SECTION B

OBSERVED BEHAVIOURAL INTERACTIONS
BETWEEN TEACHERS AND STUDENTS
IN
NEW SOUTH WALES SECONDARY CLASSROOMS
CHAPTER 7
NATURAL RATES OF TEACHER APPROVAL AND DISAPPROVAL IN THE CLASSROOM

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CHAPTER 7

NATURAL RATES OF TEACHER APPROVAL AND DISAPPROVAL IN THE CLASSROOM

7.1 Overview

The purpose of this chapter is to review critically classroom-based empirical research on teacher behaviour in an attempt to determine the natural or normal rates of teacher approval (e.g., praise) and disapproval (e.g., reprimand) and the extent to which teachers deploy approval and disapproval effectively.

7.2 Background

Since the 1960s, researchers have been demonstrating the power of teacher behaviour on both individual students and whole classes. Behavioural research and demonstration studies, carried out over the past thirty years or so, have consistently shown that teacher behaviour may be a powerful influence on the behaviour of both individual students and whole classes (see, e.g., the classic studies by Becker et al., 1967, Madsen, Becker, and Thomas, 1968, and Thomas, Becker, and Armstrong, 1968). Although initially pioneered by behaviour analysts working in special education contexts, it has subsequently been clearly and unequivocally demonstrated, in a variety of educational contexts and settings, that such key teacher behaviours as contingent approval and disapproval may be systematically employed by teachers so as to increase both academic and appropriate social behaviours and to decrease inappropriate

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1 An earlier version of this chapter has been published as Beaman, R., & Wheldall, K. (2000). Teachers' use of approval and disapproval. Educational Psychology, 20, 431-446.

Consequently, it has become somewhat of a truism to advise teachers experiencing troublesome or inappropriate classroom behaviour to employ contingent praise strategies in order to encourage more appropriate classroom behaviour (Merrett & Wheldall, 1990; Wheldall & Merrett, 1989). Moreover, the adoption of the principles of behavioural reinforcement originally developed by behaviour analysts in special education settings into the “canon of teaching” leads many teachers to assert, when instructed on effective deployment of teacher approval and disapproval, “We do that already” (Houghton, 1988). But how far is this, in fact, the case? Do teachers really selectively employ contingent approval or praise in order to reinforce desired classroom social behaviours? Or, when praise is given, is it employed in a non-contingent, unsystematic way? Do teachers even use more praise than reprimand?

Should teacher assertions about being “positive” be taken at face value, it could be assumed that teachers have taken all that has been learned from the research regarding systematically deployed approval and disapproval, for example, and that this is being skilfully delivered to the benefit of students and teachers alike as a matter of course in classrooms everywhere. That this is not necessarily the case is attested to in the research literature.

While demonstrated effectively in the context of experimental studies, the research literature relating to non-experimentally manipulated or “naturalistic” rates (White, 1975) has been a more neglected area. White, in her seminal work on teacher approval and disapproval, suggested that “little has been reported on rates of teacher verbal reinforcement as they actually occur in the classroom, that is, on what might be called naturalistic or existing rates” (1975, p. 367). The observation that Schwieso and Hastings (1987) made about the relative paucity of purely descriptive, naturalistic
studies on the ways in which teachers typically use approval/praise in the classroom still holds true today. For this reason, this chapter will review studies involving subjects teaching kindergarten classes to upper secondary classes in an attempt to canvass the full range of studies dealing with naturalistic rates of teacher approval and disapproval.

7.3 The Role and Prevalence of Teacher Feedback

Clearly one of the most powerful factors in classroom interactions is that of teacher behaviour — of particular importance is teacher approval and disapproval (e.g., praise and reprimand). In an article assessing the effects of 32 variables related to schooling in 7,827 studies using meta-analysis, Hattie (1992) reported “the most powerful single moderator that enhances student achievement is feedback” (Hattie, 1992, p. 9). The effect-size for reinforcement (1.13) was found to be the largest of all variables.

While Schwieso and Hastings (1987) acknowledge that “it is a little obvious” (p. 124) to say that teaching is an interactive process, they do make the very valid observation that it is a point often ignored in the research into the complexities of the classroom. Other factors to be considered in the complex of dynamics of classroom interaction (as has been shown in Section A of this thesis) include the nature of troublesome classroom behaviour, its prevalence, severity, and type; the impact of teacher stress on the interactions in the classroom; and students’ perceptions of their classroom environment. (Teachers may believe that their classrooms are positive environments, but do their students share their view?)

Schwieso and Hastings (1987) emphasised the importance of the interactive relationship between teacher behaviour and student behaviour in their discussion of teachers’ rates of approval and disapproval in the classroom. They explained that while teachers’ approvals and disapprovals may have some effect on their students, teacher
responses are in part the effects or consequences of students' actions. "Teachers do not approve or disapprove in vacuo" (Schwieso & Hastings, 1987, p. 124). Or as Brophy (1981) put it "...much teacher praise is reactive to and under the control of student behavior rather than vice versa..." (p. 5). A more balanced perspective may be that of Nafpaktitis, Mayer, and Butterworth (1985) who stated that in the feedback system of the classroom, "students continually influence teacher behavior and vice versa" (p. 366).

7.4 The Study of Natural Rates of Approval and Disapproval in the Classroom


The data indicated that teachers approved of students' behaviour more than they disapproved, and were most likely to praise "good answers" or "good work" than to criticise "poor answers or poor work". On the other hand, teachers were much more likely to criticise "poor conduct" than to respond to "good conduct"; teachers rarely praising students for appropriate behaviour (Brophy, 1981, pp. 6,10). In all of the studies reported by Brophy (1981), praise for good conduct was the least frequent
teacher response. Brophy's own summary of the data from these studies was that "the typical teacher seldom praises good answers or good work and rarely praises good conduct" (p. 10). This perception of infrequent praise was confirmed by Rutter, Maugham, Mortimore, and Ouston (1979) (as cited in Schwieso & Hastings, 1987). While investigating which within-school factors determined better behaviour, they reported that absolute rates of praise were "rather low, usually only three or four instances per lesson" [(Rutter et al. (1979), as cited in Schweiso & Hastings, 1987, p. 127).

Seeking to determine the natural rates of teacher verbal approval and disapproval in classrooms, White (1975) reported the findings of sixteen separate studies ($N = 104$) in the United States. Although some of the work of Brophy (and his colleagues) (1981) may have predated that of White, White's work is generally considered as the first to have as its primary focus natural rates of teacher approval and disapproval. Teachers in White's study were from a variety of schools teaching students from grades one to twelve.

White (1975) and her colleagues utilised an observation schedule known as TAD (as cited in White, 1975, pp. 367-8), an acronym for Teacher Approval and Disapproval Observation Record, devised by White, Beecher, Heller, and Waters (1973) in sixteen separate studies. Teacher approval was defined as "a verbal praise or encouragement", and teacher disapproval as "a verbal criticism, reproach, or a statement that the student's behaviour should change from what was unacceptable to acceptable to the teacher" (White, 1975, p. 368). A distinction was made between instructional versus managerial teacher responses in this study. To use other terminology, teacher responses were categorised according to whether they were in response to students' academic behaviour (instructional) or to their social behaviour (managerial). Contrary to Brophy's (1981) finding that teachers showed more approval
than disapproval, the findings of White’s analysis were that, with the exception of those teaching children in Grade 1 and Grade 2, teachers gave more disapproving than approving comments to their students, overall.

White (1975) reported the highest teacher approval rate as being 1.3 verbal approval responses per observed minute occurring in Grade 2 (she did not report a mean rate per minute across all grades), with relatively high rates also occurring in Grade 1 (ranging from 0.27 to 0.95 responses per minute). As indicated above, after Grade 2, the rate declined sharply, where, according to White it stabilised at about one teacher approval every five or 10 minutes. “This means that in a typical class of 40 min, the teacher emits four to eight approvals during the entire class period” (White, 1975, p. 369). Similarly, the rate of teacher disapproval peaked early in the years of schooling (in Grade 1 where in one study the rate was 0.89 per minute) and remained relatively high in Grade 2 where disapproval occurred at the rate of 0.69 per minute, on average.

In terms of responses to instructional or academic behaviour of students, teacher approval in White’s study (1975) was higher than teacher disapproval in every grade. Conversely, for managerial or social behaviour, teacher disapproval exceeded approval, once again, in every grade. Moreover, White (1975) points to “the almost nonexistent rate of teacher approval for managerial behaviour” (p. 370), with four of the sixteen studies reported having a zero rate of approval statements to managerial behaviour in a total of 2,520 minutes of observation time (or 42 hours) (p. 369). Given the evidence for the efficacy of approval or praise in reinforcing appropriate classroom social behaviour (e.g., Ferguson & Houghton, 1992; Merrett & Wheldall, 1987a, 1990; Wheldall & Merrett, 1984, 1989) this is a disturbing finding.

In summary, White (1975) reported that students received more total teacher disapproval in every grade (with the exception of Grade 1 and Grade 2); for instructional behaviour alone, the rate of teacher approval was higher than the rate of
teacher disapproval (particularly marked in the primary grades); and for managerial
behaviour alone, teacher disapproval far outweighed teacher approval, the latter being
"almost nonexistent" (White, 1975, p. 370). Similarly, Heller and White (1975)
investigated the effect of the ability level of the class on teachers’ rates of verbal
approval and disapproval. Five social studies teachers and five mathematics teachers
from an inner-city junior high school were observed teaching both higher and lower
ability classes. Heller and White found that teachers “emitted more disapprovals in
lower ability classes than in the higher ability classes” (p. 796). Moreover, the higher
rate of disapprovals directed at students in lower ability classes were predominantly
managerial in nature, addressing social (rather than academic) behaviours. Rates of
approval, however, did not change across ability groupings, were almost exclusively
directed toward academic behaviour, and exceeded the number of disapprovals of
academic behaviour (Heller & White).

In terms of subject taught there were differences evident between mathematics
and social studies teachers, with disproportionate amounts of disapproval being found
in social studies classes. In mathematics classes, on the other hand, the numbers of
disapprovals and approvals were roughly equal. As White (1975) had reported, Heller
and White (1975) also found that, in general, “teachers almost never praised pupils for
behaving well socially” (p. 796). An interesting anecdotal finding in this study was that
of the 1,105 evaluative verbal responses (EVRs, the total of approving and
disapproving statements) teachers made to students’ behaviour, only one of these
teacher responses was a managerial (or social) approval statement. On this one
occasion, a teacher said “Good” after a student indicated that he brought a pen to class
that day (Heller & White, p. 799). Clearly, teachers in this study did not praise students
for behaving appropriately, or for following classroom procedures (Heller & White).
Thomas, Presland, Grant, and Glynn (1978) sought to compare their findings with the natural rates of approval and disapproval reported by White (1975) for Grade 7 teachers in her earlier study. They investigated the natural rates of teacher verbal approval and disapproval in 10 Grade 7 classrooms in New Zealand. Their study did not, however, utilise the (useful if not critical) distinction between managerial (social) and instructional (academic) teacher responses, as White had done in her work. Moreover, observers only recorded as an approval response teachers’ verbal responses that were contingent on the on-task behaviour of the student being observed. Similarly, a disapproval response was recorded contingent on off-task behaviour being observed (Thomas et al., 1978). In other words, as a consequence of this method of classification, any non-contingent approval or disapproval received by students was not recorded. While one would consider it logically unlikely that students would be praised (or reprimanded) non-contingently, other research (reviewed later) has suggested that this can be the case.

Despite differences in observation techniques employed (in addition to cultural and other differences between the samples) the results of the study by Thomas et al. (1978) were broadly similar to those of White (1975). The majority of teachers displayed individual rates of disapproval that were higher than their individual approval rates. Moreover, 7 of the 10 teachers had disapproval rates at least three times greater than their approval rates. It is interesting to note that the rates of disapproval per observed minute for seventh graders in each study were exactly the same at 0.58. Approval rates per minute of observation in the Thomas et al. study were slightly lower at 0.20 than White reported for Grade 7 teachers (0.34).

All of the studies discussed thus far limited the definition of teacher approval and disapproval to verbal responses. In Australia, Russell and Lin (1977) broadened positive teacher attention or response to include non-verbal responses. In their study,
approval responses were deemed to include "contact, praise, facial attention, and academic recognition" (Russell & Lin, 1977, p. 151), with disapproval responses being defined as criticism, threats, facial attention, ignoring, holding the child, sending the child out of the room, and punishment. Selected students in one (only) Grade 7 class of 37 students were identified as belonging to the "worst behaved" group (WB) \( (n = 10) \) and the "best behaved" group (BB) \( (n = 10) \).

Results of the study indicated that the WB group received more teacher attention of any kind than the BB group. The teacher responded proportionately more to the inappropriate behaviour of the WB group, responding approximately 15% of the time to the inappropriate behaviour of this group, and only 2% of the time to the inappropriate behaviour of the BB group. This finding was predicted on the basis of the notion that teacher attention serves to maintain high rates of inappropriate classroom behaviour (Russell & Lin, 1977). An unexpected finding of the study, however, was that the teacher also responded proportionately more to the appropriate behaviour of the WB group, about 16% of the time, than to the appropriate behaviour of the BB group (3%). On the basis of this finding, the authors suggested that the high levels of appropriate behaviour of the BB group were not being maintained by teacher attention to this behaviour, and could have been maintained by factors other than teacher factors, some possibilities being intrinsic interest in work or by satisfaction in achievement and mastery (Russell & Lin, 1977). Caution should be exercised, however, in placing too much credence on explanations offered as a result of this study. Russell and Lin were relying, after all, on a sample of one teacher and her class. Findings from such a small sample should clearly be viewed with tentative interest at best. The significance of Russell and Lin's findings (1977) relates more to the fact that they appear to be the first to include non-verbal responses to the operational definition of teacher attention in the
investigations of naturalistic rates of teacher approval and disapproval, than the
generalisability of their findings.

In similar vein, Fry (1983) observed teacher-student interactions in classrooms
over a four-month period in order to examine similarities and differences in teacher-student interactions of "problem" and "non-problem" children. Due to the nature of the observation schedule used, teacher approvals and disapprovals were not recorded as such. Rather, 15 teacher and student process measure variables were utilised covering eight teacher behaviours and seven student behaviours. Teacher variables pertinent to the present discussion included "positive affect", operationally defined as teacher behaviours that show support or positive regard for students and their behaviour, including such behaviour as smiling, joking, reinforcement and praise, and "negative affect", defined as verbal or non-verbal behaviours reflecting hostility or negative feelings of the teacher, including negative teacher evaluation of student behaviour, expressing anger or criticism (Fry, 1983).

Fry (1983) found that problem children received less positive affect from
teachers, and received more negative affect from them, compared to their non-problem peers. Moreover, problem children obtained fewer "social contacts" with their teachers, received less "sustaining feedback" and were asked less frequently by their teachers "to express their personal views and preferences on academic and class-related issues" (Fry, 1983, p. 83).

In addition, the differences evident between the problem and non-problem groups increased over the period of a school term. Concomitant with the change in teacher behaviour, observations of problem children's behavioural interactions "suggest an increase in serious misdemeanours and a corresponding decline in sustained attention" (Fry, 1983, p. 79). It was reported that problem children's serious misbehaviours increased from one instance per hour to almost 2.8 instances per hour by
the end of the four-month period (Fry, 1983). Clearly, while causality between teacher behaviour and student behaviour cannot be established, this study provided an interesting perspective on the impact of teachers' social and affective orientation towards their students over time, particularly students who present as being behaviourally troublesome. Fry suggested that teachers needed to be more aware of their interactions with problem students, commenting that the results of the study:

....tentative as they are, suggest that problem children's disruptive behaviours and decline in sustained attention may not necessarily reflect true problem behaviour. It is quite likely that they are mediated more often than we suspect by the prevailing attitudes and orientations of the teacher (Fry, 1983, p. 87).

Strain, Lambert, Kerr, Stagg, and Lenkner (1983), in the United States, investigated children's compliance to teachers' requests, and the consequences for compliance. Nineteen teachers and 130 elementary school children from Kindergarten to Grade 3 were involved in this study of naturally occurring levels of teacher commands, and positive and negative teacher feedback. Students were selected on the basis of their social adjustment to school, being “high-rated” (making a good adjustment to school) or “low-rated” (not making a good social adjustment to school) (Strain, et al., p. 243). In the low-rated group (n = 55), boys outnumbered girls 3 to 1. In the high-rated group (n = 75), girls outnumbered boys by a 1.5 to 1 margin. There was an approximately equal distribution of high- and low-rated students across the 19 classes in the study. As was the case in the Russell and Lin (1977) study, Strain et al. included gestures as teacher responses, as well as verbal behaviour. Teacher behaviour was classified as: a) teacher's commands, demands, requests; b) teacher's positive social consequences; c) teacher's negative feedback; or d) teacher's repeated command, demand, request. Student behaviour was reported only as students' compliance (Strain
et al., pp. 246-7). For our purposes here, the findings for the classification “teacher’s positive social consequences” and “teacher’s negative feedback” are the most relevant.

Strain et al. (1983) reported that, given an episode of child compliance (by a member of either the low-rated or the high-rated group), the probability of positive social consequences was 0.10. Expressed differently, only 10 out of every 100 episodes of compliance were followed by positive feedback from the teacher. In addition to these low levels of approval, the differential treatment of the two groups was of particular interest. The vast majority (45/55 or 82%) of low-rated children never received any positive social consequences for compliance, compared with only 27% (or 20/75) of high-rated children. In terms of teachers’ negative feedback, the probability that teachers would respond was 0.14 for the low-rated group, and 0.10 for the high-rated group. This difference was not statistically significant, however. Overall, the general level of feedback, including both positive and negative responses, was considered low (Strain et al., 1983).

Strain et al. (1983), in addition to corroborating and expanding on previous studies such as White (1975) and Thomas et al. (1978), all of whom found that teachers were generally inclined to provide more disapproval than approval, reported another significant finding. Teachers in their study demonstrated that a good proportion of positive feedback provided may have been contingent on non-compliance. In fact, misplaced positive contingencies occurred almost as often as appropriately delivered consequences. As Strain et al. concluded, it would appear that the group of children “most in need of systematic feedback (low-rated group) were exposed regularly to contingency arrangements counterproductive to compliance” (p. 248).

These findings, considered with the findings of Russell and Lin (1977) and Fry (1983) described above, suggest that teachers, at best, were not taking advantage of opportunities to reinforce appropriate behaviour in any overt, systematic way. At worst,
they could have been reinforcing the inappropriate behaviours of their students. It would appear from these three studies that the students most affected by this style of behaviour management (or mismanagement) were those who most desperately needed classroom behaviour management to be effective.

7.5 The Shift to More Teacher Approval Than Disapproval

With the exception of the studies reported by Brophy (1981), all other studies reported thus far found that teachers disapproved of student behaviour more than they approved of it. Findings from a study by Nafpaktitis et al. (1985) carried out in 84 classrooms in 29 intermediate schools in Los Angeles, however, changed this trend of results. The purpose of this study was to investigate the naturally occurring rates of verbal and non-verbal teacher approval of appropriate student behaviour, approval of inappropriate student behaviour, and teacher disapproval. The distinction between appropriate approval and inappropriate approval was as follows: appropriate approval was defined as approval following student on-task behaviour and inappropriate approval as following student off-task behaviour (Nafpaktitis, et al., 1985).

As indicated above, and in contrast to most previous studies, Nafpaktitis et al. (1985) found that teachers provided students with more appropriate approval responses than disapproval responses. For most classes in the study, higher rates of student on-task behaviour were associated with higher rates of approval and lower rates of disapproval. Approval responses were observed as occurring at the mean rate of 1.3 per minute, although 0.40 of these were classified as “inappropriate approval”, leaving a mean rate of 0.90 appropriate approval responses per observed minute. [This finding confirmed Strain et al.’s (1985) concern with inappropriately delivered consequences described above.] Disapproving responses were occurring at the lower mean rate of 0.29 per minute observed (Nafpaktitis et al., 1985). Nafpaktitis et al. explored the
relationship between teacher response and student on-task behaviour, to be returned to later in this chapter.

In terms of the trend of findings reported so far [with the exception of Brophy, (1981)], it would seem prudent to heed Nafpaktitis et al.'s (1985) caution that it was perhaps “premature” (p. 366) to conclude that the findings of the previous studies (such as White, 1975; Heller & White, 1975) reflect the norm in terms of teachers’ use of approval and disapproval. In light of the work reported from the mid 1980’s on, this advice would appear to be well founded.

A study in the United States designed largely as a follow-up to White (1975), and conducted by Wyatt and Hawkins (1987), confirmed that the caution issued by Nafpaktitis et al. (1985) was indeed warranted. In their study of 35 classrooms, which included classes from Kindergarten to Grade 4, as well as Grades 9 and 12, a modified version of the TAD observation schedule (the instrument used in White’s study) was utilised. The modification involved determining whether verbal responses to students’ behaviour were descriptive or non-descriptive (Wyatt & Hawkins, 1987). This study sought to determine the rates of teachers’ verbal approval and disapproval in relation to grade level, classroom activity, student behaviour, and teacher characteristics (Wyatt & Hawkins, 1987). Teachers were observed for five 30 minute sessions over a two week period. The exclusion of non-verbal teacher responses made this study more similar to the early work in this area and dissimilar to Nafpaktitis et al. (and later studies to be reported) who examined both verbal and non-verbal approval and disapproval. Wyatt and Hawkins (1987) stated that one of the reasons for their study was to clarify the discrepancy between the rates found by White and Nafpaktitis et al.

Unlike White (1975), who found a preponderance of disapproval at every grade above Grade 2, Wyatt and Hawkins (1987) showed that approval was more frequent than disapproval at every grade level involved in their study. Approval was highest in
Grade 1 where teachers provided 0.52 responses per minute, after which they generally declined (with the exception of Grade 9 where teachers were found to provide approval at the rate of 0.40 responses per minute, on average). By Grade 12, teachers were providing approval at the mean rate of 0.17 responses per minute.

In terms of disapproval, there was a similar pattern to the data with disapproval peaking in Grade 1 (0.52 responses per minute) and declining thereafter, except (again) for Grade 9 where teachers responded disapprovingly at the mean rate of 0.23 responses per minute. Again, by Grade 12, teachers were providing disapproval responses at the lowest rate across all grades (0.11 responses per minute, on average). While the pattern of disapproval responses was similar to approval responses across grades, they were significantly lower ($p < .05$ or less) than approval responses in all grades except in Grade 1 and Grade 3 (Wyatt & Hawkins, 1987).

Notwithstanding the difference in findings that showed approval predominating teacher responses, Wyatt and Hawkins (1987) claimed that the absolute levels of responses found in their study were often similar to those found by White (1975). Extrapolating mean total approval and disapproval rates from information presented in the report of their study (Wyatt & Hawkins), a mean total approval rate of 0.38 responses per minute and a mean total disapproval of 0.28 per minute was found in the 1987 study. [Note. No mean total rates were reported by White (1975). Rather, results were presented discretely by grade.] Moreover, both studies found a (generally) declining trend across grades for teacher approval. (Disapproval tended to decline more consistently after Grade 9 in both studies.) Another area of agreement between the two studies related to the finding that approvals were primarily for academic behaviour (instructional was the term used in White’s study), whereas disapprovals were primarily for conduct, (or managerial in the case of White’s study) (Wyatt & Hawkins), a situation that pertained at every grade level, in both studies. For instance, when the
data for all teachers were combined in the Wyatt and Hawkins’ study, the average teacher praised academic behaviours at a rate of 0.33 per minute, whereas conduct behaviours were approved of infrequently at only 0.05 per minute, a difference which was statistically significant at the 1% level (Wyatt & Hawkins). Similarly, academic behaviours were disapproved of 0.09 times per minute, on average, whereas conduct behaviours were disapproved of at a rate of 0.19 times per minute, again statistically significantly different at the 5% level (Wyatt & Hawkins).

