 1970s were collected by Simon and Boyer (1967, 1970). Their compilation provides a detailed and valuable review. More recently Galton (1978) highlighted the techniques that have been used to observe British classrooms.

Despite the considerable differences in the methodologies employed by different systems, all aim to describe and monitor interactions between teachers and students. While some merely study such interactions, report recurring sequences and identify predictable patterns of behaviour, others attempt to link these to student achievement. The research described in this paper relies in particular on two different methods of studying classroom behaviour that grew out of the latter approach: the “wait time” investigation usually associated with Rowe (1973, 1974a, 1974b) and the study of teacher–child dyadic interactions most fully described by Brophy and Good (1970). Both are examples of the process product approach to the study of teaching.

Rowe’s investigations were conducted in science classes in elementary schools. She distinguished between two different types of wait time:

‘Wait-time of the species one type’ may appear in two varieties. Normally it begins when the teacher stops speaking and terminates when a student responds or the teacher speaks again. If,
as sometimes happens, a teacher asks a question, pauses, calls on a student, and pauses again, the two forms are summed. Together they constitute an instance of the first species of wait-time.

'Wait time of the species two variety' is calculated by taking the sum of all pauses occurring on the student player side and terminates when the teacher speaks . . . the pauses may occur within the speech of a single pupil or they may occur between the speech of a succession of pupils. (Rowe, 1974a, p. 86)

Teachers, Rowe found, on average allowed students only one second to begin answering the question addressed to them. If an answer was not begun within that time they usually repeated the question or called on a different student for the answer. Wait time 2 was similarly brief, with teachers typically waiting an average time of 0.9 seconds only before commenting on the answer, asking another question or moving to a different topic. Consistent variations in the above wait times were noted, however, when teachers' interactions with students they rated as good and poor were considered separately. Rowe (1974a) reported that the top students were allowed nearly two seconds to begin an answer compared with the weakest students who were given less than one second.

When teachers were trained to extend their wait times to three to five seconds, a number of changes in the students' behaviour were observed. Students' responses to questions tended to be longer, students initiated more responses and more questions, failures to respond decreased, the incidence of speculative responses increased, contributions by 'slow' students increased, and the need for disciplinary admonitions decreased.

While not all of Rowe's main findings have been replicated in later research, there is support for the assertion that increase in teacher wait time changes the quality of the teacher-student interaction. When teachers in middle school science classes were trained to increase their wait time to between two and three seconds for first and follow on questions, students substantially increased the length of their answers and also initiated more constructive interactions, while the number of disciplinary comments decreased (Swift and Gooding, 1983). Tobin (1980) also examined the effect of extended teacher wait time on achievement in science. He trained teachers to extend their normal wait time from a mean of 0.5 seconds to a mean of more than two seconds, with a consequent improvement in student achievement. In a subsequent study, Tobin and Capie (1982) found variations in teacher wait time to be significantly related to variations in science achievement for students in years 6 to 8, with longer teacher wait time being associated with higher student achievement. Working in the area of language arts, Hassler (1979) found that teachers trained in wait time techniques asked more higher