The finding that there were no statistically significant relationships between teachers’ age, years of full-time teaching experience, recency of teachers’ latest degree, and approval and disapproval rates led Wyatt and Hawkins (1987) to conclude that no assumptions should be made about the “type” of teacher who is likely to deliver appropriate levels of approval and disapproval in the classroom. Rather, they claimed, any need for “retraining” should be made on the basis of direct classroom observation and the outcomes teachers produce (Wyatt & Hawkins). Moreover, Wyatt and Hawkins argued that such assessment and retraining should be carried out by behaviour analysts in schools; a likely outcome of such intervention being improved “academic performance, conduct, and enjoyment of school for both students and teachers” (1987, p. 48).

7.6 The Changing Measurement of Teacher Approval and Disapproval

In Brophy’s (1981) functional analysis of teacher praise, referred to earlier, he made the distinction, both for “praise” and “criticism”, between simple feedback statements and teacher reactions that go beyond “mere affirmation of correctness of response” (p. 6). As Schweiso and Hastings (1987) pointed out this distinction was particularly important for Brophy since he argued that feedback was virtually never harmful whereas praise may be. Moreover, they believed this distinction may, in part,
be responsible for the depressed rates of both praise and criticism found in the studies he reported compared to those found in White (1975) and Heller and White (1975), for example (Schwieso & Hastings, 1987). Brophy considered that praise may be defined as having the same meaning and connotations as it does in everyday language: “to commend the worth of or to express approval or admiration” (Brophy, 1981, p. 5). Brophy also distinguished praise and criticism from more global approaches such as “warmth” or “hostility” (p. 6).

While Schwieso and Hastings (1987) acknowledged that Brophy’s (1981) distinction between feedback and praise made conceptual sense, they also conceded that, in practice, it “may be difficult to decide, when, for instance, a teacher says ‘Correct!’, whether it includes an evaluative component or is pure feedback” (Schwieso & Hastings, p. 116). Accordingly, they argued that observation systems that employed categories such as approval, positive approval, or positive feedback minimised the practical difficulties of classifying a response as an evaluative comment (for example, communicating approval) or purely as a feedback statement (Schwieso & Hastings). Such observation schedules included within them all those teacher actions, “which, on the face if it, seem to include some degree of evaluation” (Schwieso & Hastings, p. 116). Merrett and Wheldall (1986) developed such an observation system known as OPTIC (Observing Pupils and Teachers In Classrooms). Teacher approvals, which Merrett and Wheldall termed positive events, and teacher disapprovals, correspondingly called negative events, included both verbal and non-verbal manifestations of approval and disapproval.

Given that many of the remaining studies to be reported have utilised the OPTIC schedule (as well as the study in Chapter 8 to follow), some details of the schedule’s characteristics are included. OPTIC, allows the observer to look systematically at two main aspects of classroom behaviour (namely teacher behaviour and student behaviour,
specifically on-task behaviour) (Merrett & Wheldall, 1987b). In section A of the
schedule, the observer is concerned with positive (approval or praise) and negative
(disapproval or reprimand) teacher responses to students’ academic and social
behaviours. For the purposes of this schedule, instructional language is ignored. Section
B is concerned with estimating students’ on-task behaviour. Observers alternate
between section A and section B at three minute intervals, fives times for each section.
Each observation session lasts a total of 30 minutes. Typically, a class is observed on at
least three separate occasions (Merrett & Wheldall, 1986). The instrument has been
shown to be both reliable and valid, with inter-observer agreement figures for both
sections of the schedule averaging over 90% (Merrett & Wheldall, 1986; Merrett &
Wheldall, 1987b).

Employing the OPTIC schedule, Merrett and Wheldall (1987b) reported the
natural rates of teacher approval and disapproval in British primary and middle school
classrooms. The sample consisted of 128 primary and middle school teachers and their
classes. Merrett and Wheldall (1987b) found that teachers typically responded with
more approval than disapproval to their students. This finding confirmed the earlier
finding of Nafpaktitis et al. (1985), as well as the contemporaneous work of Wyatt and
Hawkins (1987), whose studies were both conducted on the other side of the Atlantic in
the United States of America, thereby providing evidence of generalisability of this
phenomenon across countries and education systems. Expressed as a percentage of the
total responses to student behaviour, Merrett and Wheldall (1987b) found total approval
to academic and social behaviours (56%) was slightly higher than total disapproval to
these behaviours (44%). Expressed as a mean rate per minute, total approval to student
behaviour occurred at the rate of 1.15 (similar to the rate reported by Nafpaktitis et al.
of 1.3 per minute, reported earlier. Note, however, 0.40 of this approval was deemed
inappropriate approval, resulting in a rate of appropriate approval of 0.90 per minute).
Total disapproval occurred at a rate of 0.93, a somewhat higher figure than that found by Nafpaktitis et al. (0.29), and that found by Thomas et al. (1978) for Grade 7 students in New Zealand (0.58), and reported earlier.

Although overall rates of approval were found to be higher than disapproval in the study by Merrett and Wheldall (1987b), a high proportion of this teacher approval was in response to students' academic behaviour. For academic behaviour alone, positive responses were three times as frequent as negative responses. On the other hand, negative responses to social behavior were five times as frequent as positive responses. The findings from this study demonstrated that while teachers were very adept at recognising and rewarding appropriate academic behaviour, the same could not be said about their ability to recognise and reward appropriate social behaviour. Consequently, while approval for academic behaviour was much higher than disapproval, for social behaviour the reverse was the case. Merrett and Wheldall argued that teachers were:

.....very quick to notice social behaviour of which they disapprove and continually nag children about it ....But they hardly ever approve of desirable social behaviour ...In other words, children are expected to behave well and are continually reprimanded if they do not”.

(1987b, p. 100)

Merrett and Wheldall’s (1987b) findings in relation to teacher responses to social behaviour confirmed both earlier (Brophy, 1981; Heller & White, 1975; Nafpaktitis et al., 1985; White, 1975) and contemporaneous (Wyatt & Hawkins, 1987) findings.

Having investigated natural rates of teacher approval and disapproval in primary and middle schools, Wheldall et al. (1989) extended their work to British secondary school classrooms. A sample of 130 secondary school teachers and their classes were
observed, the *OPTIC* schedule being employed once again. Students in the classes ranged in age from 11 to 16 years. In line with the findings from the earlier primary/middle school study, Wheldall et al. found that teachers used more approval (55% of the total responses) than disapproval overall, a figure almost exactly the same as for the earlier study (56%) reported above. Once again, “most of the approval was directed at academic pupil behaviours, whereas most of the disapproval was for inappropriate social behaviour” (Wheldall et al., 1989, p. 38). For academic behaviour alone, positive responses were three times as frequent as negative responses, the exact opposite being the case for responses to social behaviour (i.e., three times as many negative responses as positive). The total approval rate expressed as a mean per observed minute was 0.65, substantially lower than the rate in the primary/middle school study (1.15). The total disapproval rate of 0.53 was, again, considerably lower than in the primary sample (Wheldall et al., 1989).

The rates of both approval and disapproval found by Wheldall et al. (1989) were higher than those found by Wyatt and Hawkins (1987) where approval occurred at rates of 0.40 and 0.17 per minute for Grades 9 and 12 respectively, while disapproval occurred at rates of 0.23 and 0.11 per minute for Grades 9 and 12, respectively. It should be remembered, however, that in the Wyatt and Hawkins (1987) study verbal responses only were recorded. This difference of approach could account for the higher levels of both approval and disapproval in the UK study (Wheldall et al.).

When the data were analysed according to age of class taught, Wheldall et al. (1989) confirmed White’s (1975) (general) finding that as students increased in age, teacher *approval* decreased accordingly (although Wheldall et al. concluded that, in general, differences between year groups were small). A similar finding was evident in the Wyatt and Hawkins (1987) study. While in agreement with White (1975) over the general trend of decreasing absolute rates of approval as age of students increased, the
predominance of approval over disapproval is a major point of difference between Wheldall et al. and White, as well as with other earlier high school studies such as Heller and White (1975), and Thomas et al. (1978) "who found teachers in grades 7 and 9 more disapproving than approving" (Wheldall et al., p. 45). [As already indicated, White had found more disapproval than approval in all secondary classes included in her study (1975)]. The data from Wheldall et al. (1989) is in line, however, with the findings of Nafpaktitis et al. (1985) and Wyatt and Hawkins (1987) in respect of teachers being, overall, more approving than disapproving of their students.

Further investigations into the natural rates of teacher approval and disapproval using OPTIC were carried out by Winter (1990) in secondary school classes in Hong Kong. Eighty-six teachers and their classes were observed (on one occasion only), providing data that confirmed many of the findings of Wheldall et al. (1989) (the secondary school study). Winter also found that teacher approval overall (63%) exceeded teacher disapproval, with approval to academic behaviour (50% of all responses) accounting for the vast majority of approval responses. While not provided in the article, absolute rates per minute can be extrapolated from the data Winter provided. Teacher approval occurred at the mean rate of 1.0 per minute, while teacher disapproval was a little more than half the rate of approval at 0.58 responses per minute. Positive responses to academic behaviour were the most prevalent (0.79 responses per minute); the approval to appropriate social behaviour being approximately one quarter of this figure at 0.21 responses per minute. When it came to disapproval, teachers provided more negative responses to the social behaviour of their students (0.33 responses per minute) than their academic behaviour (0.25 responses per minute), in line with previous studies (Merrett & Wheldall, 1987b; Wheldall et al., 1989; Wyatt & Hawkins, 1987).
Further work in this area was reported by Charlton et al. (1995). Observations using the OPTIC schedule were undertaken in 15 classes on the isolated Atlantic island of St Helena. Students in the study ranged in age from seven years to 10 years, being drawn from three “first” and three “middle” schools. Five classroom observations were obtained for each teacher and class. Findings from St Helena classrooms showed that teachers distributed more approval than disapproval responses to their students’ behaviour (Charlton et al.). Clearly, this finding replicated those found by Nafpaktitis et al. (1985), Merrett and Wheldall (1987b), Wyatt and Hawkins (1987), Wheldall et al. (1989), and Winter (1990). The mean rate per minute for total approval was 1.61 and 1.41 in first and middle schools respectively, with the mean rate for total disapproval being 0.50 and 0.89 for first and middle schools respectively. The approval rates reported here are higher than for any other study reported in this chapter.

A major difference in the findings of Charlton et al. (1995) was evident, however. In the case of first schools, more teacher responses were made to social (57%) behaviours than to academic behaviours (43%). In no other study has this been the case. In fact, three times as many approval as disapproval responses were made by first school teachers to both academic and social behaviours. In the middle schools group, marginally more responses were made to academic (52%) than to social behaviours (48%), being more in line with trends in other studies. The rate of approval to social behaviour was still high relative to other findings, however. Moreover, in this study, first and middle school student academic and social behaviour both attracted more approval responses from teachers than disapproval responses.

Charlton et al. (1995) posit a number of possible explanations as to why teachers in St Helena were so approving, ranging from reasons of geographical isolation, cultural differences in interactions, the absence of television, to the teachers on the island “getting it right” (p. 824) in terms of classroom behaviour management.
High levels of on-task behaviour reported in this study (96% for first and 92% for middle schools), together with mode of teacher responses suggest that the classrooms of St Helena are an exemplar of effective classroom behaviour management.

Following the earlier work in this area [and specifically that of Merrett and Wheldall (1987b), Wheldall et al. (1989), and Wyatt and Hawkins (1987)], Harrop and Swinson (2000) sought to examine teacher approval and disapproval “a further ten years later” (p. 473) in the context of British classrooms. Unlike earlier studies, Harrop and Swinson used radio microphones to record teacher responses in 10 classes at each level of infants, junior, and secondary schooling. They reported that their results were generally in line with the investigations of the 1980s, specifically those of Merrett and Wheldall (1987b), Wheldall et al. (1989), and Wyatt and Hawkins (1987), where approval rates were higher than disapproval rates at each school level (Harrop & Swinson, 2000). Similarly, they found (like many other researchers, such as Merrett & Wheldall, 1987b; Wheldall et al., 1989; White, 1975; Winter, 1990; Wyatt & Hawkins, 1987) that, overall, teachers gave higher rates of approval for academic behaviours than for social behaviours and higher rates of disapproval for social behaviours than academic behaviours (Harrop & Swinson). Combining the data from all levels of schooling (there were very few differences in each level, see below), teachers in this study provided, on average, 1.30 approval responses per minute and 0.58 disapproval responses per minute (Harrop & Swinson). Of particular relevance to this thesis, is the finding that secondary teachers in this study provided, on average, 1.27 approval responses and 0.42 disapproval responses per minute (Harrop & Swinson). This compares with Wheldall et al., and Winter who, while finding lower rates of approval at the secondary level (0.65 and 1.0 responses per minute respectively), found very similar rates of disapproval (0.53 and 0.58 responses per minute) to Harrop and Swinson (0.58 negatives responses per minute).
The summary of reported rates of teacher approval and disapproval to academic and social behaviour detailed by Harrop and Swinson (2000) provides a clear picture of what was occurring in the classrooms in this study. While disapproval to academic behaviour occurred about 14 times every hour, disapproval to social behaviour occurred at the higher rate of about 21 responses per hour. In sharper contrast, approval to academic behaviour occurred at the high rate of about 72 times per hour, whereas approval to social behaviour occurred only about three times in an hour (Harrop & Swinson). It was clear that while students were receiving considerable positive feedback about their academic behaviour, being recognised for behaving appropriately was a rare occurrence. Furthermore, the finding that the ratio of approval to disapproval for social behaviour (0.04 to 0.61 or 1:15) was the same as reported in White (1975) for the parallel response category managerial behaviour (Harrop & Swinson), is compelling evidence that not much has changed in terms of how teachers respond to the inappropriate social behaviour of their students in the quarter of a century since White first investigated natural rates of approval and disapproval.

Unlike earlier studies (such as White, 1975; Wyatt & Hawkins, 1987; Wheldall et al., 1989), Harrop and Swinson (2000) did not find that teacher approval decreased with the increasing age of students and reported that there were no statistically significant differences in approval rates between infants, primary, and secondary classes involved in their study. As noted above, another point of difference between Wheldall et al. (the most relevant earlier study in terms of secondary classes) and Harrop and Swinson, was that the level of approval in the latter study was twice that found in Wheldall et al. for British secondary classes. Moreover, a deviation from the pattern of typical responses was evident in the secondary classes (only) in this study, where teachers gave more disapproval to academic behaviours than to social behaviours (notwithstanding the general statements above). This anomaly was commented on by
the authors who stated, "That the results for the secondary study did not fit the overall pattern may or may not be a chance aberration" (Harrop & Swinson, p. 481.)

Table 7.1 provides a summary of the natural rates of teacher approval and disapproval reported in relevant studies from the seminal work of White (1975) to the most recent study by Harrop and Swinson (2000). Comparative rates of approval and disapproval per minute are presented. Some of these data have been extrapolated from information in the studies where they were not reported directly. In addition, a summary is provided of teacher approval in the various studies, expressed as a percentage of all responses, to provide a means of comparing teacher approval behaviour over time.
Table 7.1

Natural Rates (Per Minute) of Teacher Approval and Disapproval and Percentage of All Responses Being Approvals - Empirical Studies

<table>
<thead>
<tr>
<th>Study/Place</th>
<th>Approval</th>
<th>Disapproval</th>
<th>% Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>White (1975)</td>
<td>0.41</td>
<td>0.46</td>
<td>47</td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heller &amp; White (1975)</td>
<td>0.29</td>
<td>0.52</td>
<td>36</td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thomas, Presland, Grant, &amp; Glynn (1978)</td>
<td>0.20</td>
<td>0.58</td>
<td>26</td>
</tr>
<tr>
<td>NZ</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nafpaktitis, Mayer &amp; Butterworth (1985)</td>
<td>0.90</td>
<td>0.29</td>
<td>76</td>
</tr>
<tr>
<td>US</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wyatt &amp; Hawkins (1987)</td>
<td>0.38</td>
<td>0.28</td>
<td>58</td>
</tr>
<tr>
<td>USA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Merrett &amp; Wheldall (1987)</td>
<td>1.15</td>
<td>0.93</td>
<td>55</td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whedall, Houghton &amp; Merrett (1989)</td>
<td>0.65</td>
<td>0.53</td>
<td>55</td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Winter (1990)</td>
<td>1.0</td>
<td>0.58</td>
<td>63</td>
</tr>
<tr>
<td>Hong Kong</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charlton, Lovemore, Essex, &amp; Crowie (1995) (first schools)</td>
<td>1.61</td>
<td>0.50</td>
<td>76</td>
</tr>
<tr>
<td>St Helena</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charlton, Lovemore, Essex, &amp; Crowie (1995) (middle schools)</td>
<td>1.41</td>
<td>0.89</td>
<td>61</td>
</tr>
<tr>
<td>St Helena</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Harrop &amp; Swinson (2000)</td>
<td>1.30</td>
<td>0.58</td>
<td>69</td>
</tr>
<tr>
<td>UK</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As can be seen from Table 7.1, and as already mentioned, a shift from a preponderance of disapproval to approval was reported from the mid-1980s with the shift being sustained to the most recent study by Harrop and Swinson (2000). But not all agree that this shift has represented much of a change in teacher responses. Others argue for the fact that there has been little change in classroom interactions since the mid 1970s. Galton, Hargreaves, Comber, Wall, and Pell (1999a), who conducted a
repeat of the ORACLE (Observational Research and Classroom Learning Evaluation) study (the first of which involved 58 British junior classrooms over a five year project in the UK and which commenced in 1975) found, among other things, results that suggested that the balance between teachers' use of praise and criticism had remained constant over the twenty years between 1976 and 1996 (Galton et al., p. 33). While changes such as increases in the amount of whole-class teaching were evident, there was no evidence of any radical shift in the pattern of the "moment by moment exchanges taking place between teachers and pupils" (Galton et al., p. 33). In spite of considerable evidence that teacher manipulated rates of approval and disapproval can change the behavioural characteristics of the classroom, it would appear that many teachers still fail to take full advantage of this potentially powerful behaviour management tool. Or, as Wyatt and Hawkins (1987) observed some time ago:

[we] believe that teacher approval is a profoundly important and primarily positive tool in education. This opinion seems widespread because it is commonplace now to teach education students about the importance of contingent approval, although training them to use it appears to be unusual. (p. 28)

7.7 Relationships Among Teacher Responses and Between Teacher Response and Student On-task Behaviour

7.7.1 Relationships Among Teacher Responses

Some researchers who have investigated discrete types of teacher attention have explored possible relationships among the various forms of teacher attention. For instance, at the primary school level, Merrett and Wheldall (1987b), found that teacher approval to academic behaviour was significantly, but weakly ($r_s = 0.15, p < .05$) related to disapproval of academic behaviour, but was also inversely related to disapproval of social behaviour ($r_s = -0.29, p < .01$). In addition, disapproval of
social behaviour was significantly related to disapproval of academic behaviour \( (r_s = -0.27, p < .01) \). No other teacher responses were related in that study.

Wheldall et al. (1989), in their secondary school study, reported that teacher approval to academic behaviour was significantly related to disapproval of academic behaviour \( (r_s = 0.46, p < .001) \), a relationship that had been only weak in the parallel primary study (reported above). Teacher approval to academic behaviour was also strongly related to approval of social behaviour \( (r_s = 0.49, p < .001) \). Another relationship was evident between teacher disapproval of academic behaviour and approval of social behaviour \( (r_s = 0.30, p < .001) \). Except in respect of the similarities regarding approval and disapproval of academic behaviour (which were weak in the primary study), there were no similarities in terms of the relationships among teacher response variables in the Wheldall and Merrett and Wheldall et al. studies (1987, 1989).

Nafpaktitis et al. (1985) presented information regarding the intercorrelations among teacher behaviour and student behaviour (to be reported below). Among the teacher response variables alone, while there were no relationships evident between teacher disapproval and either appropriate approval or inappropriate approval (both \( r = -.14 \)), there was some relationship evident between teacher disapproval and inappropriate approval \( (r = .27, p < .05) \) in their study.

Winter (1990) provided a slightly different form of relationships analysis among teacher response variables and reported a significant relationship between total teacher approval and approval to academic behaviour \( (r = .5387, p < .001) \). Conversely, there was a relationship between teacher disapproval and disapproval to social behaviour \( (r = .5384, p < .001) \) in his Hong Kong study. These relationships merely support the findings reported earlier that most teacher approval is directed at academic behaviour and most teacher disapproval is directed at the social behaviour of students.
Swinson and Harrop (2001) found that while teacher approval and teacher disapproval were significantly and inversely correlated at the junior school level ($r_s = - .71, p = .023$), this was not the case at the infants’ school level ($r_s = -.35, p = .327$). They interpreted this to mean that “junior school teachers who give high levels of approval tend to give relatively low levels of disapproval and vice versa, as might be expected” (Swinson & Harrop, pp. 163-4). They attributed the absence of this relationship as possibly being the result of a different behaviour management approach at the infants’ level, where “a certain amount of disapproval may constitute guidance for infant school pupils” (Swinson & Harrop, p.165). But these findings at the junior school level (in Swinson and Harrop) are at odds with those found by Merrett and Wheldall (1987b) in their junior school study. It would appear that there is little evidence for consensus or trends across studies regarding the nature of any relationships among the types of teacher response.

7.7.2 Relationship Between Teacher Response and Student On-task Behaviour

Of more obvious educational relevance, several researchers have explored the relationship between various teacher responses and students’ on-task (or off-task) behaviour). Nafpaktitis et al. (1985) argued that the amount of disruptive and off-task behaviour was clearly related to the teacher’s use of approval and disapproval. In their intermediate school study, they found that teacher disapproval scores were positively correlated ($p < .01$) with off-task behaviour (.54). Nafpaktitis et al. also noted the relationships between their data and that of Thomas et al. (1978) who had similarly found a negative correlation (-.48) for teacher disapproval and student on-task behaviour. In Nafpaktitis et al., the correlation between off-task behaviour and appropriate approval was weaker ($p < .05$) at -.21. (Thomas et al. found a correlation of .40 for teacher approval and student on-task behaviour). These figures confirm, in
effect, those of Thomas et al. (1978), where “the disapproval correlation with student on- or off-task behavior was higher than the approval correlation” (Nafpaktitis et al., p. 365).

The effect of inappropriate approval, a phenomenon that Nafpaktitis et al. (1985) considered may occur frequently in the “typical classroom” by way of teachers unintentionally reacting to “inappropriate student behaviors with their attention and even approval” (p. 362), was also considered in their study. The correlation between off-task behaviour and inappropriate approval from the teacher was found to be .40 (p < .01). But one of the largest positive correlations found in the study was that between inappropriate approval and disruptive student behaviour (.52, p < .01), higher rates of approval of off-task behaviour being associated with higher rates of disruptive behaviour. Moreover, in general, the higher the inappropriate approval, the lower the student on-task behaviour (Nafpaktitis et al.).

While being cautious about the conclusions that can be drawn about cause and effect from a correlational, non-experimental study, Nafpaktitis et al. (1985) suggested that the attention provided by disapproval reinforces the inappropriate behaviour that it follows, given that a positive significant correlation existed between the rate of disapproval and the rate of off-task behaviour in their study. Nafpaktitis et al. argued that inappropriate approvals:

……may also have a devastating effect on classroom management if responding to disruptive behaviours such as talking out or being out of one’s seat reinforces these behaviours……,[some students] may find it reinforcing to irritate teachers (resulting in disapproval) and may respond to inappropriate approval in the same way as they do to appropriate approval (i.e., with an increase in approved behavior). (pp. 365-6)
As was the case with Nafpaktitis et al., Wheldall et al. (1989) reported interesting correlational data in their secondary school study. Highly significant positive correlations \((p < .001)\) were found between on-task behaviour and both approval to academic behaviour (.44) and approval to social behaviour (.37). A similarly significant negative correlation existed between teacher disapproval to social behaviour and on-task behaviour (-.32) in that study (Wheldall et al.). They concluded that, “Teachers who used more praise and fewer instances of disapproval to social behaviour experienced higher levels of on-task behaviour in their classroom” (Wheldall et al., p. 46). Earlier, however, Merrett and Wheldall (1987b) had found that the strongest predictor of on-task behaviour in their primary and middle school study was a negative correlation with disapproval for social behaviour (-.31, \(p < .01\)).

Winter (1990) also found a strong positive correlation between total teacher approval and on-task behaviour (.40) in secondary classes in Hong Kong [a very similar finding to the Wheldall et al. (1989) secondary school study]. In addition, a strong negative correlation (-.40) existed between disapproval and on-task behaviour (again similar to the British study reported above) (Winter, 1990). Although, these findings confirmed the findings of Wheldall et al., a degree of caution should be exercised given that the data were based on one observation only per teacher, not the minimum of three as recommended when using OPTIC (Merrett & Wheldall, 1986).

In a subsequent and related article to Harrop and Swinson (2000), the same researchers looked at the relationships between teacher approval and disapproval in the junior and infant classrooms (Swinson & Harrop, 2001) and student on-task behaviour. In line with the findings of other researchers (Wheldall et al., 1989; Winter, 1990), Swinson and Harrop found some evidence that student on-task behaviour increased with higher levels of teacher approval. At both school levels there was a positive trend in the relationship between teacher approval and on-task behaviour, but only in the
infant school data was the trend statistically significant (Swinson & Harrop). For both types of school there was an almost zero correlation between teacher disapproval and on-task behaviour.

The data relating to *optimal* rates of disapproval found in Swinson and Harrop (2001) provide food for thought. Tending towards a curvilinear relationship, higher levels of on-task behaviour were associated with mid-range levels of disapproval, while lower rates of on-task behaviour were associated with both low and high levels of disapproval (Swinson & Harrop). The authors drew the conclusion (while advisedly cautioning against drawing too firm a conclusion from correlational data) that it would seem reasonable to assume that both too little *and* too much disapproval in the classroom can be counterproductive (Swinson & Harrop). According to the data available from their study of 10 classes at each school level, Swinson and Harrop argued that optimum levels of teacher disapproval were around 1.1 per minute in the infants’ school and, almost half, at 0.6 per minute in the junior school. They argued that it may be counterproductive to drop the rate of disapproval too low (Swinson & Harrop). As the authors pointed out, much is made of teachers increasing their use of approvals and decreasing disapprovals in courses dealing with effective classroom behaviour management. While reiterating that the evidence for the relationship between higher on-task levels and increased use of approvals was confirmed by the findings of their study, they also raised a caution about how teachers should be advised regarding their use of disapprovals. Swinson and Harrop argued that the judicious use of disapprovals may have an important part to play in the management of the classroom, particularly in the infants’ school where students are new to the mores of the classroom and the expectations of teachers in relation to appropriate classroom behaviour.
By way of summary, the studies reviewed in this chapter are presented in Table 7.2. Presented in chronological order, this summary provides basic information regarding the location, participants, and main findings from each study. It is not intended to be a comprehensive critique of each study, but rather a guide to the relevant findings in respect of the present research focus.
### Table 7.2

**Summary of Studies and Critiques on Teachers' Use of Approval And Disapproval**

<table>
<thead>
<tr>
<th>Author/s</th>
<th>Year</th>
<th>Place</th>
<th>Subjects</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>1975</td>
<td>USA</td>
<td>104 teachers Students in Grades 1-12</td>
<td>More verbal disapproval than verbal approval overall, after grade 2.</td>
</tr>
<tr>
<td>Heller &amp; White</td>
<td>1975</td>
<td>USA</td>
<td>10 teachers (5 mathematics) (5 Social Studies) Students in Grades 7-9</td>
<td>Teachers use more disapproval than approval overall. Teachers use more verbal disapproval in lower ability classes than in higher ability classes. Teachers use more approval than disapproval for instructional (academic) behaviour. Teachers use more disapproval for managerial (social) behaviour than for instructional behaviour.</td>
</tr>
<tr>
<td>Thomas, Presland, Grant, &amp; Glynn</td>
<td>1978</td>
<td>New Zealand</td>
<td>10 teachers 10 Grade 7 classes</td>
<td>Majority of teachers had higher individual verbal disapproval rates than individual verbal approval rates.</td>
</tr>
<tr>
<td>Russell &amp; Lin</td>
<td>1977</td>
<td>South Australia</td>
<td>1 Grade 7 teacher 20 target students 10 WB (Worst Behaved) 10 BB (Best Behaved)</td>
<td>Teacher responded at a higher rate to the inappropriate behaviour of the WB group than the BB group.</td>
</tr>
<tr>
<td>Brophy</td>
<td>1981</td>
<td>USA</td>
<td>Reports the results of six studies between 1973 and 1980 from grades 1-8.</td>
<td>Teachers overall showed more approval than disapproval; were more likely to approve of academic behaviour than disapprove of it; were more likely to disapprove of academic behaviour than to approve of social behaviour.</td>
</tr>
<tr>
<td>Fry</td>
<td>1983</td>
<td>Canada</td>
<td>28 teachers and 400 students at elementary school level Subjects selected on the basis of being a problem/non-problem student.</td>
<td>&quot;Problem&quot; children received less positive affect and more negative affect from their teachers than their non-problem peers. A deterioration in interactions with the teacher over time was evident, as were increased serious misdemeanours with a corresponding decline in attention.</td>
</tr>
<tr>
<td>Strain, Lambert, Kerr, Stagg, &amp; Lenkner</td>
<td>1983</td>
<td>USA</td>
<td>19 teachers and 130 children in kindergarten to grade 3 Subjects classed according to making good (poor) social adjustment to school</td>
<td>Found low levels of feedback, both positive and negative. Found teachers used more disapproval than approval overall. Found a good proportion of positive feedback was contingent on non-compliance.</td>
</tr>
<tr>
<td>Nafpaktitis, Mayer, &amp; Butterworth</td>
<td>1985</td>
<td>USA</td>
<td>84 teachers in their classes in intermediate school</td>
<td>Mean rates of teacher approval were found to exceed rates of disapproval, in contrast to previous studies. Teacher disapproval scores were positively correlated with off-task behaviour.</td>
</tr>
</tbody>
</table>
### Table 7.2 (cont.)

**Summary of Studies and Critiques on Teachers' Use of Approval And Disapproval**

<table>
<thead>
<tr>
<th>Author/s</th>
<th>Year</th>
<th>Place</th>
<th>Subjects</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wyatt &amp; Hawkins</td>
<td>1987</td>
<td>USA</td>
<td>35 classes in Grades K-4, 9 &amp; 12. Designed as a replication of White, 1975</td>
<td>Mean rates of teacher approval to be more frequent than disapproval at every grade level (unlike White, 1975), confirming results of studies such as Nafpaktitis et al. (above). Approval and disapproval generally declined over grade level (peaking at Grade 1 for both approval and disapproval). Similar finding to White (1975). Absolute levels of approval and disapproval in several grades were similar to those found in White (1975).</td>
</tr>
<tr>
<td>Merrett &amp; Wheldall</td>
<td>1987</td>
<td>UK</td>
<td>128 British primary and middle school teachers and their classes</td>
<td>Teachers used more approval (56%) than disapproval (44%) overall. For academic behaviour positive responses were three times as frequent as negative responses. For social behaviour, negative responses were five times as frequent as positive responses.</td>
</tr>
<tr>
<td>Wheldall, Houghton &amp; Merrett</td>
<td>1989</td>
<td>UK</td>
<td>130 British secondary school teachers and their classes</td>
<td>Teachers used more approval (55%) than disapproval overall. For academic behaviour positive responses were three times as frequent as negative responses. For social behaviour, the opposite was the case.</td>
</tr>
<tr>
<td>Winter</td>
<td>1990</td>
<td>Hong Kong</td>
<td>86 teachers and their classes</td>
<td>Teachers approved (63%) more than they disapproved overall. More approval to academic behaviour than to social behaviour.</td>
</tr>
<tr>
<td>Charlton, Lovemore, Essex, &amp; Crowie</td>
<td>1995</td>
<td>St Helena</td>
<td>15 teachers and their classes</td>
<td>Teachers distributed more approval than disapproval. Academic and social behaviours both received more approval than disapproval.</td>
</tr>
<tr>
<td>Harrop &amp; Swinson</td>
<td>2000</td>
<td>UK</td>
<td>10 classes each at infants', junior and secondary school</td>
<td>Teachers distributed more approval than disapproval, although no decrease was found in approval rates with increasing age of students. More approval to academic behaviour than to social behaviour. For social behaviour, opposite was the case with the exception of secondary classes in this study.</td>
</tr>
<tr>
<td>Swinson &amp; Harrop</td>
<td>2001</td>
<td>UK</td>
<td>10 classes each at infants' and junior school</td>
<td>Relationship between teacher responses and on-task behaviour was examined. Higher levels of approval were associated with higher levels of on-task behaviour. A curvilinear relationship existed between rate of disapproval and on-task behaviour suggesting reducing disapprovals too low may be counterproductive.</td>
</tr>
</tbody>
</table>
7.8 Conclusion

Over the past 30 years, researchers have attempted to establish the rates of naturally occurring teacher responses to student behaviour. Reports of teacher behaviour indicate variable findings, although certain trends are evident. In the early work in the investigation of the naturally occurring rates of teacher responses, White (1975) and colleagues (Heller & White, 1975) found that teachers used more disapproval than approval in the classroom. If the studies included in Brophy's (1981) functional analysis are taken into account, however, the picture is more equivocal. Generally, however, it can be said that the earlier studies in this area typically found that teachers were more disapproving than approving of their students' behaviour. The seminal work of White (1975) has continued, but in a rather piecemeal way. Differences in the way data were collected and changes in operational definitions in terms of what constitutes a teacher response to student behaviour make it difficult to make direct comparisons between studies.

By the mid-1980s the trend towards teachers providing more disapproval than approval had been reversed (and has continued to date) with teachers consistently using more approval than disapproval overall with broad agreement across studies reviewed, carried out in the USA, Canada, the UK, Australia, New Zealand, Hong Kong, and in the tiny Atlantic island of St Helena. The findings of Wyatt and Hawkins (1987) in the USA lend support to the view that teacher behaviour did actually change in the 1980s (or the equivocation ceased at least) from being more disapproving than approving. Given that Wyatt and Hawkins used the same instrument as White (recording only verbal responses) but had findings more similar to the later researchers in the 1980s such as Merrett and Wheldall (1987b), Wheldall et al. (1990), and Winter (1990), there would appear to be evidence of a genuine and sustained shift in teacher behaviour. More recent work by Harrop and Swinson confirms that approval rates are higher than
disapproval rates at all school levels and that this is "a robust finding" (Harrop & Swinson, 2000, p. 481). This latter finding confirms that the shift in trend that occurred in the mid-late 1980s has been maintained into the late 1990s, at least.

While this sustained change in teacher behaviour is to be celebrated, there was little evidence to suggest that teachers, universally and systematically, deployed contingent approval or praise as positive reinforcement in spite of the considerable literature testifying to its effectiveness. One feature of teacher behaviour that was found to be constant over time [with one exception being the St Helena study of Charlton et al. (1995)] was that the academic behaviour of students was much more likely to attract teacher praise or approval than students’ conduct or social behaviour. Approval for appropriate classroom social (as opposed to academic) behaviour was only rarely observed and there was no evidence that appropriate social behaviour on the part of students attracted teacher approval or positive attention at any appreciable rate (other than in St Helena). Rather, it was the inappropriate behaviour of students that captured teachers’ attention. Teachers responded far more frequently to the inappropriate social behaviour of their students than to the appropriate behaviours they may have wished to see increased. More recent work by Harrop and Swinson (2000) has confirmed that approval is given primarily to academic rather than to social behaviours, with the reverse being the case for disapproval. Given this, they claimed such a finding “can be quoted as an established feature of observed teacher behaviour” (p. 481).

Positive correlations between teacher approval and on-task behaviour, and negative correlations between teacher disapproval and on-task behaviour, suggests that teachers’ less than optimal use of approval and disapproval may have been responsible for discouraging appropriate behaviour, and even increasing inappropriate social behaviour in classrooms. It has been suggested by some that students’
inappropriate behaviour may actually be maintained or even increased by inappropriate or non-contingent teacher attention.

As noted in Chapter 1, there are relatively few Australian data detailing the pattern of “naturalistic” teacher responses to student behaviour, and none in relation to New South Wales’ secondary classrooms. An aim of the present research is to redress this deficiency. A replication of the work of Wheldall et al. (1989) in an Australian context will add to the body of data already in existence. Specifically, this entails conducting an enquiry to determine the “natural” rates of teacher approval and disapproval in secondary classrooms in New South Wales, to explore relationships among the teacher response variables, and to investigate the patterns of student on-task behaviour in the context of this teacher behaviour. The results of this investigation are presented in the following chapter.
CHAPTER 8
A STUDY OF THE NATURAL RATES OF TEACHER APPROVAL AND DISAPPROVAL IN SECONDARY CLASSROOMS IN NEW SOUTH WALES

8.1 OVERVIEW

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8.3 METHOD

8.3.1 PARTICIPANTS

8.3.2 INSTRUMENT

8.3.3 PROCEDURE

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CHAPTER 8

A STUDY OF THE NATURAL RATES OF TEACHER APPROVAL
AND DISAPPROVAL
IN
SECONDARY CLASSROOMS IN NEW SOUTH WALES

8.1 Overview

The purpose of this chapter is to provide specific information regarding the "natural" rates of teacher approval and disapproval in New South Wales secondary classrooms. Data from 79 teachers and their classes in New South Wales secondary schools are presented. This study replicates the work of Wheldall et al. (1989) in the United Kingdom in the late 1980s in an Australian context: Student on-task behaviour is considered in the context of teacher responses. The findings are also compared to those of other researchers working in this area.

8.2 Background

Pioneered by behaviour analysts in experimentally manipulated research and demonstration studies (see, e.g., the classic studies by Becker et al., 1967 and Madsen et al., 1968), the study of key teacher behaviours such as contingent approval and disapproval broadened in the 1970s to an investigation of the naturally occurring rates of teacher approval and disapproval in classrooms everywhere. White (1975) is considered to have initiated this field of behavioural enquiry with a series of linked studies into the natural rates of teacher approval and disapproval.

The early work in this area consistently found that, generally, teachers were more disapproving than approving of their students, overall (see, e.g., White, 1975;
Thomas et al., 1978). The distinction between teacher responses to instructional or academic behaviour and managerial or social behaviour used in this early work has been an enduringly important concept in this field of enquiry. Notwithstanding the initial findings that teachers generally were more disapproving than approving, teacher approval to the academic behaviour of students was found to be more frequent than disapproval. Conversely, in terms of students’ classroom conduct or social behaviour, teachers tended to provide much more disapproval than approval.

By the mid to late 1980s, a shift in teacher behaviour became evident in the research literature (see Chapter 7). Teachers were found generally to be more approving than disapproving (see, e.g., Merrett & Wheldall, 1987b, Nafpaktitis et al., 1985; Wheldall et al., 1989; Wyatt & Hawkins, 1987) but the preponderance of the dichotomy of approval for academic behaviour and disapproval for social behaviour was maintained (see, e.g., Merrett & Wheldall, 1987b; Wheldall et al., 1989; Winter, 1990). The finding that teachers are generally more approving than disapproving has continued to be case, as exemplified in the more recent work in this area (see, e.g., Charlton et al., 1995; Harrop & Swinson, 2000).

In summary, there is strong evidence that teachers approve of students’ academic behaviour much more frequently than they approve of students’ appropriate classroom conduct, or social behaviour. Conversely, teachers typically provide large amounts of disapproval to students in relation to their social behaviour, while they rarely disapprove of their academic behaviour. This phenomenon has been observed in the United Kingdom, the United States of America, New Zealand, and Hong Kong. Notwithstanding that the power of contingent approval in increasing appropriate classroom behaviour has been well documented, there appears to be a persistent resistance on the part of teachers to utilise approval to improve classroom behaviour. While we can speculate on the likely situation in Australian schools, there is no specific
information in relation to the way these teachers respond to their students’ academic and social behaviour in terms of approval and disapproval.

The aim of the current study is to redress this “gap” in the data and to provide further contemporary evidence of the rates and patterns of teacher responses to student behaviour. In particular, the study seeks to replicate the UK secondary school study of Wheldall et al., (1989), utilising the OPTIC (Observing Pupils and Teachers In Classrooms) schedule (Merrett & Wheldall, 1986) with an incidental sample of New South Wales secondary teachers and their classes. Specifically, the following research questions are posed:

1) Are secondary teachers in New South Wales more approving than disapproving of their students, in line with contemporary practice elsewhere?
2) How do the rates of responding of secondary teachers in New South Wales compare to those of teachers reported in the research literature?
3) Do secondary teachers in New South Wales respond differentially to students’ academic and social (conduct) behaviour, and how do their responses compare to teacher responses in the research literature?
4) How, if at all, is student on-task behaviour related to teacher behaviour in terms of the preponderance of approval and disapproval in this sample of teachers, and how does this compare with other studies?

8.3 Method

8.3.1 Participants

The participants in this study comprised 79 secondary teachers and their classes from schools in New South Wales in the Sydney area. For each teacher, one of the classes regularly taught was included in the study. Table 8.1 shows the distribution of classes across student age groups (year taught) included in the sample. All age groups taught at the secondary level in New South Wales’ schools are included in this study.
The classes involved form an incidental sample of secondary classes from nine schools in various parts of the Sydney metropolitan area, representing a broad socio-economic mix, with schools from each of the education regions in the Sydney area. The mean class size was about 22, varying from 5 to 32 students.

Table 8.1

Composition of the Sample of 79 Teachers/Classes Across Year Groups

<table>
<thead>
<tr>
<th>Year group</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. classes</td>
<td>14</td>
<td>18</td>
<td>18</td>
<td>13</td>
<td>12</td>
<td>4</td>
<td>79</td>
</tr>
</tbody>
</table>

The sample included 40 male and 34 female teachers (there were five missing values for the teacher sex variable). Table 8.2 shows the breakdown of the sample by the sex of the teacher and the year group taught. There was some variability in terms of the numbers of male and female teachers teaching at each year level, with the exception of Year 11 where equal numbers of male and female teachers were included. As teacher sex is a variable in terms of some subsequent analyses, variations in the numbers of male and female teachers in respect of the teacher demographics of age and experience, as well as the subject they taught, are presented in Tables 8.3—8.5.

Table 8.2

Composition of the Sample of 79 Teachers by Sex of Teacher and Year Group Taught

<table>
<thead>
<tr>
<th>Year group</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>9</td>
<td>11</td>
<td>9</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>40</td>
</tr>
<tr>
<td>Female</td>
<td>4</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>6</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>Totals</td>
<td>13</td>
<td>17</td>
<td>16</td>
<td>12</td>
<td>12</td>
<td>4</td>
<td>74*</td>
</tr>
</tbody>
</table>

Note. *5 missing values
Table 8.3 shows that while teachers of English and Science were represented more frequently than teachers of other subjects overall, there was generally a broad representation of teachers across subject areas. The category "Other" includes Language classes, Library, Music, Careers, Physical Education/Health, Special Education and Resource classes. These subjects' designation as "Other" is not intended to diminish their importance in the secondary curriculum but merely reflects their low frequency in this sample. The differences in the number of male and female teachers teaching each subject are addressed below.

Table 8.3

<table>
<thead>
<tr>
<th>Subject taught</th>
<th>Overall (%)</th>
<th>Male (%)</th>
<th>Female (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>64*</td>
<td>34 (53)</td>
<td>30 (47)</td>
</tr>
<tr>
<td>English</td>
<td>13 (20)</td>
<td>5 (38)</td>
<td>8 (62)</td>
</tr>
<tr>
<td>Mathematics</td>
<td>9 (14)</td>
<td>8 (89)</td>
<td>1 (11)</td>
</tr>
<tr>
<td>Science</td>
<td>13 (20)</td>
<td>9 (69)</td>
<td>4 (31)</td>
</tr>
<tr>
<td>Social Science</td>
<td>11 (17)</td>
<td>8 (73)</td>
<td>3 (27)</td>
</tr>
<tr>
<td>Art/Design</td>
<td>10 (16)</td>
<td>2 (20)</td>
<td>8 (80)</td>
</tr>
<tr>
<td>Other</td>
<td>8 (13)</td>
<td>2 (25)</td>
<td>6 (75)</td>
</tr>
</tbody>
</table>

Note. *15 missing values; percentages are rounded.
Table 8.4 shows the distribution of teachers in this sample across broad age bands. Half of the teachers who indicated their age, were aged between 30 and 39 years. There was a smaller group of teachers aged 30 years or less, as well as another (smaller) group aged over 50 years. The information presented in Table 8.5 relating to teacher experience shows that the majority of teachers (56%) had over ten years of teaching experience. Clearly teacher experience and age were closely related, as would be expected.

Table 8.4

*Distribution of Teacher Age Across Total Sample and by Gender of Teacher*

<table>
<thead>
<tr>
<th>Teacher Age</th>
<th>Total N</th>
<th>Male (%)</th>
<th>Female (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>68*</td>
<td>36 (53)</td>
<td>32 (47)</td>
</tr>
<tr>
<td>Under 30 years</td>
<td>18 (26)</td>
<td>7 (39)</td>
<td>11 (61)</td>
</tr>
<tr>
<td>30-39 years</td>
<td>34 (50)</td>
<td>19 (56)</td>
<td>15 (44)</td>
</tr>
<tr>
<td>40-49 years</td>
<td>13 (19)</td>
<td>9 (69)</td>
<td>4 (31)</td>
</tr>
<tr>
<td>50-59 years</td>
<td>3 (4)</td>
<td>1 (33)</td>
<td>2 (67)</td>
</tr>
</tbody>
</table>

*Note.* *11 missing values; percentages are rounded.*
Table 8.5

*Distribution of Teacher Experience Across Total Sample and by Gender of Teacher*

<table>
<thead>
<tr>
<th>Experience</th>
<th>Total N (%)</th>
<th>Male (%)</th>
<th>Female (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>59*</td>
<td>30 (51)</td>
</tr>
<tr>
<td>First year out</td>
<td>5</td>
<td>1 (8)</td>
<td>4 (80)</td>
</tr>
<tr>
<td>1-4 years</td>
<td>8 (16)</td>
<td>5 (63)</td>
<td>3 (38)</td>
</tr>
<tr>
<td>5-10 years</td>
<td>13 (22)</td>
<td>5 (38)</td>
<td>8 (62)</td>
</tr>
<tr>
<td>Over 10 years</td>
<td>33 (56)</td>
<td>19 (58)</td>
<td>14 (42)</td>
</tr>
</tbody>
</table>

*Note. *20 missing values; percentages are rounded.

Since teacher gender functioned as a key variable in this study, the comparability of the two gender groups in terms of other key demographic characteristics likely to influence the variables under study were examined further using chi-square analysis. In terms of the numbers of male and female teachers according to the variables presented above in Tables 8.2—8.5, while variations clearly occurred, no statistical differences were evident for male and female participants in terms of teacher age [$\chi^2 (3, N = 68) = 3.392, p > .01$], teacher experience [$\chi^2 (3, N = 59) = 3.734, p > .01$], or year taught [$\chi^2 (5, N = 74) = 5.527, p > .01$]. For subject taught, however, there was a significant difference in the number of male and female participants [$\chi^2 (5, N = 74) = 15.744, p < .01$]. In this sample, teacher gender is clearly confounded by subject taught. As has already been noted, and as can be seen in Table 8.3, there was a good deal of variability in terms of the numbers of male and female teachers teaching each subject. In Mathematics classes, for instance, only one female teacher is present in the group of nine Mathematics teachers represented in this sample. This is, however, the
most extreme case of gender imbalance in terms of the subject taught in this sample. These variations should, however, be borne in mind where comparisons in terms of subject taught are made later in this chapter.

8.3.2 Instrument

Observations focussing on behavioural interactions in classrooms were completed using the OPTIC classroom behaviour observation schedule (Merrett & Wheldall, 1986) (see Appendix L). The OPTIC schedule samples teachers' use of approval and disapproval and the behaviour of the students in their classes. Trained observers recorded the number of times teachers gave approval (positive response) or disapproval (negative response) to students in the class and whether these were in response to students' academic work or their social behaviour. The schedule also allowed an estimate to be made of the amount of time students spent behaving appropriately, or time “on-task”.

OPTIC allows the observer to sample the behaviour of the teacher (section A) and the class (section B) by alternating his or her attention between them in a systematic way. In section A (for five periods, each of three minutes) the observer records the number of approving and disapproving responses the teacher makes (including non-verbal responses), indicating whether this results from student academic (instructional) or social (managerial or conduct) behaviour. In section B (for five periods, each of three minutes) the observer looks at each student in turn for a set period (four seconds) and records whether for the whole of that period they were on- or off-task.

8.3.3 Procedure

All teachers and classes were observed using the OPTIC schedule on three separate occasions for half an hour on each occasion. This yielded 45 minutes of observed behaviour for both teacher and student behaviours.
8.3.1.1 Inter-observer Agreement

A second observer was present for one of each set of three observations per teacher/class and inter-observer agreement (IOA) measures were calculated for teacher behaviour and student on-task behaviour. This was calculated using the usual formula of agreements divided by agreements plus disagreements, expressed as a percentage.

8.3.4 Data Analysis

Descriptive statistics provided basic information regarding the characteristics of the sample, as well as the means and standard deviations for each of the four discrete teacher variables (positive academic responses; positive social responses; negative academic responses; and, negative social responses). In addition, teacher responses were combined to provide additional variables (total approval; total disapproval; and, total responses) in order to facilitate comparison with other studies. Mean rates per minute for teacher behaviour were also calculated to allow for direct comparison with Wheldall et al. (1989) and other studies, where this level of detail was provided. The percentage student on-task behaviour estimates for each class were averaged over the three observation sessions.

Descriptive statistics were also employed to explore possible differences in teacher responses in terms of teacher sex, teacher age, teacher experience, the subject they taught, and the age of their students (year taught). A repeated measures t-test was also conducted to investigate possible differences in the responses of male and female teachers and to investigate any differences in the on-task levels of the classes of male and female teachers. As multiple comparisons on the same sample were conducted (where different dependent variables may well be correlated), the more conservative alpha level of 1% was adopted (Borg & Gall. 1989, p. 549; Howell, 1997, p. 362).

Effect sizes using Cohen’s $d$ were also calculated where means were compared in order to supplement the interpretation possible using statistical significance tests.
(Howell, 1997; Thompson, 1999). As previously noted in Chapter 3, the effect size is the difference between two population means, divided by the population standard deviation; in essence, being the extent to which the two populations do not overlap (Aron & Aron, 1999). Again, as already stated in Chapter 3, and following Cohen’s convention, effect sizes were regarded as small (.20), medium (.50) or large (.80) (Aron & Aron, 1999). Thompson (1999) has argued that “authors should be expected to report effect sizes and to make the case explicitly that results have practical importance” (p. 335).

Pearson’s product-moment correlations were carried out to explore possible relationships between teacher and student variables. Where analyses using teacher gender were conducted, gender was assigned a numerical value to allow for the correlation. In order to take account of any effect of multiple comparisons on significance findings in the case of correlations, the more conservative alpha level of 1% was adopted. Relationships were deemed statistically significant if they were equal to, or exceeded, 0.29 \((df = 77)\). [If the less conservative alpha level of 5% had been adopted relationships would have been deemed significant if they were equal to, or exceeded, 0.22 \((df = 77)\).]

8.4 Results

8.4.1 Inter-observer Agreement

Inter-observer agreement data were obtained for 78 of the 79 classes. For teacher behaviour, the average inter-observer agreement was 93.87\% \((SD = 7.24)\), with a minimum of 80\% and a maximum of 100\%. For student on-task behaviour, the inter-observer agreement was similarly high, with an average of 93.30\% \((SD = 5.60)\), again with a minimum of 80\% and a maximum of 100\%. These data can, therefore, be considered reliable based on these figures since the agreement percentages were generally very high with no values less than 80\%. 

266
8.4.2 Natural Rates of Teacher Approval and Disapproval

Table 8.6 shows the mean rates of teacher approval and disapproval for the 45 minutes of observation time, as well as the standard deviations and the calculated mean rate per minute. As the standard deviations were large, the median was also calculated for each of the teacher response variables.

Overall, teachers were slightly more approving than disapproving, providing 20.04 approving responses and 17.89 disapproving responses in 45 minutes (on three separate occasions), on average. Calculated as a per minute rate, teacher approval was 0.45 and teacher disapproval 0.40, on average.

The rates of responding were much higher for approval to academic behaviour and for disapproval to social behaviour than for disapproval to academic behaviour and approval to social behaviour. What should also be noted, is the high level of variability evident in the large standard deviations on all the teacher response variables. For instance, for teacher approval to social behaviour, the standard deviation was more than twice the size of the mean value for this variable.
Table 8.6

*Rates of Teacher Responses to Student Academic and Social Behaviour in 45 Minutes and Mean Rates per Minute*

<table>
<thead>
<tr>
<th>Response</th>
<th>Median</th>
<th>Mean</th>
<th>SD</th>
<th>Mean rate per minute</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval to academic behaviour</td>
<td>12.00</td>
<td>17.32</td>
<td>15.15</td>
<td>0.38</td>
</tr>
<tr>
<td>Approval to social behaviour</td>
<td>1.00</td>
<td>2.72</td>
<td>6.02</td>
<td>0.06</td>
</tr>
<tr>
<td>Total approval</td>
<td>13.00</td>
<td>20.04</td>
<td>17.77</td>
<td>0.45</td>
</tr>
<tr>
<td>Disapproval to academic behaviour</td>
<td>1.00</td>
<td>2.32</td>
<td>3.44</td>
<td>0.05</td>
</tr>
<tr>
<td>Disapproval to social behaviour</td>
<td>12.00</td>
<td>15.57</td>
<td>13.15</td>
<td>0.35</td>
</tr>
<tr>
<td>Total disapproval</td>
<td>14.00</td>
<td>17.89</td>
<td>13.88</td>
<td>0.40</td>
</tr>
<tr>
<td>Total responses</td>
<td>35.00</td>
<td>37.92</td>
<td>23.84</td>
<td>0.84</td>
</tr>
</tbody>
</table>

When responses for each type of teacher behaviour are expressed as a percentage of total teacher responses, patterns of teacher responding are clearer still. As Table 8.7 shows, overall, these Australian secondary teachers are slightly more approving (positive) (53%) than disapproving (negative) (47%) and offer a slightly higher number of responses to academic behaviour (52%) than to social behaviour (48%).
Table 8.7

*Teacher Responses to Positive and Negative Academic and Social Behaviour Expressed as a Rounded Percentage of Total Responses*

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Approval</th>
<th>Disapproval</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>46</td>
<td>6</td>
<td>52</td>
</tr>
<tr>
<td>Social</td>
<td>7</td>
<td>41</td>
<td>48</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>47</td>
<td>100</td>
</tr>
</tbody>
</table>

It is in the finer detail, however, that a more informative pattern of teacher response is revealed. The vast majority of teachers, 69 of the 79 included in this sample (87%), gave at least *twice* as much approval as disapproval to academic behaviour. Many of these teachers gave very large amounts of approval to academic behaviour, ratios of approval to disapproval ranging from 2:1 to 51:1. On the other hand, over one-third of teachers (30 teachers or 38%) gave no disapproving responses (negative academic) at all to academic behaviour and 62 of the 79 (78%) gave three or fewer negative academic responses in the course of 45 minutes of observation over three separate occasions. Clearly, teachers are generally more approving of students’ appropriate academic behaviour.

In terms of teachers’ responses to students’ *social* behaviour, however, a quite different pattern emerges. Only three of the 79 teachers (4%) gave twice as much approval as disapproval to social behaviour. In fact, 27 of the 79 secondary teachers (34%) gave *no* positive response at all to student social behaviour during the observation period (45 minutes over three separate occasions). Eighty-five percent of
teachers in this sample (67 of the 79) gave three or fewer approving responses (positive social) to appropriate student behaviour (over three separate occasions). Whereas 78% of teachers gave three or fewer negative academic responses (see above), only 17% (13 teachers) gave three or fewer disapproval responses to students' social behaviour (negative social) in the same amount of time. As noted above, 27 of the 79 teachers (34%) gave no positive social responses. Of the remaining 52 teachers, 43 (83%) gave twice as many negative responses as positive. Thus, 70 out of 79 teachers (89%) gave either no positive responses at all or gave twice as many negative responses as positive responses to social behaviour. Moreover, negative social responding was the only teacher response variable that all teachers in this sample were observed delivering.

Table 8.7 clearly shows that teachers in this sample were at least seven times more likely to approve of academic behaviour than disapprove of it. Conversely (but similarly), teachers were nearly six times more likely to disapprove of social behaviour than to approve of it. It would appear from the data presented in Table 8.7 that students are receiving (proportionately) a significant amount of feedback from teachers about their appropriate or successful academic behaviour and performance, but very little in the way of feedback about their appropriate social behaviour in the classroom. An alternative explanation is that the students included in this study were behaving so poorly that there was nothing to which teachers could respond positively. One way of exploring this proposition is to consider the on-task behaviour levels of students in the classes of these teachers since one would expect poor student conduct to be reflected in low on-task behaviour levels (see 8.4.3).

8.4.2.1 Variability of Teacher Responses

As noted earlier in this section, a feature of these Australian data is the highly variable nature of teacher responses. As shown in Table 8.6, large standard deviations were evident on all the teacher response variables. By way of illustration (utilising
means for year taught and subject taught), data relating to a “typical” Year 9 student on a “typical” school day helps illustrate variability of teacher responses in the current study. A hypothetical student participating in four and a half hours of instruction (a typical school day) made up of six periods of 45 minutes each (the total observation time for each teacher in the current study) could be engaged in lessons with six different subject teachers as shown in Table 8.8.

Table 8.8

<table>
<thead>
<tr>
<th>Variable Teacher Responses to Year 9 Students and Mean On-Task Behaviour Across Subjects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Period/Subject</td>
</tr>
<tr>
<td>1. Other</td>
</tr>
<tr>
<td>2. English</td>
</tr>
<tr>
<td>3. Mathematics</td>
</tr>
<tr>
<td>4. Science</td>
</tr>
<tr>
<td>5. Social Science</td>
</tr>
<tr>
<td>6. Art/Design</td>
</tr>
</tbody>
</table>

As can be seen, the level of teacher responsiveness is highly variable, ranging from a low of 21.33 responses in the course of a 45-minute period (or 0.47 per minute) to a high of 52.67 responses (1.17 per minute). Similarly, the associated student on-task behaviour ranged from 76% to 96%.

8.4.3 Student On-task Behaviour

The mean on-task behaviour of the students in the classes of these teachers was 85.79% (SD = 10.57). There is a degree of variability in the on-task behaviour levels, however, which ranged from 51.3% to 98.9%. In terms of the distribution of mean on-
task levels, the middle 50% of classes ranged from 79.9% to 93.4%. Only 20 of the 79 classes (25%) had mean on-task behaviour levels lower than 80%.

8.4.4 Relationships Among Teacher Responses and Between Teacher Response and Student On-Task Behaviour

8.4.4.1 Relationships Among Teacher Response Variables

Table 8.9 shows the inter-correlations among the four discrete teacher behaviour variables in the present study. Teacher approval to academic behaviour (Positive Academic) was significantly correlated to disapproval to academic behaviour (Negative Academic) (.5, \( p < .01 \)), and was the only clear statistically significant relationship among the teacher variables found.

Table 8.9

<table>
<thead>
<tr>
<th></th>
<th>Positive Academic</th>
<th>Positive Social</th>
<th>Negative Academic</th>
<th>Negative Social</th>
<th>Positive Total</th>
<th>Negative Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Social</td>
<td>.274</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Academic</td>
<td>.501*</td>
<td>.225</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Social</td>
<td>-.089</td>
<td>.213</td>
<td>.089</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Total</td>
<td>.945*</td>
<td>.572*</td>
<td>.503*</td>
<td>-.004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative Total</td>
<td>.040</td>
<td>.258</td>
<td>.332*</td>
<td>.969*</td>
<td>.121</td>
<td></td>
</tr>
<tr>
<td>Total Response</td>
<td>.728*</td>
<td>.577*</td>
<td>.569*</td>
<td>.561*</td>
<td>.816*</td>
<td>.673*</td>
</tr>
</tbody>
</table>

Note. * \( p < .01 \)

There was a trend towards a relationship between teacher approval to academic behaviour and teacher approval to social behaviour, but the relationship was not sufficiently strong to produce a statistically significant finding. Similarly, there was a trend towards a relationship between teacher approval to social behaviour and teacher
disapproval to academic behaviour. Teacher disapproval to social behaviour, however, was not significantly correlated to any of the other three teacher response behaviours. The other teacher behaviour variables included in the matrix are composite variables of the four discrete teacher behaviour variables and these correlations do not add any further information.

**8.4.4.2 Relationship Between Teacher Response and Student On-task Behaviour**

Table 8.10 provides the correlations between teacher responses and student on-task behaviour. Teacher disapproval to social behaviour was the only one of the four teacher responses that correlated significantly, and relatively strongly but inversely, with on-task behaviour (-.43, \( p < .01 \)). (Again, the remaining variables are composite variables only and are included for completeness.)

Table 8.10

<table>
<thead>
<tr>
<th>Teacher Response</th>
<th>P/A</th>
<th>P/S</th>
<th>N/A</th>
<th>N/S</th>
<th>P/T</th>
<th>N/T</th>
<th>A/T</th>
<th>S/T</th>
<th>R/T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student On-task</td>
<td>.089</td>
<td>-0.074</td>
<td>-0.026</td>
<td>-0.433*</td>
<td>.051</td>
<td>-0.417*</td>
<td>.073</td>
<td>-0.394*</td>
<td>-0.205</td>
</tr>
</tbody>
</table>

*Note.* \( *p < .01 \); P/A = Positive Academic; P/S = Positive Social; N/A = Negative Academic; N/S = Negative Social; P/T = Positive Total; N/T = Negative Total; A/T = Academic Total; S/T = Social Total; R/T = Response Total.

**8.4.5 The Role of Teacher Gender in Teacher Responding to Student Behaviour**

The pattern of responding for male and female teachers separately is shown in Table 8.11 for each of the teacher response variables, as well as the on-task behaviour of the students of male and female teachers. Given that the average number of students in the classes of male \( (M = 21.77, SD = 5.85) \) and female \( (M = 21.61, SD = 5.88) \) teachers was very similar, then any differences in the rate of responding shown in Table 8.11 can reasonably be taken to be real differences in the rate of responding of male and
female teachers, rather than any differences that may be produced as a result of variable
class size.

Table 8.11

*Teacher Responses According to Teacher Sex and Students’ On-Task Behaviour*

<table>
<thead>
<tr>
<th>Responses</th>
<th>Male (SD n = 40)</th>
<th>Female (SD n = 34)</th>
<th>t</th>
<th>p</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval to academic</td>
<td>21.45 (16.47)</td>
<td>13.59 (12.74)</td>
<td>2.31</td>
<td>NS</td>
<td>0.52</td>
</tr>
<tr>
<td>Approved to social</td>
<td>3.85 (8.01)</td>
<td>1.56 (2.51)</td>
<td>1.71</td>
<td>NS</td>
<td>0.38</td>
</tr>
<tr>
<td>Disapproval to academic</td>
<td>3.55 (4.16)</td>
<td>1.12 (1.88)</td>
<td>3.32</td>
<td><em>p &lt; .01</em></td>
<td>0.71</td>
</tr>
<tr>
<td>Disapproval to social</td>
<td>16.35 (14.77)</td>
<td>15.00 (11.49)</td>
<td>0.44</td>
<td>NS</td>
<td>0.10</td>
</tr>
<tr>
<td>On-task behaviour</td>
<td>85.66% (10.55)</td>
<td>86.18% (10.28)</td>
<td>-0.22</td>
<td>NS</td>
<td>0.05</td>
</tr>
</tbody>
</table>

In terms of absolute rates of responding, male teachers appear to be generally
more responsive on all of the teacher response variables. Disapproval to academic
behaviour, however, was the only response variable for which a statistically significant
difference existed between male and female teachers, *t* (73) = 3.32, *p < .01*. A medium
(approaching large) effect (*d* = 0.71) was evident for this form of differential
responding, where male teachers were more than three times more disapproving of the
academic behaviour of their students than female teachers.

While there were no other statistically significant differences between the
responses of male and female teachers in this sample, there is some evidence arising
from the effect sizes found that male teachers tended to be both more approving of
academic behaviour (indicated by a medium effect size, $d = 0.52$), and to a lesser extent, social behaviour (indicated by a small effect, $d = 0.38$). There were, however, no differences in the on-task behaviour of the classes of male and female teachers in this study.

8.4.6 Teacher Responses and Student On-task Behaviour According to Teacher Age, Experience, Subject Taught and Year Taught

Tables 8.12—8.15 provide descriptive information on teacher responses to student behaviour analysed by the other demographics of teacher age and experience and according to the subject and year taught (or age of students). Due to small numbers in some cases in the following data, any interpretation derived from them should be viewed tentatively, at best. Having stated this, these data provide further depth and detail to the area of teacher responses to student behaviour.

8.4.6.1 Teacher Responses in Terms of Teacher Age

In terms of teacher age, Table 8.12 shows that the group aged 30-39 years were generally the most responsive overall, with a total response mean rate of 42.50 per 45 minutes. Following the general pattern of teacher responding described earlier in this chapter, their responses to students were fairly evenly distributed between academic and social behaviour, with more approval than disapproval overall. The teachers in the under 30 years' group, were more disapproving than approving overall, a finding at variance with the rest of the sample. High rates of disapproval to social behaviour in this group may account for this finding. Another interesting trend was the decreasing amount of disapproval to social behaviour with increasing age of teachers.
### Table 8.12

**Teacher Responses and Students' On-Task Behaviour According to Teacher Age**

<table>
<thead>
<tr>
<th>Responses (N = 68)</th>
<th>&lt;30 years n = 18 (SD)</th>
<th>30-39 years n = 34 (SD)</th>
<th>40-49 years n = 13 (SD)</th>
<th>50-59 years n = 3 (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval to academic behaviour</td>
<td>14.89 (11.26)</td>
<td>19.53 (18.09)</td>
<td>15.23 (11.11)</td>
<td>23.70 (23.70)</td>
</tr>
<tr>
<td>Approval to social behaviour</td>
<td>1.33 (2.57)</td>
<td>3.76 (8.18)</td>
<td>1.62 (3.02)</td>
<td>1.67 (1.53)</td>
</tr>
<tr>
<td>Total approval</td>
<td>16.22 (12.35)</td>
<td>23.29 (21.36)</td>
<td>16.85 (11.74)</td>
<td>25.30 (24.80)</td>
</tr>
<tr>
<td>Disapproval to academic behaviour</td>
<td>1.33 (1.72)</td>
<td>2.44 (3.01)</td>
<td>1.54 (1.61)</td>
<td>3.33 (4.04)</td>
</tr>
<tr>
<td>Disapproval to social behaviour</td>
<td>17.72 (14.23)</td>
<td>16.76 (14.65)</td>
<td>9.31 (7.13)</td>
<td>6.33 (6.66)</td>
</tr>
<tr>
<td>Total disapproval</td>
<td>19.06 (14.28)</td>
<td>19.21 (14.76)</td>
<td>10.85 (7.66)</td>
<td>9.67 (10.69)</td>
</tr>
<tr>
<td>Total responses to academic behaviour</td>
<td>16.22 (11.81)</td>
<td>21.97 (20.07)</td>
<td>16.77 (11.45)</td>
<td>27.00 (27.70)</td>
</tr>
<tr>
<td>Total responses to social behaviour</td>
<td>19.06 (14.14)</td>
<td>20.53 (18.40)</td>
<td>10.92 (7.96)</td>
<td>8.00 (7.94)</td>
</tr>
<tr>
<td>Total responses</td>
<td>35.28 (16.97)</td>
<td>42.50 (26.77)</td>
<td>27.69 (14.20)</td>
<td>35.00 (35.50)</td>
</tr>
<tr>
<td>On-task behaviour</td>
<td>85.47% (13.70)</td>
<td>86.23% (9.52)</td>
<td>88.22% (8.32)</td>
<td>81.37% (11.01)</td>
</tr>
</tbody>
</table>

#### 8.4.6.2 Teacher Responses in Terms of Teacher Experience

Table 8.13 details teacher responses when analysed by years of teaching experience. One interesting finding is that teachers in their first year of teaching, in this sample, were more disapproving than approving overall, at variance with the findings for the rest of the sample. These teachers in their first year of teaching (who were the
most disapproving group in this sample) gave only half the number of positive responses as negative responses, with approval to academic behaviour being low. In addition, these teachers had the highest rates for disapproval to social behaviour (21 responses in 45 minutes). Perhaps not unrelated to these factors, the student on-task behaviour levels were also the lowest for this group (80%). Caution, should be exercised, however, in drawing conclusions from these data as numbers of teachers in their first year of teaching were small. Teachers with between five and ten years’ experience appeared to be the most responsive overall, and while having the highest rates of approval, also had the highest levels of disapproval for social behaviour after teachers in their first year. The least disapproving group of teachers were those with over ten years of experience, these teachers also having the lowest rate of disapproval to social behaviour (11.15 disapproving responses in 45 minutes).
Table 8.13

Mean Teacher Responses and Students' On-Task Behaviour According to Teacher Experience in Years

<table>
<thead>
<tr>
<th>Responses</th>
<th>&lt;1</th>
<th>1–4</th>
<th>5–10</th>
<th>&gt;10</th>
</tr>
</thead>
<tbody>
<tr>
<td>(N = 59)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
</tr>
<tr>
<td>Approval to academic behaviour</td>
<td>10.00</td>
<td>17.37</td>
<td>17.69</td>
<td>17.21</td>
</tr>
<tr>
<td>(8.46)</td>
<td>(15.67)</td>
<td>(15.98)</td>
<td>(14.52)</td>
<td></td>
</tr>
<tr>
<td>Approval to social behaviour</td>
<td>1.40</td>
<td>1.75</td>
<td>1.92</td>
<td>1.21</td>
</tr>
<tr>
<td>(1.14)</td>
<td>(3.81)</td>
<td>(2.81)</td>
<td>(1.60)</td>
<td></td>
</tr>
<tr>
<td>Total approval</td>
<td>11.40</td>
<td>19.13</td>
<td>19.62</td>
<td>18.42</td>
</tr>
<tr>
<td>(8.65)</td>
<td>(17.55)</td>
<td>(16.30)</td>
<td>(15.27)</td>
<td></td>
</tr>
<tr>
<td>Disapproval to academic behaviour</td>
<td>1.60</td>
<td>2.00</td>
<td>1.69</td>
<td>1.79</td>
</tr>
<tr>
<td>(2.30)</td>
<td>(1.85)</td>
<td>(1.44)</td>
<td>(2.47)</td>
<td></td>
</tr>
<tr>
<td>Disapproval to social behaviour</td>
<td>21.00</td>
<td>12.25</td>
<td>15.46</td>
<td>11.15</td>
</tr>
<tr>
<td>(8.34)</td>
<td>(6.67)</td>
<td>(8.98)</td>
<td>(9.89)</td>
<td></td>
</tr>
<tr>
<td>Total disapproval</td>
<td>22.60</td>
<td>14.25</td>
<td>17.15</td>
<td>12.94</td>
</tr>
<tr>
<td>(9.63)</td>
<td>(6.50)</td>
<td>(9.42)</td>
<td>(10.31)</td>
<td></td>
</tr>
<tr>
<td>Total responses to academic behaviour</td>
<td>11.60</td>
<td>19.37</td>
<td>19.38</td>
<td>19.00</td>
</tr>
<tr>
<td>(8.44)</td>
<td>(16.38)</td>
<td>(15.67)</td>
<td>(16.15)</td>
<td></td>
</tr>
<tr>
<td>Total responses to social behaviour</td>
<td>22.40</td>
<td>14.00</td>
<td>17.38</td>
<td>12.36</td>
</tr>
<tr>
<td>(8.62)</td>
<td>(6.26)</td>
<td>(10.60)</td>
<td>(10.08)</td>
<td></td>
</tr>
<tr>
<td>Total responses</td>
<td>34.00</td>
<td>33.38</td>
<td>36.77</td>
<td>31.36</td>
</tr>
<tr>
<td>(15.72)</td>
<td>(16.92)</td>
<td>(15.42)</td>
<td>(19.22)</td>
<td></td>
</tr>
<tr>
<td>On-task behaviour</td>
<td>80.44%</td>
<td>89.96%</td>
<td>84.08%</td>
<td>88.33%</td>
</tr>
<tr>
<td>(13.44)</td>
<td>(5.97)</td>
<td>(12.84)</td>
<td>(7.60)</td>
<td></td>
</tr>
</tbody>
</table>
8.4.6.3 Teacher Responses in Terms of Subject Taught

Table 8.14 shows that Science and Art/Design teachers were more disapproving than approving overall, a finding contrary to the general trend. (English teachers were also slightly more disapproving than approving.) Science teachers had high rates of negative social responses (20.31 per 45 minutes), as well as the highest total disapproval response rate. They did, however, also have the highest approval to social behaviour (5.31 per 45 minutes), making them the most responsive teachers, both positively and negatively, in terms of social behaviour. On-task behaviour was lowest for these teachers at 79.58%.

Social Science teachers were the most responsive overall with 46.73 responses in 45 minutes of observation. The least responsive teachers overall were Art/Design teachers, who also were the least positive overall in the study (9 positive responses, both academic and social, on average, in 45 minutes). Art/Design teachers were also the least disapproving in terms of academic behaviour, however. In addition, they had the highest on-task behaviour in their classes (91.64%).

Teachers of the subjects designated as Other (which in this study included Language classes, Library, Music, Careers, PE/Health, Special Education and Resource classes) were the most approving overall, with 29.12 approving responses in 45 minutes, 27.38 being for academic behaviour. These teachers had the highest approving response rate to academic behaviour but also had the lowest approval rate to social behaviour. Maths teachers were the least disapproving overall (only 10.33 disapproving responses in total in 45 minutes), having very low rates of disapproving responses to social behaviour (only 8.44 in 45 minutes).
<table>
<thead>
<tr>
<th>Responses (N = 64)</th>
<th>English</th>
<th>Maths</th>
<th>Science</th>
<th>Social</th>
<th>Art/ Design</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 13</td>
<td>n = 9</td>
<td>n = 13</td>
<td>n = 11</td>
<td>n = 10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
</tr>
</tbody>
</table>

**Table 8.14**

*Teacher Responses and Students' On-Task Behaviour According to Subject Taught*

<table>
<thead>
<tr>
<th>Approval to academic behaviour</th>
<th>16.54 (13.30)</th>
<th>23.44 (21.05)</th>
<th>13.15 (11.44)</th>
<th>24.45 (17.60)</th>
<th>7.20 (10.04)</th>
<th>27.38 (18.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval to social behaviour</td>
<td>2.38 (3.93)</td>
<td>2.44 (3.78)</td>
<td>5.31 (13.29)</td>
<td>2.64 (3.11)</td>
<td>1.80 (3.01)</td>
<td>1.75 (1.75)</td>
</tr>
<tr>
<td>Total approval</td>
<td>18.92 (14.89)</td>
<td>25.89 (22.82)</td>
<td>18.46 (22.18)</td>
<td>27.09 (20.01)</td>
<td>9.00 (9.84)</td>
<td>29.12 (19.39)</td>
</tr>
<tr>
<td>Disapproval to academic behaviour</td>
<td>1.62 (2.43)</td>
<td>1.89 (2.42)</td>
<td>2.77 (3.27)</td>
<td>2.91 (4.21)</td>
<td>1.20 (1.23)</td>
<td>2.37 (3.25)</td>
</tr>
<tr>
<td>Disapproval to social behaviour</td>
<td>17.54 (12.73)</td>
<td>8.44 (6.86)</td>
<td>20.31 (15.76)</td>
<td>16.73 (18.06)</td>
<td>11.90 (9.28)</td>
<td>11.38 (4.93)</td>
</tr>
<tr>
<td>Total disapproval</td>
<td>19.15 (12.81)</td>
<td>10.33 (7.23)</td>
<td>23.08 (16.37)</td>
<td>19.64 (18.89)</td>
<td>13.10 (9.64)</td>
<td>13.75 (7.36)</td>
</tr>
<tr>
<td>Total responses to academic behaviour</td>
<td>18.15 (14.50)</td>
<td>25.33 (22.56)</td>
<td>15.92 (14.16)</td>
<td>27.36 (21.13)</td>
<td>8.40 (10.80)</td>
<td>29.75 (20.03)</td>
</tr>
<tr>
<td>Total responses to social behaviour</td>
<td>19.92 (14.63)</td>
<td>10.89 (7.29)</td>
<td>25.62 (23.44)</td>
<td>19.36 (18.34)</td>
<td>13.70 (11.38)</td>
<td>13.12 (5.89)</td>
</tr>
<tr>
<td>Total responses</td>
<td>38.08 (20.05)</td>
<td>36.22 (24.35)</td>
<td>41.54 (32.54)</td>
<td>46.73 (28.12)</td>
<td>22.10 (13.48)</td>
<td>42.88 (23.14)</td>
</tr>
<tr>
<td>On-task behaviour</td>
<td>85.20% (7.54)</td>
<td>88.14% (8.64)</td>
<td>79.58% (14.59)</td>
<td>87.88% (10.17)</td>
<td>91.64% (6.23)</td>
<td>86.85% (10.02)</td>
</tr>
</tbody>
</table>

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8.4.6.4 Teacher Responses in Terms of Year Taught

For the purposes of this analysis, the data relating to students in Year 11 and Year 12 have been collapsed into one year group. As these students are the senior school students in the education system in New South Wales it is reasonable to treat them as one group. Doing so addresses, in part, the problem of small sub-group size in this sample.

Year 7 students received the most teacher responses overall by a large margin, with 53.43 responses per 45 minutes; receiving the most responses to both academic and social behaviour for any year taught. Year 7 students also received the most approving and the most disapproving responses for both academic and social behaviour of all years. Total disapproval (28.93 responses) exceeded total approval (24.50) for Year 7, as was the case for Year 10 students (but only marginally). Year 7 students did, however, receive more than twice as many approving responses in terms of social behaviour than any other year taught. The data in relation to year taught shows the most consistent pattern of responses on every teacher response, discrete and composite, with Year 7 classes receiving the most of all types of teacher attention.

Students in Years 11/12 received the lowest rates of total disapproval (as might be expected), with the lowest rate of disapproval for social behaviour as well. These students also received the least approval for social behaviour, and not unexpectedly had the highest level of on-task behaviour at 89.24%, although it should be noted that mean on-task behaviour across years showed little variation. The lowest on-task behaviour was recorded for Year 10 students with an average of 83.13%.

Year 11/12 students received the least teacher responses overall, had the lowest total responses for their social behaviour, but still had the average number of responses (in terms of both approval and disapproval) in terms of academic behaviour. There is a
clear decline evident in total responses as students increase in age, from 53.43 per 45 minutes in Year 7 to 28.87 per 45 minutes in Years 11/12.

Table 8.15

*Teacher Responses and Students' On-Task Behaviour According to Year Taught (Age of Students)*

<table>
<thead>
<tr>
<th>Responses</th>
<th>Overall</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Years 11/12</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$N = 79$</td>
<td>$n = 14$</td>
<td>$n = 18$</td>
<td>$n = 18$</td>
<td>$n = 13$</td>
<td>$(n = 16)$</td>
</tr>
<tr>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
<td>(SD)</td>
</tr>
<tr>
<td>Approval to academic behaviour</td>
<td>17.32</td>
<td>19.29</td>
<td>16.67</td>
<td>18.44</td>
<td>14.62</td>
<td>17.25</td>
</tr>
<tr>
<td>(15.15)</td>
<td>(11.84)</td>
<td>(13.60)</td>
<td>(16.36)</td>
<td>(17.14)</td>
<td>(17.66)</td>
<td></td>
</tr>
<tr>
<td>Approval to social behaviour</td>
<td>2.72</td>
<td>5.21</td>
<td>2.39</td>
<td>2.22</td>
<td>2.38</td>
<td>1.75</td>
</tr>
<tr>
<td>(6.02)</td>
<td>(12.11)</td>
<td>(3.60)</td>
<td>(2.49)</td>
<td>(5.19)</td>
<td>(3.28)</td>
<td></td>
</tr>
<tr>
<td>Total approval</td>
<td>20.04</td>
<td>24.50</td>
<td>19.06</td>
<td>20.67</td>
<td>17.00</td>
<td>19.00</td>
</tr>
<tr>
<td>(17.77)</td>
<td>(18.65)</td>
<td>(15.39)</td>
<td>(16.66)</td>
<td>(20.55)</td>
<td>(19.76)</td>
<td></td>
</tr>
<tr>
<td>Disapproval to academic behaviour</td>
<td>2.32</td>
<td>3.64</td>
<td>1.61</td>
<td>2.22</td>
<td>1.92</td>
<td>2.38</td>
</tr>
<tr>
<td>(3.44)</td>
<td>(5.29)</td>
<td>(2.17)</td>
<td>(2.26)</td>
<td>(3.50)</td>
<td>(3.74)</td>
<td></td>
</tr>
<tr>
<td>Disapproval to social behaviour</td>
<td>15.57</td>
<td>25.29</td>
<td>18.00</td>
<td>12.83</td>
<td>15.46</td>
<td>7.50</td>
</tr>
<tr>
<td>(13.15)</td>
<td>(18.22)</td>
<td>(13.79)</td>
<td>(9.17)</td>
<td>(11.41)</td>
<td>(4.73)</td>
<td></td>
</tr>
<tr>
<td>Total disapproval</td>
<td>17.89</td>
<td>28.93</td>
<td>19.61</td>
<td>15.06</td>
<td>17.38</td>
<td>9.88</td>
</tr>
<tr>
<td>(13.88)</td>
<td>(18.89)</td>
<td>(14.39)</td>
<td>(9.46)</td>
<td>(12.84)</td>
<td>(5.41)</td>
<td></td>
</tr>
<tr>
<td>Total responses to academic behaviour</td>
<td>19.63</td>
<td>22.93</td>
<td>18.28</td>
<td>20.67</td>
<td>16.54</td>
<td>19.62</td>
</tr>
<tr>
<td>Total responses to social behaviour</td>
<td>18.29</td>
<td>30.50</td>
<td>20.39</td>
<td>15.06</td>
<td>17.85</td>
<td>9.25</td>
</tr>
<tr>
<td>(15.58)</td>
<td>(22.61)</td>
<td>(14.77)</td>
<td>(10.19)</td>
<td>(14.90)</td>
<td>(5.70)</td>
<td></td>
</tr>
<tr>
<td>Total responses</td>
<td>37.92</td>
<td>53.43</td>
<td>38.67</td>
<td>35.72</td>
<td>34.38</td>
<td>28.87</td>
</tr>
<tr>
<td>(23.84)</td>
<td>(25.39)</td>
<td>(23.04)</td>
<td>(17.05)</td>
<td>(27.56)</td>
<td>(22.97)</td>
<td></td>
</tr>
<tr>
<td>On-task behaviour</td>
<td>85.79%</td>
<td>83.64%</td>
<td>86.53%</td>
<td>85.58%</td>
<td>83.13%</td>
<td>89.24%</td>
</tr>
<tr>
<td>(10.57)</td>
<td>(11.68)</td>
<td>(9.12)</td>
<td>(12.16)</td>
<td>(12.08)</td>
<td>(7.76)</td>
<td></td>
</tr>
</tbody>
</table>
8.4.7 Inter-correlations Among Teacher Characteristics, Teacher Responses and Student On-task Behaviour

As can be seen in Table 8.16, when the teacher demographics of sex, age, experience, and year taught were correlated with teacher responses and student on-task behaviour some statistically significant relationships were evident. (Note that subject taught is not included in the correlation matrix as it comprises categorical data.)

Table 8.16

<table>
<thead>
<tr>
<th>Teacher Response</th>
<th>Teacher Sex</th>
<th>Teacher Age</th>
<th>Teacher Exp</th>
<th>Year Taught</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Total</td>
<td>-.298*</td>
<td>.075</td>
<td>.089</td>
<td>-.071</td>
</tr>
<tr>
<td>Social Total</td>
<td>.115</td>
<td>-.202</td>
<td>-.255</td>
<td>-.396*</td>
</tr>
<tr>
<td>Positive Academic</td>
<td>-.258</td>
<td>.066</td>
<td>.094</td>
<td>-.062</td>
</tr>
<tr>
<td>Positive Social</td>
<td>-.185</td>
<td>.013</td>
<td>-.077</td>
<td>-.143</td>
</tr>
<tr>
<td>Positive Total</td>
<td>-.283</td>
<td>.061</td>
<td>.078</td>
<td>-.101</td>
</tr>
<tr>
<td>Negative Academic</td>
<td>-.348*</td>
<td>.102</td>
<td>.002</td>
<td>-.080</td>
</tr>
<tr>
<td>Negative Social</td>
<td>-.051</td>
<td>-.243</td>
<td>-.250</td>
<td>-.404*</td>
</tr>
<tr>
<td>Negative Total</td>
<td>-.135</td>
<td>-.220</td>
<td>-.240</td>
<td>-.403*</td>
</tr>
<tr>
<td>Responses Total</td>
<td>-.290*</td>
<td>-.083</td>
<td>-.067</td>
<td>-.310*</td>
</tr>
<tr>
<td>On-Task Behaviour</td>
<td>.025</td>
<td>.018</td>
<td>.158</td>
<td>.128</td>
</tr>
</tbody>
</table>

*Note. Teacher Exp = Teacher Experience; * p < .01.

There appeared to be a relationship between teacher sex and teacher disapproval of academic behaviour ($r = -.348$, $p < .01$). There was a trend towards a relationship between teacher sex and teacher approval to academic behaviour ($r = -.258$, $p < .02$), but given the accepted alpha level (1%) in the present study, this difference was not sufficiently strong to produce a statistically significant result. There were no other
statistically significant differences between male and female teachers and, interestingly, as has been noted previously, student on-task behaviour for both male and female teachers was almost identical at 86% (rounded percentage).

Table 8.16 also shows that the year taught was negatively correlated with teacher disapproval to social behaviour. That is, as the school year taught increased (i.e., the students got older), the number of disapproving responses to social behaviour overall decreased. This finding applies to teacher disapproval to social behaviour \( (r = -0.40, p < .01) \), teacher disapproval in total \( (r = -0.40, p < .01) \), total teacher responses to social behaviour \( (r = -0.396, p < .01) \), and to total teacher responses \( (r = -0.31, p < .01) \). This latter finding is clearly shown in the steadily declining means for total teacher responses in Table 8.15 and also supports some of the conclusions drawn from the descriptive statistics detailed earlier relating to the rate of disapproval decreasing as students increased in age.

Other trends indicating possible relationships exist in these data. As noted, the alpha level in the present study has been set at the more conservative level of 1% because of the multiple comparisons being made (see Method) within the one data set. The following findings must be treated with tentative interest at best but are added here to provide more detail. There may be a trend towards an inverse relationship between teacher experience and teacher disapproval to social behaviour. That is, as teachers become more experienced, the number of total disapproving responses they use overall decreases \( (r = -0.24, p < .05) \), largely as a result of their tendency to use fewer responses to student social behaviour \( (r = -0.25, p < .05) \). Again, this trend is evident in the descriptive information detailed earlier in Table 8.13. Likewise, as teacher age increases there is a tendency to use less disapproval to social behaviour \( (r = -0.24, p < .05) \), a relationship which produces a negative correlation \( (r = -0.22, p < .05) \) between increasing age and decreasing negativity (Negative Total). (This finding is supported by

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the descriptive data presented in Table 8.12 and commented on earlier.) No other possible relationships are indicated and these latter results are not being presented as statistically significant findings but rather trends that, in a future study, may be worthy of further investigation. Other statistically significant correlations are merely products of total responses and other variables, e.g., the correlation between total responses and teacher sex \(r = -.290, p < .01\).

8.5 Discussion

8.5.1 Teacher Approval and Disapproval in New South Wales Secondary Classrooms

The present study of 79 secondary teachers from New South Wales found these teachers to be slightly more approving than disapproving of their students' behaviour, a finding strikingly similar to that of Wheldall et al. (1989), on whose work this study was based. This finding also confirms those found in other studies concerned with teacher approval and disapproval in primary and secondary classes since the mid-1980s (Charlton et al., 1995; Harrop & Swinson, 2000; Merrett & Wheldall, 1987b; Nafpaktitis et al., 1985; Winter, 1990; Wyatt & Hawkins, 1987). Table 8.17 shows the preponderance of teacher approval in secondary classes since the documented shift to more approval than disapproval in the mid-1980s as a mean rate per minute and also as a percentage of total responses. The findings from the present study (that teachers approve of student behaviour 53% of the time) are at the lower end of the range in terms of the percentage of teacher responses that are approving. This suggests that while Australian secondary school teachers are more approving than disapproving overall, relative to secondary school teachers around the world on whom similar data have been collected, they appear to be somewhat less positive. Nevertheless, it is with a degree of certainty that we can expect teachers to be more approving than disapproving of the students in their classes.
Table 8.17

*Teacher Approval and Disapproval in Secondary Classes Since the Mid-1980s*

<table>
<thead>
<tr>
<th>Study/Place</th>
<th>Approval</th>
<th>Disapproval</th>
<th>% Approval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nafpaktitis, Mayer, &amp; Butterworth (1985) USA Grade 6-9 (intermediate classes)</td>
<td>0.90</td>
<td>0.29</td>
<td>76%</td>
</tr>
<tr>
<td>Wyatt &amp; Hawkins (1987) USA Grade 9</td>
<td>0.40</td>
<td>0.23</td>
<td>63%</td>
</tr>
<tr>
<td>Wyatt &amp; Hawkins (1987) USA Grade 12</td>
<td>0.17</td>
<td>0.11</td>
<td>60%</td>
</tr>
<tr>
<td>Wheldall, Houghton &amp; Merrett (1989) UK Secondary</td>
<td>0.65</td>
<td>0.53</td>
<td>55%</td>
</tr>
<tr>
<td>Winter (1990) Hong Kong Secondary</td>
<td>1.0</td>
<td>0.58</td>
<td>63%</td>
</tr>
<tr>
<td>Harrop &amp; Swinson (2000) UK 10 secondary classes</td>
<td>1.27</td>
<td>0.42</td>
<td>75%</td>
</tr>
<tr>
<td>Current study Australia 79 secondary classes</td>
<td>0.45</td>
<td>0.40</td>
<td>53%</td>
</tr>
</tbody>
</table>

*Note.* Approval and Disapproval expressed as mean rates per minute; % Approval is approval expressed as a percentage of total responses.

8.5.2 Comparing the Rates of Teacher Approval and Disapproval to Rates Reported in the Literature

Table 8.18 shows the mean rates per minute for teacher approval and disapproval for both the current study (0.45 and 0.40 approving and disapproving responses per minute respectively, on average) and the UK study conducted by Wheldall et al. (1989) upon which the study was based. As can be seen, notwithstanding the finding that both Australian and UK teachers were more approving
than disapproving overall, the response rates of UK secondary teachers were somewhat higher than those found in the present study, both in terms of approval (0.65 per minute) and disapproval (0.53 per minute). Given that class size was very similar in both studies (22 students per class, on average), these data suggest that Australian teachers may be both less approving and less disapproving when it comes to the rate of their responses to their students. Another way of expressing this is to suggest that these Australian teachers were less responsive to their students than their British counterparts. On every teacher response variable, the UK teachers were more responsive.

Table 8.18

A Comparison of Means and SD for Teacher Responses to Academic and Social Behaviour in the Current Study and the UK

<table>
<thead>
<tr>
<th>Response</th>
<th>Current Study</th>
<th>Wheldall et al. (1989)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean for SD 45 mins</td>
<td>Mean for SD 45 mins</td>
</tr>
<tr>
<td>Approval to academic behaviour</td>
<td>17.32</td>
<td>23.7</td>
</tr>
<tr>
<td>Approval to social behaviour</td>
<td>2.72</td>
<td>5.4</td>
</tr>
<tr>
<td>Total approval</td>
<td>20.04</td>
<td>29.1</td>
</tr>
<tr>
<td>Disapproval to academic behaviour</td>
<td>2.32</td>
<td>7.7</td>
</tr>
<tr>
<td>Disapproval to social behaviour</td>
<td>15.57</td>
<td>16.1</td>
</tr>
<tr>
<td>Total disapproval</td>
<td>17.89</td>
<td>23.9</td>
</tr>
<tr>
<td>Total responses</td>
<td>37.92</td>
<td>52.9</td>
</tr>
</tbody>
</table>

Note. Means are for 45 minutes of observation
In relation to the findings of other researchers investigating rates of responding by secondary teachers (see Table 8.17), the mean rate per minute for both approval and disapproval in the present study was lower than that found in the Hong Kong study conducted by Winter (1990), and in the more recent UK work of Harrop and Swinson (2000). Caution should be exercised, however, in drawing too many conclusions about the relative rate of responding of Australian teachers as a result of this comparative data, as the study by Harrop and Swinson comprised only 10 secondary classes and the study by Winter was based on only one OPTIC observation, rather than three (Merrett & Wheldall, 1986; Winter, 1990). The mean rate of 0.45 approval responses per minute found in the present study was more similar to at least one of Wyatt and Hawkins' (1987) secondary findings for Year 9 students (see Table 8.17) where teachers gave 0.40 verbal approval responses each minute, on average.

While a trend appears to be evident in the research literature that absolute rates of approval have increased, the relatively lower rates found in the present study seem to “interrupt” the apparently increasing rate of approval over time. The rates found here are lower than any other secondary study [with the exception of Wyatt and Hawkins (1987) where verbal responses only were recorded] since Nafpaktitis et al. (1985). This finding would suggest that Australian teachers are not only less approving than their colleagues around the world in relation to the total responses they make (53%), they also offer relatively fewer responses, both approving and disapproving, per minute. This may be an idiosyncratic feature of this particular sample, or could be a real cultural difference. Further research on larger samples of Australian teachers is required to confirm or refute this finding. The rates of 20.04 approving responses per 45 minutes found in the present study are, however, a far cry from the comment made by White in 1975 that, “in a typical class of 40 min, the teacher emits four to eight approvals during the entire class period” (White, 1975, p. 369). White’s data in secondary classes showed
approvals to be around 0.18 per minute, less than half the rate found in the present study (0.45).

8.5.2.1 Variability of Teacher Responses

The highly variable nature of teacher responses was clearly evident in the current study. This was further illustrated by the hypothetical example of a “typical” Year 9 student’s experience on a “typical” school day, shown in Table 8.8. Variability in teacher responses was also commented on by Wheldall et al. (1989), Winter (1990), and Charlton et al. (1995). In practical terms, this variability may well lead to secondary students experiencing vastly different classroom environments, a point to be returned to later in this discussion.

8.5.3 Differential Teacher Responses to Academic and Social Behaviour

While teachers in the present study were more approving than disapproving overall, it is in the detail of the pattern of responses that further insights into teacher behaviour are found. In the present study just over half (52%) of the teachers’ responses to their students were in relation to their instructional or academic behaviour. The remaining responses (48%) were managerial in nature, relating to students’ classroom conduct or social behaviour. The present study also found a preponderance of approval for academic behaviour and disapproval for social behaviour, which confirms the findings of many other researchers (see, e.g., Brophy, 1981; Harrop & Swinson, 2000; Heller & White, 1975; Merrett & Wheldall, 1987b; Naftaktis et al., 1985; Wheldall et al., 1989; White, 1975; Winter, 1990; Wyatt & Hawkins, 1987). Teachers provided at least seven times more approval, on average, than disapproval to their students’ academic behaviour, indicating an approval to disapproval ratio of 7:1. When it came to students’ social behaviour, however, the reverse was the case. Teachers were nearly six times more likely to disapprove of their students’ classroom social behaviour than to approve of it, indicating an approval to disapproval ratio of only 1:6.
Table 8.19 shows how the findings from the present study compare with those of Wheldall et al. (1989) in terms of specific responses expressed as a percentage of total responses. While the patterns of teacher responses to students’ academic and social behaviour in the UK study are mirrored by the patterns in the current study, the magnitude of the ratios in the Australian study is larger. In Wheldall et al., secondary teachers were three times as likely to approve of their students’ academic behaviour (indicating an approval to disapproval ratio of 3:1), and were also three times more likely to disapprove of students’ social behaviour as approve of it (resulting in a ratio of 1:3).

Table 8.19

A Comparison of Percentages of Teacher Responses to Academic and Social Behaviour

<table>
<thead>
<tr>
<th>Behaviour</th>
<th>Approval</th>
<th>Disapproval</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic</td>
<td>46 (45)</td>
<td>6 (15)</td>
<td>52 (60)</td>
</tr>
<tr>
<td>Social</td>
<td>7 (10)</td>
<td>41 (30)</td>
<td>48 (40)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53 (55)</strong></td>
<td><strong>47 (45)</strong></td>
<td><strong>100 (100)</strong></td>
</tr>
</tbody>
</table>

*Note.* Figures are expressed as a rounded percentage of total responses; data from UK Study (Wheldall et al., 1989) are in parentheses.

Results from other studies in this area have also shown the same pattern of more approval than disapproval of academic behaviour and more disapproval than approval of social behaviour (Harrop & Swinson, 2000; White, 1975; Winter 1990; Wyatt & Hawkins, 1987). As was the case in the secondary study by Wheldall et al., teacher approval to academic behaviour in the secondary classes investigated by White (1975), Winter (1990) and Wyatt and Hawkins (1987) was more than three times more frequent.
than disapproval. There is more variability in the research in relation to the ratio of approval to disapproval for social behaviour. Like Wheldall et al., Wyatt and Hawkins found that secondary teachers were more than three times more likely to disapprove of social behaviour (1:3) than to approve of it, while Winter found the secondary teachers in Hong Kong provided higher rates of social approval than in other studies. In the Hong Kong study, the ratio of approvals to disapprovals for social behaviour was 1:1.5, being a more favourable ratio but still a preponderance of more disapproval than approval. When it came to approval for social behaviour in the study of secondary teachers by White, however, there were so few instances that for every instance of approval students could expect to receive 24 disapproving responses (1:24 approvals to disapprovals). In reality, in 22 of the 43 secondary classes (over 50%), teachers gave no approval to social behaviour at all.

An analysis of the data presented in Harrop and Swinson (2000) showed that in the secondary classes included in their study teachers used more than five times more approval to academic behaviour than disapproval. This finding is more similar to that found in the present study (7:1) than any other secondary study reported where ratios have been presented or subsequently deduced. The data relating to the ratio of approvals to disapproval for social behaviour is very alarming in Harrop and Swinson, where it would appear that for every positive social response students would also receive 19 negative social responses (1:19). This latter figure is much more dramatic than even that found in the present study (1:6), a very unfavourable ratio when compared to other studies (although it may be less dramatic when absolute rates are taken into account). Caution should be exercised, however, when drawing conclusions from Harrop and Swinson as only 10 classes were involved and only one lesson analysed for teacher responses. Another unusual finding in Harrop and Swinson, and one which represents a departure from the norm, is that secondary teachers in this study
gave more disapproval to academic behaviour (55%) than to social behaviour (45%).

Notwithstanding the anomaly found in their study, Harrop and Swinson concluded that:

approval is seen to be given primarily to academic rather than social behaviours, with the reverse being the case for disapproval. Such a finding transcending time, methodology and school system can be quoted as an established feature of observed teacher behaviour. (2000, p. 481)

The results from the current study provide further confirmatory evidence of this particular feature of teacher behaviour. More than a quarter of a century ago White (1975) explored some possible explanations as to why this may be the case. She believed that the most compelling reason for a preponderance of disapproval over approval to social behaviour is that these rates of responding are in themselves reinforcing for the teacher. As she pointed out, disapprovals often terminate misbehaviour immediately (although often temporarily) "so that teachers are rewarded immediately in their role as classroom manager" (White, 1975, p. 370), a point also argued cogently more recently by Maag (2001). The immediate results of disapproval may well be more reinforcing for the teacher than approving of behaviours the teacher may want to see increased by, for instance, deploying approval to alternate appropriate behaviour or by ignoring the inappropriate behaviour so as not to inadvertently increase its frequency (White, 1975).

It is clear that the pattern of preponderance of disapproval over approval to students' social behaviour, as well as the absence of any meaningful absolute rates of approval to social behaviour, has had a long and consistent history. Brophy (1981) noted that praise for conduct was the least frequent teacher response of all teacher responses. In similar vein, Strain et al. (1983) observed that given an episode of child compliance, the probability of positive social consequences was only 0.10. Stated more
simply, only 10 of every 100 episodes of compliance were followed by positive feedback from the teacher (Strain et al.).

Nafpaktitis et al. (1985) suggested that in order to achieve acceptable levels of student engagement, teachers should make 50 approving comments or gestures and only 5 or fewer disapproving responses during a class period. This ratio of 10:1 approvals to disapprovals is certainly not evident in the natural rates of teacher approval and disapproval in any of the studies described. Others have suggested more modest approval/disapproval ratios of 3:1 (Shores, Gunter, & Jack, 1993), 4:1 (Walker, Colvin, & Ramsey, 1995), and even 5:1 (Hart & Risley, 1995; Flora, 2000) for increasing the frequency of desirable behaviours.

The high ratio of approvals to disapprovals for academic behaviour (nearly 7:1) in this sample of Australian teachers is encouraging but may be undermined by the associated high levels of disapproval to social behaviour (1:6). Certainly there is no evidence in the present study that teachers are deploying approval for appropriate social behaviour in any systematic or effective way, but rather are following the general trend of teachers in most parts of the world. Moreover, the high ratios of disapproval to approval for social behaviour in the current study suggest that the behaviour of Australian teachers may be worse in this respect than their peers elsewhere.

8.5.3.1 Relationships Between Teacher Response Variables and Teacher and Class Variables

Teacher responses to student academic and social behaviour were considered in the current study in terms of teacher demographics and other variables. Where comparisons are made with other studies, they are made principally in relation to Wheldall et al. (1989), as this is the study on which the current work was based and in which most, if not all, of these variables were also explored. Other researchers have variously considered selected variables in their investigations at the secondary school
level. Where comparative or more general data in terms of these variables are available from other relevant studies, these have also been included in the discussion.

In the present study, the sex of the teacher did not appear to be a determining factor in responsiveness, except in relation to disapproval to academic behaviour. T-tests presented earlier indicated that male teachers responded significantly more in terms of disapproval to academic behaviour, t(73) = 3.32, p < .01, than their female peers. Similarly, a medium to large effect (d = 0.71) was found in terms of the differences evident in the manner in which male and female teachers disapprove of their students’ academic behaviour. The relationship between teacher sex and teacher responses found here lends weight to possible differences in the way male and female teachers respond to their students. There was also some evidence of a trend towards male teachers also being more approving to academic behaviour (and hence more responsive overall). This was indicated by a medium effect (d = 0.52) for differential approval to academic behaviour, with male teachers tending towards giving more approval than female teachers. The statistical evidence, however, was not sufficiently strong for this to be claimed as a true difference.

Similarly, Wheldall et al. (1989) reported that there was little evidence to suggest that the sex of the teacher was an important variable in teacher responding. Again there was one exception, being that female teachers used significantly more disapproval to social behaviour than their male colleagues. It can be said that in both studies, teacher sex was not found to have a major impact on the types of responses distributed by teachers. Where exceptions to this general finding were evident, they were different in each sample.

The possible impact of teacher age and experience was not explored in Wheldall et al. (1989) but in the present study, where these variables were examined, no statistically significant were evident for variations in teacher responses when age and
experience were taken into account. This said, some variations and trends were evident in the data. Teachers in their first year of teaching were found to be more disapproving than approving overall, unlike any other group in the sample. Their high levels of disapproval to social behaviour suggest that these inexperienced teachers were not utilising optimal behaviour management strategies. (Teachers in their first year of teaching also had the lowest on-task levels of all groups.)

Similarly, teachers aged under 30 years were the only group who were more disapproving overall than approving overall. Again, high levels of disapproval to social behaviour were present. While caveats regarding small sample size should be heeded, it is interesting to note that there was evidence of a trend towards a significant correlation between increasing teacher age and decreasing negativity (specifically negative social responses), as well as a trend towards a significant relationship between increasing teacher experience and decreasing negativity, again, specifically fewer negative social responses. It would appear that the more experienced (and older) teachers become, the more skilled they may be in deploying their attention to students effectively. It should be reiterated, however, that these variations in the data were not sufficiently large to produce a statistically significant difference in the present study.

In line with the findings of the present study, Wyatt and Hawkins (1987) also found that no relationships of any significance existed between teacher responsiveness and teacher age, years of full-time teaching experience, or recency of training. This finding led them to the conclusion that the only way to identify teachers “for retraining in classroom motivation should probably be based on direct classroom observation of their behavior...not upon variables such as recency of training or age” (Wyatt & Hawkins, 1987, p. 48).

Apart from some similarities outlined below, there would appear to be little in common between the results of the present study and Wheldall et al. (1989) in relation
to the role of subject taught on teacher responses to student behaviour. Moreover, given the small sample sizes involved, it would not be prudent to draw conclusions based on these data. This caveat notwithstanding, it is noteworthy that, as was the case in the UK study, approval to social behaviour in the present study was low across all subject areas. Disapproval to social behaviour was the highest among Science teachers in both the New South Wales sample and the UK study, along with Modern Languages in the latter case (Wheldall et al., 1989). Whereas, teachers of Mathematics in the UK sample had the highest rates of approval to social behaviour, it was again the Science teachers in the present study who responded most frequently to positive social behaviour (as well as responding most frequently to negative social behaviour as already noted). Where minor variations were evident within the present study, Science and Art/Design teachers differed from the general trend by being more disapproving than approving overall.

A notable finding from the present study was that Year 7 classes (the initial year of secondary school in New South Wales) had the highest levels of teacher responses in terms of both academic and social behaviour. On all of the teacher response variables, Year 7 classes attracted the most responses. This is a partial replication of a finding from Wheldall et al. (1989), where first year secondary students received more approval to academic and social behaviours than any other year group. (In the Australian study, Year 7 students also received the most disapproval of academic and social behaviour as well.) Other differences are evident between the two studies. Whereas Wheldall et al. (1989) found all years receiving more approval than disapproval, this was not the case in the present study. In Year 7, and to a lesser extent in Years 8 and 10, total disapproval was higher than total approval. Moreover, while Wheldall et al. (1989) found a slight tendency for less approval to be given to older students, they concluded in general that differences in teacher behaviour between year groups were small. In the
current study, however, a significant correlation was found between increasing age of students and decreasing negativity. There is evidence that Australian teachers reduce their disapproval to students as they get older, principally in relation to their social behaviour. There appears, therefore, to be a general decline in the level of responses overall directed at students in this Australian sample (including reduced negativity) that is not as apparent in the UK study. This is a minor difference between the two studies, with the findings from the present study confirming the earlier findings of Wyatt and Hawkins (1987) and White (1975) in relation to declining levels of teacher responsiveness with increasing age of students. In the case of Wyatt and Hawkins, there is some evidence that Grade 12 students attracted relatively fewer responses (0.17 approvals and 0.11 disapprovals) than Grade 9 students (0.40 approvals and 0.23 disapprovals), for instance. This trend toward decreasing responses as student age increases had also been found earlier by White (1975). In addition, while Harrop and Swinson (2000) found that there were no statistically significant differences in approval rates from infants through primary to secondary school in their UK study, they did report a (non-significant) trend towards decreasing disapproval as the age of students increased across the three phases of schooling.

8.5.3.2 Relationships Among Teacher Response Variables

Of interest in this research, and in the research of others, have been the relationships evident among teacher response variables. In the present study, teacher approval to academic behaviour was related to teacher disapproval to academic behaviour at the 1% level, suggesting that teachers who were more approving were also more disapproving in terms of the academic behaviour of their students. In short, they were more responsive generally. The only statistically significant correlation found in the present study, this relationship was also found in Wheldall et al. (1989). But where Wheldall et al. found that disapproval of academic behaviour was also significantly
correlated to approval to social behaviour, no such relationship was found in the present study. Weaker trends were evident between academic responding (both positive and negative) and teacher approval to social behaviour in the current study, but these were not sufficiently strong to be statistically significant. Therefore, there was only a partial replication of Wheldall et al. in respect of the relationships between the four discrete teacher response variables.

While Swinson and Harrop (2001) investigated these relationships at the infants and primary school levels, their research in this area did not extend to the secondary school level. At the junior school level, however, they found an inverse relationship between approval to academic behaviour and disapproval of academic behaviour, a finding they described as "might be expected" (Swinson & Harrop, p. 164). On the other hand, Merrett and Wheldall (1987b) had found (among other things) a significant (if not weak) relationship between approval and disapproval to academic behaviour, similar to that found in the present study.

It would appear that equivocation exists as to likely relationships among teacher response variables. The relationship between teacher approval and disapproval to academic behaviour in the current study may provide some further evidence to suggest that teachers who are more approving of students' academic behaviour are also more disapproving of academic behaviour. This may point to these teachers being more responsive generally in terms of academic feedback to their students but few conclusions may be drawn from these data.

8.5.4 Student On-Task Behaviour and its Relationship to Teacher Behaviour: Comparing the New South Wales Sample with Other Samples

The data relating to on-task behaviour in the current study suggests that New South Wales secondary students appear to do what their teachers have requested of them nearly 86% of the time, on average. Given that only one quarter of the classes
involved in this study had average on-task levels below 80%, it could be argued that on-task behaviour was generally high in the present study. The on-task behaviour level in the parallel UK study of 130 secondary classes carried out by Wheldall et al. (1989) was 80.5% on average. Data gathered in Hong Kong, also using OPTIC (Merrett & Wheldall, 1986) to measure student on-task behaviour in 86 secondary classes (Winter, 1990), indicated that average on-task levels were somewhat lower at 69.93%. Quite a large number of classes in that study exhibited low on-task behaviour with 25% of classes with on-task levels below 60% (compared to 25% under 80% in the current study). Moreover, there was a wide range of observed on-task behaviour from 25% to 97% (Winter, 1990). The earlier study of Thomas et al. (1978) (employing a different measure of on-task behaviour) involving 10 Year 7 classes in New Zealand showed on-task behaviour ranged from 43% to 90% with an average of 66%. Given students in these classes were enrolled in a special unit for junior high school students experiencing some difficulties, it may be expected that the average on-task levels were relatively low.

Wyatt and Hawkins (1987) also appear to have collected student on-task behaviour data (using a measure other than OPTIC), as they reported that "with the exception of kindergarten students who were on task 95% of the time, there was remarkably little variation in mean percentage of on-task behavior across grade levels" (p. 45). No specific data, however, is provided for grades levels, which in their study included some secondary classes.

Nafpaktitis et al. (1985), exploring the relationships between the natural rates of teacher approval and disapproval and student off-task behaviour in 86 intermediate classes (Grades 6-9) in the USA, suggested that an acceptable level of on-task behaviour is "approximately 80% or better" (p. 366). Given this, the findings in the present study appear to be quite favourable.
It could be argued that the relatively high levels of on-task behaviour found in the present study may be being maintained by the very favourable ratio of approval to academic behaviour, teachers being seven times more approving than disapproving. Reference to the correlational data relating to teacher and student behaviour in this study (see Table 8.10), however, suggests that the only significant relationship that existed between the teacher response variables and student on-task behaviour was negative social responding. An inverse relationship between on-task behaviour and teacher disapproval to social behaviour was found in the current study. That is, more frequent negative social responses on the part of teachers were associated with lower on-task levels of students. Given the correlational nature of these data causality cannot be established. Some possible explanations for the relationship, however, could be that the higher rates of negative teacher responding may be a result of increased disruptiveness on the part of students, or the disruptive behaviour being maintained (and increased) by teacher attention. As we know, even negative teacher attention can be quite reinforcing for some students (Nafpaktitis et al., 1985; Russell & Lin, 1977; White, 1975).

This singular finding in terms of the relationship between teacher and student behaviour in the present study partially replicates the findings of Wheldall et al. (1989), where a significant negative correlation between student on-task behaviour and disapproval to social behaviour was found. Significant correlations were also evident between student on-task behaviour with approval to academic behaviour and approval to social behaviour in the UK study (Wheldall et al.).

Research by Nafpaktitis et al. (1985) and Thomas et al. (1978) also found that teachers' use of approval and disapproval was clearly related to student off-task behaviour, with teacher disapproval accounting for more than 25% of the variance in student off-task behaviour in the research by Nafpaktitis et al. Both studies also found
that the magnitude of the correlation of teacher disapproval was significantly greater than the correlation of approval with off-task behaviour. The findings in the present study lend support to those found by Nafpaktitis et al. and Thomas et al. that a stronger (inverse) relationship appeared to exist between student on-task behaviour and teacher disapproval than student on-task behaviour and teacher approval.

Winter (1990) also found a strong relationship between teacher disapproval and student on-task behaviour (negatively) in Hong Kong \((p < .001)\), but, like Wheldall et al. (1989), also found a strong relationship between teacher approval to academic behaviour and student on-task behaviour \((p < .001)\). Winter also made an interesting point that the lower the total response rates of teachers, the higher the on-task behaviour. Given the relatively high on-task levels in the present study and the relatively lower response rates of these Australian teachers commented on earlier, it could be argued that a similar phenomenon is occurring in the current study. Reference to Table 8.10, however, shows that there was no correlation between total responses and on-task behaviour to support this argument.

The findings in respect of the relationship between teacher behaviour and student on-task behaviour in the literature relating to the natural rates of teacher approval and disapproval are limited and equivocal (unlike in experimental studies). Wyatt and Hawkins (1987) concluded that, in their study replicating White (1975), differential approval and disapproval rates in various grades “seem not to be associated with the amount of on-task behavior being shown in those grades” (p. 45). They did, however, add a caveat to their conclusion, indicating that a more continuous sampling of student on-task behaviour (at variance to the method they used in their study) may have indicated a different result. Clearly this area of teacher responses and student on-task behaviour requires more systematic investigation.
8.5.5 *Contribution of the Current Study and Implications for Practice*

The findings from the present study provide further evidence of the nature of teacher attention at the secondary school level and specifically in the Australian (New South Wales) context. While work in this area has been carried out in the USA, the UK, New Zealand, Canada, Hong Kong, and in the remote Atlantic island of St Helena, apart from the study by Russell and Lin in the 1970s which involved one teacher and a class of 20 students only, there appears to be no other relevant Australian data in the research literature. This study of 79 secondary teachers and their classes redresses that situation, in part at least.

Many of the findings of Wheldall et al. (1989) have been replicated in the current study providing further evidence of the sustained nature of "typical" teacher responses to student classroom behaviour. Replication is an important research activity in its own right. There are, however, some interesting differences between the Australian and UK data relating mainly to the *rate* of responding (lower in Australia than the UK) and the magnitude of the *ratios* of both approval to academic behaviour and disapproval to social behaviour (being larger in the Australian study in both instances). These apparent differences raise the question of whether these are real cultural differences or merely a result of an idiosyncratic sample of teachers.

Notwithstanding the relatively high on-task behaviour levels found in the present study, teachers frequently complain about the poor behaviour of their students. As was shown in Chapter 4, teachers in New South Wales nominated 20% of their classes as being behaviourally troublesome and 53% of teachers indicated that they thought they spent more time than they ought on matters of order and control in the classroom. Clearly, the management of student classroom behaviour causes considerable difficulties for many teachers. Providing sufficient feedback to students regarding appropriate classroom social behaviour has been shown repeatedly to further
improve behaviour. But over one-third of teachers in the present study (34%) gave no positive feedback at all to students in terms of their social behaviour or classroom conduct.

Another implication of the findings of the current study relates to the impact of the variability of teacher responses. The example of a typical school day experience of a hypothetical Year 9 student (see Table 8.8) raises some issues as to the nature and effectiveness of the school experience. In such an instance, a participating student would, hypothetically, be involved in classes in one day where half of his/her teachers were more approving than disapproving; the other half not. As has already been discussed, the level of teacher responsiveness was also highly variable. Such variations in approval and disapproval and rate of teacher responsiveness could lead students to having a high level of uncertainty as to the nature of typical or predictable classroom interactions. Given the emphasis on the need for consistency in behaviour management approaches, the inconsistent nature of the natural rates of teacher approval and disapproval is a cause for concern. Moreover, participating in classes where on-task behaviour varies by more than 20% at its extremes (from 73% to 96% as was the case in this illustration) may arguably give rise to inconsistent patterns of application on the part of some students. While the typical day of a Year 9 student scenario is an illustration only, it provides an insight into the impact of highly variable teacher responses in the secondary school, where students engage with many different teachers, often in the course of one school day.

High variability in teacher responses in several studies may suggest that teachers bring to the classroom their own highly idiosyncratic set of behaviour management principles and practices. Such variability also suggests that either many teachers' behaviour remains relatively unchanged as a result of pre- and in-service training initiatives, or, more concerning still, that many have never been exposed to effective
training in the systematic deployment of their attention to students as a means of providing effective classroom management.

8.5.6 Further Research

As alluded to above, the sample of teachers included in the present study may not be indicative of typical Australian teachers. While the teachers involved were drawn from distinct and different areas of the Sydney metropolitan area, further research is needed, not only in country New South Wales, but also in other parts of Australia to determine whether the patterns of teacher responses found here are typical of Australian teachers or just this incidental group of teachers. Moreover, as education is a state responsibility in Australia (within a federal structure), there may be differences between teachers working in different state education systems. Research on a national level is required to clarify this situation.

Findings in need of confirmation with a larger and more diverse sample include the rates and ratios of responses of Australian teachers. Is lower response rate a widespread feature of Australian teacher behaviour or is it a feature of Sydney teachers, for instance? Differences in the way male teachers respond to their students could be explored further. While there was a clear finding in the present study in relation to male teachers being more disapproving of academic behaviour, there were other trends in the responses of male teachers that may be evident in a larger sample. There was also some limited evidence that teachers became less negative with age and experience. This would be an interesting aspect to explore. Do teachers acquire better skills over time or do those who struggle with behaviour management leave the profession relatively early, leaving a more skilled cohort in the profession by attrition?

Minor variations across teacher responsiveness in terms of the subject taught could also be investigated further. For instance, are some subject areas more amenable to increased responsiveness on the part of teachers? Does curriculum content influence
responsiveness? Subject taught was confounded by teacher gender in the present study. A more controlled study in this area may provide further information about the way different subjects are taught. There may be teacher education implications from such an investigation.

Also referred to above, the investigation of the relationship between teacher responses and student on-task behaviour should be explored more systematically. Are there optimal rates of approval and disapproval at the secondary school level and are these different as students increase in age? Many of the studies of natural rates of teacher approval and disapproval do not deal with this issue at all, or, if they do, do so anecdotally. Increased research effort in this area would be beneficial.

It is also interesting to note that in the study that marked the turning point in relation to teachers being more approving than disapproving (Nafpaktitis et al., 1985), it was also found that nearly 50% of all the approvals recorded were non-contingent. The strong relationship that was found between non-contingent teacher approval and student *off-task* behaviour in that study, is an important finding that should not be forgotten (see Chapter 7 for more details). Arguably, a more skilled approach to the effective deployment of teacher approval and disapproval would make the successful management of disruptive students a more achievable outcome. Time currently devoted to the (ineffective) management of problem behaviours could be invested in increased instructional time. Moreover, the stress associated with teaching would be reduced considerably and the classroom would become both a more positive, and less aversive environment for students and teachers alike.

Students with special educational needs have been found to be especially disadvantaged when it comes to teacher negativity (Sutherland, Copeland, & Wehby, 2001). Studies on the rates of praise in classrooms for students with emotional and behavioural disorders (EBD) have been found to range from only 1.2 to 4.5 per hour.
(Sutherland & Wehby, 2001). Moreover, observations of 20 classrooms for students with EBD have found that for more than 20% of the class time students were engaged in negative interactions with the teacher, with only 5% of the observed time reflecting positive interactions. Disturbingly, Heller and White (1975) found that students in low ability (secondary) classes received more disapproval than their peers in higher ability classes and that the nature of this increased negative attention was largely managerial (negative social) in nature. Fry (1983) also found that “problem children” received less positive affect from their teachers compared to their non-problem peers. Moreover, teacher negativity increased over the course of the school term with a concomitant increase in serious misdemeanours in the problem student group in the same period in Fry’s study.

Montague and Rinaldi (2001) found that as students at risk for learning disability or emotional and behavioural disorders got older, their awareness of their teachers’ manifest increased negativity towards them also increased:

Some time between 8 and 10 years of age...they seem to become conscious of their teachers’ negativity and low expectations and consequently, begin to view themselves more negatively, hold lower expectations, and see themselves as less competent academically. (p. 82)

It would appear that the preponderance of teacher disapproval is even more of a problem for students who are already not coping as well in the school environment. The complexity and impact of teacher-student interaction for students with special educational needs, particularly as they progress through the secondary school years, could usefully be explored further.
8.6 Conclusion

The confirmation that Australian teachers are more approving than disapproving overall, in line with the available data since the mid-1980s, suggests that this is a general and robust finding. That a sustained shift from teachers being more disapproving to more approving at both primary and secondary levels of schooling has occurred is a welcome finding and one that may arguably have been achieved by an increased emphasis of the value of positive reinforcement in teacher pre- and in-service training initiatives. The power of key teacher behaviour variables such as approval (and disapproval) arising out of the work of applied behaviour analysts may have contributed to this shift in teacher behaviour in the mid-1980s. The message appears to have only partially been understood, however. If the data from this Australian study are indicative, when it comes to the instructional or academic side of their school experience, students can expect to receive much more approval (seven times more) than disapproval from their teachers. This may, in part, explain the relatively high levels of on-task behaviour found in the present study (although this was not borne out statistically). In terms of classroom behaviour or conduct, however, students are very rarely acknowledged or praised when they are “doing the right thing”. Rather they are likely to receive six times more disapproval responses from their teachers in respect of their classroom social behaviour than approvals.

Australian teachers appear to have not only relatively low absolute rates of responding in contemporary terms, but also a more extreme pattern of responding compared with their colleagues outside Australia. While the high ratio of approval to disapproval in relation to academic behaviour is encouraging, the parallel ratio for social behaviour of 1:6 is cause for concern. It is simply not good enough that teachers be more approving in an attempt to make the classroom a more positive and affirming place. What is required is the skilful and systematic deployment of both approval and,
to a lesser extent, disapproval contingent upon student behaviour. A more thorough-going understanding of the principles of applied behaviour analysis and its implications for classroom practice is clearly needed to address the limitations currently evident in the way teachers distribute their approval and disapproval to students. The results of the present study suggest that the message of applied behaviour analysts has not been heard, or if it has been heard, has been largely ignored when it comes to dealing with the social behaviour of students in the classroom.
CHAPTER 9
DIFFERENTIAL TEACHER ATTENTION TO BOYS AND GIRLS IN THE CLASSROOM

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CHAPTER 9

DIFFERENTIAL TEACHER ATTENTION TO BOYS AND GIRLS

IN THE CLASSROOM

9.1 Overview

For over 30 years, there has been continuing concern with differential teacher attention to boys and girls in the classroom. In this chapter, the themes and issues in gender and classroom interaction are reviewed. The evolving theoretical perspectives on gender inequality are discussed and the pertinent empirical evidence is reviewed. The influence of feminism on the way classroom interactions between teachers and their students have been interpreted is considered, as is the way in which disruptive behaviour, mainly exhibited by boys, has impacted on the classroom environment (including referrals to special education services). More recent public concern with the relative underachievement of boys in school is discussed in light of differential teacher attention to boys and girls.

9.2 Background

The issue of sexual inequality in the classroom has been of concern for over 30 years, frequently generating more heat than light, in both academic and public debate. A central focus for this debate has been a concern with differential teacher attention to boys and girls. The matter of who gets the teacher’s attention and who dominates classroom interactions prompts questions about equity of educational opportunity for students sharing the same classroom environment. Prior knowledge and skills notwithstanding, it is apparent from the research literature that sharing the same

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physical space with the same teacher, does not necessarily equate to a shared or common teaching and learning experience. This review explores the themes and issues in gender and classroom interaction over the last three decades.

9.3 The Seventies and Eighties – A New Focus for Classroom Disadvantage

Depending on their perspective, researchers have variously interpreted differential teacher attention to boys and girls as being an issue of gender politics, of problem behaviour, and/or of academic or social competence. In the early work in this area, Brophy and Good (1970) observed that “boys have more interactions with the teacher than girls and appear to be generally more salient in the teacher’s perceptual field” (pp. 372-373). Brophy (1985b), in a critique of studies concerned with the interactions of male and female teachers with male and female students, observed that gender-related issues in education had actually been debated throughout the twentieth century. He claimed that from early in the century until about 1970, criticism of how students were differentially treated was focussed on the disadvantage experienced by boys, especially at the elementary or primary school level (Brophy, 1985). Concern with the relatively poorer academic achievement of boys in all subjects, but particularly in reading and the language arts, had led critics to suggest that schooling had become “too feminine” (Brophy, 1985b, p. 116), notwithstanding the fact that much of this suggested bias was “institutionalised in the past, when most teachers were male ‘schoolmasters’ and education was seen as important mostly for males” (Brophy, 1985b, p. 118).

From the mid 1970s, with the rise and impact of the feminist movement, research on gender and education burgeoned and changed focus, with inequality in the classroom, including the “preferential” treatment of boys by teachers, being one dominant theme (Acker, 1988, p. 307). By the late 1980s, a meta-analysis of more than 80 studies on gender differences in teacher-pupil interactions conducted by Kelly
(1988) found that boys attracted more interactions than girls, with girls receiving less criticism but also less instruction. Boys received both more academic and behavioural criticism than their female counterparts. Although girls were just as likely (slightly more in fact) as boys to volunteer to answer teacher questions, girls on average participated in only 44% of classroom interactions. Kelly’s finding that boys attracted more teacher attention than girls held true regardless of gender of teacher (although male teachers gave girls less attention than female teachers), age of the students, subject area, ethnic origin, socio-economic status, country, and in terms of when the study was conducted (Kelly, 1988). While Kelly found that the under-representation of girls in classroom interactions was not particularly large, it was consistent. There were no studies in the meta-analysis reporting more teacher interactions with girls than boys (Kelly, 1988).

French and French (1984) drew similar conclusions to Brophy and Good (1970), claiming that in mixed sex classes, it was well established that male students received more teacher attention than females. In support of this claim they detailed findings from their British study of a selected fourth year junior class (29 students aged 10 to 11 years) whereby they analysed interaction turns during a teacher-class discussion lesson led by a male teacher. They found that of a total of 188 interaction turns during the lesson (taken variously by the teacher, pupils in chorus, unidentified pupils, boys, and girls), 50 were attributable to boys whereas only 16 were attributable to girls. They made the point that given girls were in the majority in the class (16:13) “the proportions of the imbalance become even more apparent” (French & French, 1984, p. 127). Significantly, they found that it was not the boys generally who monopolised the “interactional space” (p. 128) but a small subset of four boys who dominated the classroom interaction in this particular class.
They also noted what appeared to be attention-seeking behaviour on the part of the boys in initiating and maintaining interactions with the teacher by consistently taking up unusual positions on issues of classroom discussion. They went so far as to say that the small subset of boys responsible for the high level of interaction in the lessons was deliberately "engaging in strategies to secure that attention" (French & French, 1984, p. 133). While they acknowledged that teacher bias can be responsible for more attention being provided to boys, they asserted that "remediation of male-biased teacher attitudes" (p. 133) alone may not be sufficient to bring about the shift in interactional bias favouring boys that they suggested exists in classrooms. They claimed that teachers must also become sensitive to the interactional methods used by students themselves (in this case largely boys) in "securing attention and conversational engagement" (p. 133), and that in the main the strategies these male students use remain "invisible" (p. 133) to teachers.

This analysis is in accord with the views of feminist researchers writing in the 1970s and 1980s, one notable example being Spender (1982a, 1982b). Not unexpectedly, the issue of classroom interaction has been a matter of considerable interest to feminist researchers. Spender taped her own secondary school and college teaching, and found (to her despair) that even when she explicitly attempted to spend an equal amount of time with both sexes, the analysis of her tapes showed that she still provided more attention to the males in her class (Spender, 1982a). Out of 10 taped lessons, the maximum time Spender spent interacting with girls was 42% and on average 38%; the minimum time for boys being 58%. Having found these results she wrote:

It was nothing short of a substantial shock to appreciate the discrepancy between what I thought I was doing and what I actually was doing. (Spender, 1982a, p. 56)
The issue of teachers being unaware of their differential responding to boys and girls was also a finding of Kelly’s (1988) meta-analysis. Spender (1982a) claimed that girls typically received about only one-third of teacher attention and argued that boys considered having two-thirds of the teacher’s time as “a fair deal” (p. 57). Moreover, she claimed, “if this ratio is altered so they [the boys] receive less than two thirds …..they feel they are being discriminated against” (Spender, 1982a, p. 57).

Not all researchers in the 1970s held the view that large and discriminatory differences in the distribution of teacher attention to boys and girls existed. In a book detailing the repeated studies that comprised the well-known ORACLE (Observational Research and Classroom Learning Evaluation) study in the UK in 1976 (and in 1996), the authors specifically revisited the issue of gender in terms of classroom interaction in the 1970s (Galton, Hargreaves, Comber, Wall, & Pell, 1999b). Asserting that the highly structured observation schedule used was designed to be very low inference, and hence, ensured that findings “were less susceptible to criticisms of ideological or other bias” (Galton et al., p. 96), they claimed that the ORACLE 1976 data revealed “that, in general, teachers did not favour one sex more than the other in the distribution of their attention” (Galton et al., p. 96).

Galton et al. (1999b) went on to say that this, although little was made of it at the time, was an important finding and one “which throws doubt on some of the claims about male dominance of classroom interaction which were then emerging” (p. 96). The authors noted that the ORACLE 1976 research was conducted at a time when feminist research and discussion, conducted by researchers such as Spender and Clarricoates, was heavily focused on the classroom as a site of major interest in terms of the “greater power and influence of males……where, it was argued, boys dominated discussion and received disproportionate amounts of teachers’ time and attention” (Galton et al., 1999b, p. 96). Moreover, the authors sought to set the record straight in relation to how
some of their data and commentary from the 1976 study (presented in *Inside the Primary Classroom*, Galton et al., 1980) had been reported by French and French (1984) as supporting their claim that teachers favoured boys in classroom interactions. They argued that the evidence on which French and French relied from the *ORACLE* data “questioned rather than confirmed the findings of the other studies reported in the paper” (Galton et al., 1999b, p. 97). In the *ORACLE* study of 1976, little difference was found in the distribution of teacher attention, with a slight tendency (an average difference of less than 1 per cent) for boys to get more attention than girls. That Galton et al. took the time to correct the use of their findings some 15 years after French and French (1984) published their study is evidence of some of the “heat” that gender issues in classroom interaction has generated over the years.

Following French and French (1984), other researchers explored the role of classroom talk in classroom learning and the role teacher attention plays in maintaining and exacerbating disadvantage (see, e.g., Swann & Graddol, 1988). While recognising that not all talk is of the “valuable learning-through-talk variety” (p. 63), other talk being “useless chatter or noise from disruptive boys” (p. 63), Swann and Graddol (1988) maintained that gender inequalities favouring boys operated in the classroom through teacher-mediated prejudices. Their study involved the analysis of two sequences of talk, between small groups of primary aged students (one group of 10-11 year-olds, the other 9-10 year-olds) interacting with two different teachers who, incidentally, were described as having different teaching styles.

Swann and Graddol (1988) were particularly interested in how individual students engaged in classroom talk, how turns at speaking were allocated, and how students were selected or how they put themselves forward to speak. They were also interested in the roles the various participants played, including the teacher, the talkative students as well as the quieter ones. Swann and Graddol argued that, despite
the differences in class management style of the two teachers and student background that existed between the two groups, boys talked more than girls overall, whatever measure was employed. Irrespective of the measurement of the number of words spoken, the number of speaking turns they took, and the number of interchanges they had with the teacher, boys dominated overall participation in the two sequences.

The researchers drew particular attention to the role of eye gaze by the teacher in inviting and cueing student responses. In the first group, 60% of student-directed gaze was towards the boys, while in the second it was higher at 65%. One explanation put forward to explain the overall bias in gaze direction favouring boys was that an experienced teacher may use scanning strategies as a way of regularly monitoring boys' behaviour "for signs of potential misbehaviour and discipline problems" (Swann & Graddol, 1988, p. 56). Swann and Graddol argued that by making eye-contact, particularly just prior to questioning, the teacher was effectively inviting the student to respond and that gaze direction systematically favoured boys. Others may consider that it is simply a good technique for keeping students, who may be drifting off-task, engaged. Brophy and Good (1970, 1974) argued that because boys are active, "salient" (1970, p. 373), and perceived by teachers as potentially disruptive, they are frequently provided with response opportunities as a method of maintaining appropriate classroom discipline. Conversely, what has been described as the compliance and inactivity of female students results in fewer opportunities for them to be approached to respond (Brophy & Good, 1974).

Swann and Graddol (1988) concluded that the distribution of talk derives from a "close collaboration between pupils and teacher" (p. 60), confirming the view of French and French (1984) that there are strong interaction effects between student and teacher behaviour in the classroom. They asserted that girls were most excluded from the more "valuable" (Swann & Graddol, 1988, p. 63) talk of the classroom. They suggested that
the uneven distribution of talk in the classroom served to maintain and reinforce the
consensus in society that this is “normal” (Swann & Graddol, 1988, p. 63). They
claimed, moreover, that “…girls seem to have learnt to expect a lower participation
level than boys, and boys seem to have learned that their fair share is a larger one”
(Swann & Graddol, 1988, p. 63), concluding that, “Classroom talk forms an important
arena for the reproduction of gender inequalities in interactional power” (Swann &
Graddol, 1988, pp. 63-4).

Hammersley (1990), in a critique of French and French (1984) and Swann and
Graddol (1988), however, questioned the value of their respective findings and argued
that serious flaws in their approach undermined the validity of their conclusions. He
stressed that the small and selective nature of the data used in both studies limited their
generalisation to wider populations. Referring to French and French, he questioned
whether data from one primary classroom detailing one form of interaction, being a
teacher-led discussion, can be relied upon to add weight to their assertion that their
findings confirmed the “now well established [finding] that in mixed-sex classrooms
male pupils receive more teacher attention than do females” (French & French, 1984,
p. 127).

Hammersley (1990) made an important general point relevant to this review
regarding the rationale of the research focus undertaken by French and French (1984).
He argued that a belief that may underlie the research focus of the study, that girls and
boys should be treated in the same way in every respect, is not acceptable. “The issue is
not whether we should treat people as the same or as different, but rather what aspects
of difference should be taken into account for what purposes” (Hammersley, 1990, p.
126). Moreover, in studies (like French & French) where teacher attention is
undifferentiated and draws no distinction between, for example, “questioning and
telling, praising and blaming etc" (Hammersley, 1990, p. 126), the usefulness of it as a measure of advantage or disadvantage must be seriously challenged.

The idea that equal aggregate teacher attention between the sexes per se is "a good thing" (Hammersley, 1990, p. 126) represents a rather unsophisticated analysis of classroom interactions. Hammersley's assertion that we would not wish to insist that teachers reprimanded girls for equal amounts of time as boys irrespective of whether they committed the same number of serious offences as the boys (Hammersley, 1990, p. 126) may seem a little flippant, but nonetheless makes the point. Global measures of teacher attention are not sufficient to make general claims for gender imbalance in classroom interactions (as can be seen, e.g., in Merrett & Wheldall, 1992). Hammersley argued that it is the type of teacher attention, rather than amount, that is a much more significant factor likely to affect the differential achievement of students in the classroom (Hammersley, 1990), a matter with which neither French and French (1984) nor Swann and Graddol (1988) concerned themselves.

While acknowledging that the later work of Swann and Graddol (1988) takes into account some of the weaknesses of French and French (1984; e.g., duration of conversational turn was considered in Swann & Graddol's study), Hammersley (1990) still elucidated a number of flaws with the research. He claimed that Swann and Graddol made too great a claim for the importance of public classroom talk and emphasised that this is just one form of talk that may be important in the classroom instruction. Hammersley (1990) conducted a systematic critique of the manner in which French and French (1984) and Swann and Graddol (1988) arrived at their conclusions, an analysis too thorough in detail to be reported extensively here. Basically he was critical of their ethnographic approach, which he considered produced limited explanations only of the interactions occurring in very small classroom data sets rather than testing and developing the more theoretical perspectives they were
apparently attempting to establish. He seriously questioned the capacity to generalise their findings to wider populations without more systematic and rigorous research being undertaken.

Kelly (1988) observed that while she acknowledged the important insights qualitative researchers like Spender and Stanworth contributed in the early 1980s to our understanding of gender differentiation in schools, she found that, “The picture they paint tends to be more extreme than that provided by quantitative researchers” (p. 20). She also noted that none of the quantitative studies reported anything like the degree of differentiation between the sexes that the qualitative researchers found (Kelly, 1988). Brophy’s observation in the mid 1980s seems pertinent here:

Claims that one sex or the other is not being taught effectively in our schools have been frequent and often impassioned, especially when based on philosophical grounds rather than the examination of empirical data. (Brophy, 1985b, p.115)

9.4 Is It Really a Matter of Gender?

One important finding in both the French and French (1984) and Swann and Graddol (1988) studies according to Hammersley (1990) was that only some boys appeared to be more successful in the classroom dynamic than girls and some girls were more successful than many boys. To interpret the differences apparent in both studies as gender effects, then, is arguably making claims that were not really substantiated by these data. As he pointed out, “…we must remember that to refer to gender inequalities is to assume that gender is the key factor, and at the very least it may not be the only factor involved” (Hammersley, 1990, p. 140).

In similar vein, Dart and Clarke (1988) expressed reservations about some of the research practices employed in studies that they considered, in the Australian context at least, to have had significant impact on policy makers. For example, the Australian
Commonwealth Schools Commission Report on the Education of Girls – *Girls and tomorrow: The challenge for schools* (as cited in Dart & Clarke, 1988) drew on the work of Spender (1982a) as one of its major references, work which Dart and Clarke considered used inadequate methodology or inadequate reporting or both. The research conducted by French and French (1984) is also specifically mentioned by Dart and Clarke as an example of selective reporting and of “questionable research practices” (Dart & Clarke, 1988, p. 43).

In the present review, studies by French and French (1984) and Swann and Graddol (1988) have been afforded not insignificant consideration. The reason for this is that even where studies have questionable research methodology and where generalisations have been inferred from very small samples, their conclusions are often reported and given disproportionate attention in the research literature. Perhaps even more importantly, the conclusions drawn from such studies can move into the public arena and influence policy initiatives as exemplified by Dart and Clarke (1988). Commenting on the impact of Spender's work on Australian writers concerned with the education of girls, Dart and Clarke commented, “These reviewers and policy-makers appear to accept this research with its quite substantial limitations as the reality of classroom interaction in both primary and secondary classrooms” (Dart & Clarke, 1988, p. 43).

Dart and Clarke (1988) highlighted the importance of subjecting classroom interaction data to adequate analysis. Their study of 24 Year 8 Science lessons in a metropolitan secondary school in Australia (Brisbane) compared the participation of boys and girls. Their analysis, involving the verbal interactions of three teachers and 113 students in four classes, differentiated teacher-to-student interactions as being *organisational, behavioural or task*. Student to teacher interactions were classified as either a *response* or an *initiation*. Dart and Clarke found that in every interaction
category but one, boys had a greater number of interactions than girls, a finding (as they pointed out) that had it been taken on its own, would "join the many others where results have been reported simply as number or percentages of interactions and add to the literature supporting sex bias in science classrooms" (Dart & Clarke, 1988, p. 46).

Further analysis of the results in Dart and Clarke's (1988) study, however, showed that girls actually initiated more interactions with the teacher than boys and the largest type of interaction difference between boys and girls occurred in the "behavioural" category. The importance of the role of behavioural criticism in accounting for the higher levels of teacher-student interaction in the case of boys had been highlighted much earlier by Brophy and Good (1970) who asserted that boys brought "criticism upon themselves" (p. 373) by virtue of their more frequent disruptive behaviour. Brophy and Good (1970) considered that it was the boys' behaviour that was responsible for the differential level of this type of attention rather than "a consistent teacher set or bias toward being more critical towards boys than girls in equivalent situations" (p. 373). As Brophy and Good (1974) concluded, although consistent sex differences appeared in the elementary school studies they reviewed, these could more accurately be construed as student effects on teachers rather than teacher effects on students.

Kelly (1988) also found that the discrepancy between classroom interactions of boys and girls was most marked in the specific area of behavioural criticism. Kelly found that while girls received nearly their "fair share" (p. 6) of praise (48%), they received only 35% of the total criticism (80% of which related to behaviour), with only 32% of the behavioural criticism being directed at girls. Having said this, Kelly argued that behavioural criticism alone did not explain the overall imbalance in interactions. As she pointed out, boys also got "more instructional contacts, more high-level questions, more academic criticism and slightly more praise than girls" (Kelly, 1988, p. 21).]
The finding in Dart and Clarke's study (1988) that more girls initiated interactions with the teacher provided contradictory evidence to that found by other classroom interaction researchers such as Spender. In respect of the finding relating to the increased interactions in the behavioural category, Dart and Clarke pointed out that only 6 boys of 42 accounted for 49% of the total of such interactions for all boys in the sample. Moreover, only 4 girls accounted for 47% of the total behavioural interactions for all girls in the sample, demonstrating that a relatively small number of students (who incidentally were all in the same class), both boys and girls, were responsible for a large number of the behavioural interactions overall. Had these data been interpreted at face value, these important aspects of the classroom dynamic would have been missed. (The issue of disproportionate involvement of a few students was also raised in Brophy (1985), Brophy and Good (1974), French and French (1984), and Swann and Graddoll (1988), but Kelly (1988) found equivocation on this issue in her meta-analysis.)

Dart and Clarke (1988) asserted, however, that the most useful information to be gleaned from their study was that an analysis of the means on the various dimensions of interaction for boys and girls showed there were no statistically significant differences between the two groups. Expressed illustratively and powerfully by the authors, boys were involved in 15.02 interactions while girls were involved in 12.96, a difference of 2.06 interactions over six lessons. "In other words, in any given lesson, a boy could receive 0.3 of an interaction more than a girl! Is that difference big enough to claim that girls are disadvantaged?" (Dart & Clarke, 1988, p. 47).

Dart and Clarke (1988) also drew attention to the varied and equivocal nature of the findings in the research literature on classroom interactions and sex differences, an observation also made by Croll (1985) a few years earlier. He commented that, although a number of studies had shown that in mixed-sex classrooms boys take a larger part in discussion and receive more teacher attention, the extent of "this male
predominance" (p. 220) varied considerably across different studies (Croll, 1985). As part of another project, Croll systematically observed 34 second-year junior classes in 20 British schools with a view to exploring the teacher-student interactions of boys and girls. The context for the broader study was a comparison of the classroom activities and interactions of children with special educational needs with those of other children in the same classrooms. As part of the larger study Croll was carrying out (Croll & Moses, 1985), it was established that students who were considered by their teachers as having learning and behaviour problems received considerably more individual attention than other students in the class. Moreover, the majority of these students were boys.

Croll (1985) asserted that it may be that the higher average level of attention to boys comes about more as a result of the tendency for students with special learning needs to get extra attention in the classroom than as an issue of sex bias more generally. Croll found that the students with special needs did receive considerably more attention than the students in the control group, and that the girls with special needs got exactly the same amount of attention as the boys with special needs; there were just more of the latter (66:31). In terms of the students in the control group, there was not a tendency for all or most of the boys to receive more attention than all or most of the girls. By analysing interactions based on individual teacher attention in three bands of below average, average and above average, the distribution of male and female control students across the three bands was shown to be virtually identical.

The conclusion to be drawn from these data using these three broad bands appears to be that boys and girls are equally likely to get above average, average and below average amounts of teacher attention. Further analysis of the above average and below average bands, however, showed that while there were no differences in the distribution of attention to boys and girls receiving below average amounts of teacher
attention in the more detailed low or very low categories, there were statistically significant differences between the attention boys and girls received in the above average band. Divided further into high and very high categories, all but one of the girls (19 out of 20) were in the high category of individual attention, whereas nearly half the boys were in the very high category (9 out of 19, Croll, 1985). Croll’s analysis was that there was not a tendency, amongst the control sample in his study, for most boys to receive more attention than all or most of the girls. He claimed that boys and girls were equally likely to be in the above and below average bands of interaction. A few boys, however, typically received “very much higher amounts of teacher attention in a way that is not true for girls” (p. 223).

Croll (1985) pointed out that these findings from his systematic observational study were in line with the findings from French and French (1984) who, as already discussed, suggested that the higher average number of turns taken in teacher-led discussion came about because of a very high level of participation by a small number of male students. Croll’s study confirmed that there is a tendency for boys to receive a higher level of individual teacher attention than girls but he suggested that the magnitude of the difference was relatively modest (in the order of 1:0.86). Moreover, further analysis of the data showed that the imbalance arose from the higher number of boys exhibiting learning and behaviour problems. His observations showed that teachers gave more individual attention to students with special learning needs but that this was the case irrespective of whether they were girls or boys. Further, while there was still a higher average level of individual attention given to boys than to girls in the group without special educational needs, this was accounted for by a few boys only. There was not a uniform tendency for most boys to receive more attention than most girls.
Importantly, Croll (1985) also suggested that the imbalance in teacher attention arose from classroom management difficulties relating to having a number of students with special educational needs in the class and a few individuals who monopolised the teacher's attention. Moreover, Croll (1985) did not consider that teachers displayed an "all-pervasive sexist bias" (p. 223) in the classroom. Brophy's (1985) conclusion that a large proportion (even a majority) of criticism is typically directed at a small group of boys "who frequently misbehave and are usually low-achievers" (p. 121) supports Croll's contention that differential teacher attention arises from classroom behaviour management issues.

Croll's study (1985) remains an important one in the classroom interaction research literature as it detailed a significant data set, collected systematically and subjected to detailed analysis. While coming to similar conclusions as previous research undertaken in the field, it was able to offer explanations beyond polemic for some of the imbalances in classroom interaction.

Providing further detailed data of classroom interactions in the USA, in a large study of 63 elementary classrooms in 10 schools, Irvine (1986) explored the effects of student race, sex and grade level on teacher-student interactions, drawing on the earlier work of Brophy and Good (1970). In terms of sex differences, Irvine found that boys initiated more positive and negative interactions with teachers than did girls, and boys received significantly more negative feedback than girls. Boys also received more non-academic (procedural and behavioural) feedback than girls and in the upper elementary grades, girls received significantly less academic feedback than male students. Irvine claimed that the results from her study supported the findings of previous work "on the obscurity of female students and the dominance of male students in teacher-student classroom interactions" (Irvine, 1986, p.17). She claimed that the race of the student and the grade level also influenced classroom interactions, but as these issues are not
the focus of this review the details of her findings in these respects have not been included here.

Irvine (1986) pointed out that the more frequent initiations made by boys (resulting in both positive and negative interactions) resulted in more contact with, and verbal feedback from, the teacher. Irvine considered that this confirmed the view of Brophy and Good (1974) that high-achieving boys assert themselves through positive initiating behaviours (such as dominating class discussions by answering without being recognised), while low-achieving boys initiate through more negative behaviours, such as misbehaving and violating rules and norms. This results in both high- and low-achieving boys demanding teacher attention, recognition and acknowledgement, with the teacher responding reactively by giving a disproportionate amount of feedback to boys (Irvine, 1986). This accords with Croll’s view (1985) (outlined above), that differential attention to boys is a matter of inadequate classroom management skills on the part of the teacher.

9.5 The Nineties – Back to Boys Being Disadvantaged?

Since the 1990s, teacher attention notwithstanding, educational outcomes for boys have once again become a matter of concern. The emphasis in the 1970s and 1980s with the domination of the classroom environment by boys, thereby disadvantaging girls, has largely given way in much of contemporary educational debate to rising concern about poor educational outcomes for boys (although some researchers see this change of emphasis as being unwarranted, see, e.g., Gorard, 2002; Warrington & Younger, 2000; Yates, 1997). In the debate about the “underachievement” of boys it is important to recognise that the discussion of the differential achievement of boys and girls hides the fact that performance levels by both boys and girls has been consistently rising, in secondary school examinations, at least (Younger & Warrington, 1996). It is therefore a matter of performance relative to girls
rather than one of boys' performance per se (Yates, 1997; Younger & Warrington, 1996; Younger, Warrington & Williams, 1999). Notwithstanding this situation, in a document entitled *Educating boys: Issues and information* (2003) published by the Australian Commonwealth Department of Education, Science and Training, an assertion was made that not only was the performance of boys poor, relative to that of girls, but that there was some evidence that the gap between boys and girls had increased over time. Moreover, it was further claimed that, "in some measurable instances, the performance of boys, as a group, appears to have declined over time" (Commonwealth Government of Australia, 2003, p. 1).

By contrast, in the UK, Gorard (2002) argued that in examinations at all Key Stages, General Certificate of Secondary Education (GCSE) and A level there was no gender gap. Pointing out that at the lowest level of each qualification there were approximately equal numbers of boys and girls, Gorard claimed that this was "good news for the assessment system, and bad news for those who were then trying to explain the gender gap in terms of boys' laddishness and poor attendance at school" (Gorard, 2002, p. 236). Moreover, he pointed out that where the gap in achievement did exist it was at the very highest level of attainment, affecting mainly a small proportion of the most able boys and most able girls. Furthermore, Gorard drew attention to the fact that an overall gap "in favour of girls" (p. 236) had existed in every year back to 1968 indicating that, as long as records like these have existed, there was no evidence that boys had ever done better than girls at GCSE level, concluding that there "appears to be no empirical justification for the recent annual panics about underachieving boys" (Gorard, 2002, p. 236).

Also investigating the differential achievement of girls and boys in the GCSE examinations in the UK, Younger and Warrington (1996) argued that there was less positive teacher-support for the learning of boys than for the learning of girls. By way
of interviews, questionnaires and focus groups, Younger and Warrington elicited the opinions of the teaching staff and over 400 students in Years 10 and 11 from one Suffolk school as to the factors that may contribute to the differential achievement of boys and girls.

Classroom interaction was one area on which they focused in their study. While most staff perceived little differential treatment of boys and girls within the classroom, student perceptions were quite different. As Younger and Warrington (1996) reported, “Many of the students felt that some teachers responded very differently to girls and boys, not simply in their classroom management responses, but also in terms of attention and support, in terms of questioning, and in terms of teacher attitude” (Younger & Warrington, 1996, p. 307). Not unexpectedly, however, even these student responses were differentiated along gender lines. For example, while 70% of girls believed that female teachers treated girls and boys in the same way, only 46% of boys held this view. But from interviews with the teaching staff it was apparent that for both male and female teachers, girls were seen to offer much less of a management challenge.

In relation to the dynamics of classroom interaction, Younger and Warrington (1996) asserted that there was clear evidence that a significant minority of students in their study were made to feel disengaged by what some saw as the “heavy attention” (p. 309) they received from teachers. Moreover, Younger and Warrington found that the level, quality and tone of teacher-student interactions were a major concern to low-achieving students. According to the researchers, negative dynamics in the classroom had an impact on both boys and girls in terms of GCSE performance (Younger & Warrington).

Providing further evidence of differential teacher responses to student behaviour, Merrett and Wheldall (1992) reported observations of samples of male and
female primary and secondary school teachers interacting with their mixed classes in British schools. Unlike the more generic interaction analyses employed in some of the earlier studies, the observation schedule they employed focused specifically on teachers' use of praise and reprimand to both academic and social behaviour separately, and differentiated teacher responses to male and female students. Student on-task behaviour was also observed. For the primary sample comprising 32 classes, there were no significant differences between teacher responses to boys and girls, nor were any significant differences apparent when the data for male and female teachers were analysed separately. For the sample of 38 secondary teachers, however, there was evidence for major significant differences in rates of responding to boys and girls, boys receiving more responses overall (both positive and negative) from teachers. When these data were analysed separately for male and female teachers it was found that female teachers used significantly more negative responses to boys' social behaviour, whereas male teachers used significantly more positive responses to boys' academic behaviour. In both samples, and for classes taught by male and female teachers separately, levels of on-task behaviour were very similar for boys and girls.

Merrett and Wheldall’s (1992) findings at the primary level, that very few differences existed in the way teachers distributed their attention to boys and girls, are more similar to Dart and Clarke’s (1988) findings (also indicating the absence of statistically significant differences in how teachers distributed their attention to boys and girls) than other previous research. They are also similar to the ORACLE 1976 findings (Galton et al., 1996), as well as approximating to Croll’s (1985) findings that differences in attention directed to girls and boys was much less dramatic than sometimes claimed. (As discussed earlier, the ORACLE 1976 project team and Croll both found only a modest difference in the attention boys received in junior classrooms.)
At the secondary level, however, Merrett and Wheldall's findings lend support to the perceptions of the secondary students in Younger and Warrington's (1996) study, that female teachers direct a great deal of negative attention towards their male students. The finding, in Merrett and Wheldall, that boys in secondary classes experience more positive responses for their academic behaviour than girls (in the classes of male teachers at least) appears, however, to be in conflict with Younger and Warrington's finding that boys experience less positive support for their learning than girls.

Following on from their earlier work, Younger, Warrington, and Williams (1999) explored classroom interactions in eight English secondary schools using focus group interviews. In four of the eight schools (including equal numbers of comprehensive and selective schools) the researchers also conducted direct observation of teacher-student interactions in Year 11 classes. In terms of teacher attitudes, girls were perceived as better organised and more independent learners. They had better communication skills than boys, being both more articulate and confident than their male peers. Boys, on the other hand, were perceived by teachers as being more disorganised and demotivated, as well as being more vocal, boisterous, distractible and immature (Younger et al., 1999). The demands made on teachers by boys was a constant theme, with teachers acknowledging that "the noise level of the boys, their off-task activities, their poor behaviour pattern and apparent limited attention span, inevitably attracted more attention" (Younger et al., 1999, p. 329). These demands were expressed in terms of classroom management issues rather than being related to the actual teaching and learning context. Certainly, Wheldall and Merrett (1988) and Houghton et al. (1988), in their studies in the UK into the prevalence and types of classroom behaviour primary and secondary teachers found most troublesome, reported that the vast majority of the students they nominated as troublesome were boys and that
“talking out of turn” was both the most troublesome and most frequent classroom behaviour with which they had to deal.

Given Younger et al.’s (1999) findings, it is not surprising that the observational aspect of their study confirmed that boys were involved in more classroom interactions than girls. Significantly, in all schools, boys were reprimanded more than girls with boys receiving 70% of the reprimands in the comprehensive schools. While the overall rate of reprimand in the selective schools was lower than in the comprehensive schools, boys received 90% of all reprimands given. Again, reminiscent of Swann and Graddol (1988), it was to boys that teachers directed questions (62% of questions were directed to boys) and it was the boys who responded to questions which teachers directed to the whole class. Younger et al. concluded that while these characteristics show “domination” by boys in the classroom, the reality is that boys receive more negative attention than girls. They also suggested that the tolerance level of teachers is lower to boys’ misbehaviour than to that of girls (p. 339) and that much of the teacher attention directed to boys is focused on management rather than teaching and learning. For example, Younger et al. suggested that the direction of more attention and more direct questioning to boys is an attempt by teachers to “retain male involvement and class control” (p. 339). Like earlier researchers (Brophy, 1985; Brophy & Good, 1974; Croll, 1985; French & French, 1984; Swann & Graddoll, 1988), Younger et al., suggested that the actions of a small number of recalcitrant boys, repeatedly being reprimanded for a range of misdemeanours, accounted for a sizeable proportion of the reprimands overall.

Girls on the other hand, initiated more interactions with the teacher, with 70% of the questions asked by students or requests for help coming from girls. Younger et al. (1999) stated that, “Regardless of the subject, girls interacted more inquisitively with the subject matter being taught, participated more in the enquiry process, and showed more interest and intellectual curiosity” (p. 338). While conceding that much of the
public questioning that goes on in schools is procedural rather than focused on academic concerns, where academic questions were asked, they were usually asked by girls (Younger et al., 1999). Younger et al. (1999) commented that perhaps the greatest challenge in raising boys’ achievement levels is “to support teachers, and to raise the awareness of trainee teachers, in devising ways of working more effectively with boys” (Younger et al., 1999, p. 339). It would appear that the classroom management challenge elucidated by Croll (1985) is an enduring factor in the dynamics of classroom interactions.

Myhill (2002), however, prompted by concern over the underachievement of boys, found that some patterns of classroom interaction and response are less to do with gender than achievement. In her British study, in which 36 classes in Years 1, 4, 5, 8, 9 and 10 were sampled (6 at each year level), Myhill investigated the interactions in whole class teaching sessions of high-achieving boys and girls and underachieving boys and girls using a structured observation schedule. In each observation session of 15 minutes’ duration the following positive classroom interaction behaviours were observed: *joins in collective response; puts hand up*, and; *answers after invitation*. Based on observations of 144 students in 106 teaching sessions from Years 1, 4, 5 and 8, Myhill found that the underachievers were the least likely to join in positive classroom interactions. [This is reminiscent of Brophy and Good’s finding (1970) that high achievers “create more response opportunities for themselves” (p. 370) than low achievers.] Myhill’s data did not include observations from Years 9 and 10 as there were so few instances of any of the prescribed interactions in the classes observed, an interesting finding in its own right.

Initially, the relatively limited participation of underachievers was more evident with Year 1 underachieving boys than underachieving girls, but by Year 4 the behaviour of the underachieving girls and boys could not be differentiated in terms of
the behaviours targeted in this study. Further, there was little difference in the interactions of high-achieving boys and girls in the junior years, but by Year 8 the interactions of high-achieving boys had dropped to almost the level of the underachievers (boys and girls alike). For instance, in Year 5, the target high-achieving boys engaged in an average of 4.19 instances of *puts hand up* behaviour per observed episode, but by Year 8 this had dropped to 0.36. Moreover, looking at each behaviour observed, high-achieving boys showed a steady decline across each behavioural dimension from Year 1. Only the high achieving girls generally maintained their willingness to engage in positive classroom interactions throughout the years studied.

Myhill (2002) argued that these data detailing positive classroom interactions do not support the belief that boys dominate classroom talk. Rejecting Swann and Graddol’s (1988) contention that girls have learnt to expect a lower participation level in classroom interactions, Myhill asserted that the findings from her study identify differential participation rates which are “only partially attributable to gender” (p. 347) and that the underachievers, both boys and girls alike, are the “reluctant participators” (p. 347) in the classroom (Myhill, 2002). The reduced positive participation of the high-achieving boy in secondary school described above does complicate this broad interpretation, but Myhill attributes this to the “emerging male culture around adolescence in which it is not ‘cool’ to be seen as hard-working or enthusiastic” (Myhill, 2002, p. 345).

Myhill (2002) included data for the less positive interactions from all years involved in the study, that is, from Years 1 to 10. Interestingly, while there were too few instances of positive classroom interactions in Years 9 and 10 for them to be included in that analysis, there were ample data for these years when it came to negative classroom interactions. Some gender differences were apparent in the types of less positive behaviour recorded during whole class teaching. The data relating to ‘calls
out' (both task-related and task unrelated) showed that this behaviour was characteristic of boys. [This confirms the findings at the primary level of Wheldall and Merrett (1988) and of Houghton et al. (1988) at the secondary level referred to earlier.]

While boys across all phases were much more likely to call out than girls, underachieving boys were more likely to call out than their high-achieving classmates. The more problematic calling out (unrelated to the task) was predominantly an underachiever activity, but particularly of boys. By Year 8, the high-achieving boys had reduced their calling out behaviour and the underachieving girls were calling out more, a trend whereby "...the pattern of calling out shifts from male dominance to underachievers' dominance" (Myhill, 2002, p. 346).

The less obtrusive, but nonetheless counter-productive, activity of talking to neighbours during whole class teaching still interfered with academic learning. Again this is an activity in which underachievers are much more likely to be engaged, boys and girls alike. Myhill (2002) suggested that teachers and researchers may have been preoccupied with the loud and obvious forms of inappropriate behaviour typically engaged in by boys that are not conducive to academic achievement. She cautioned that the quieter less obtrusive forms of low participation in classroom interactions lead to just as much underachievement.

Myhill (2002) concluded that while it appears that boys do dominate calling out, it is the high-achievers who dominate the positive classroom interactions while the underachievers are responsible for the more negative interactions. This would go some way to explaining the relatively poorer academic performance of boys than girls. As Myhill so cogently expressed it, "...if boys are dominating the patterns of interaction in the classroom, then their examination results would suggest that, academically at least, this brings them no advantage" (Myhill, 2002, p. 341).
9.6 The "Ideal Student" as Female

Notwithstanding the limitations of the cross-sectional nature of her study, another important finding from Myhill's (2002) work was the interaction pattern of high-achieving girls over school years or grades. Unlike apparent variations over time in the interaction patterns of high-achieving boys, the interaction patterns of high-achieving girls from Year 1 to Year 10 were characterised by a high degree of focus, willingness to engage with the teacher, and an ability to stay on-task. The fact that high-achieving girls were found to be "compliant, conformist and willing to please" (Myhill, 2002, p. 350) may be why, according to researchers like Younger et al. (1999), a growing number of teachers may be "increasingly defining the 'ideal student' as female" (p. 327). That this phenomenon had long been a characteristic of the school system was commented on by Brophy (1985), however. He pointed out that boys may see schooling as feminine (particularly at the elementary or primary school level), not only because most of their teachers happen to be female, "but because of a poor fit between the culturally prescribed male gender role and the student role" (Brophy, 1985, p. 118).

Being an ideal student in school may not necessarily deliver better outcomes in the post-school years, however. It may be that compliant girls are more of a benefit to their teachers than they are to themselves. Myhill (2002) argued that the very attributes of compliant girls in school may in fact precipitate further disadvantage. She claimed that the attributes that may advantage them in school may disadvantage them in the workplace. Scathingly, she wrote: "Few company executives, politicians, lawyers, and so on would be described as compliant and conformist, though their PAs may well be!" (Myhill, 2002, p. 350).

Yates (1997) argued that, while there have been some positive outcome changes for girls as a result of school reforms, women in Australia still enter a relatively narrow
The range of jobs and their representation in the senior levels in most areas of employment (particularly in business) is low. Moreover, average weekly incomes for Australian women relative to men, which had improved from the early 1970s to the mid-1980s, have stalled since the late 1980s at around 83% (Yates, 1997). Gorard (2002) also pointed out that the gender gap in qualification (favouring girls at GCSE), "such as it is, also declines and reverses among adults in later life" (p. 236).

Yates noted that the specific event that initiated a major Australian inquiry into boys and education in 1994 was the high level performance of a small number of girls succeeding in the very hardest mathematics courses in the final secondary school examinations in Australia. She argued that this outcome (which did represent a change) for a very small number of girls unduly influenced the more general debate about the educational outcomes of boys and girls in Australia. This phenomenon in Australia is similar to that described by Gorard (2002) in the UK where it was the differential performance of a small number of the top students that ignited the debate about the underachievement of boys (see earlier discussion).

The idea that the model student is increasingly seen as "female" may have important ramifications for classroom interactions, particularly for boys. Backe-Hansen and Ogden (1996) made some valuable observations from their cohort studies of Norwegian children aged 10 years (447 students) and 13 years (484 students). Investigating possible gender differences in the academic, behavioural and social competence of two cohorts of students in a single Norwegian municipality, Backe-Hansen and Ogden drew on the perspectives of parents, children, and their teachers. Findings relevant here include the phenomenon that by the fourth grade in the cohort study (10 year olds), there were marked sex differences in the assessment of social skills, irrespective of who was making the assessment. The girls were evaluated as being more socially competent by the children themselves, their parents and their
teachers. The sex differences were largest for cooperative skills and a little smaller for self-control and assertion skills. As Backe-Hansen and Ogden argued, these cooperative skills are “important for mastering the social aspects of the role of pupil” (p. 337). For the purposes of this study, cooperation was operationally defined to include behaviours such as “helping others, sharing materials and complying with rules and directions” (Backe-Hansen & Ogden, p. 336). While by the seventh grade (13 year olds) there were fewer differences between the sexes (as far as the children and their parents were concerned), for the teachers of these students marked sex differences still remained, mainly caused by the differences they perceived in cooperation skills, and favouring the girls (Backe-Hansen & Ogden, 1996).

In these Norwegian cohort studies, the girls were generally the “competence winners” (Backe-Hansen & Ogden, 1996, p. 331), while the boys exhibited more problematic behaviour both inside and outside the classroom. Backe-Hansen and Ogden claimed that from the teachers’ perspective, “traditional girl values” were attributed greater value than the “traditional ‘masculine’ ones” (1996, p. 347), a finding with significant consequences, particularly for the boys. They argued that by comparing children’s competence at the same grade or age level, a preference for girls’ attributes could easily be perceived. They pointed out that this might be the case particularly in the primary school years, where the proportion of female teachers is usually higher. Moreover they expressed concern that the average competence level of girls becomes the yardstick for boys as well; inadvertently girls contribute to setting a norm that boys cannot easily reach. Backe-Hansen and Ogden (1996) concluded that where:

The girls become normative for the expectations boys are met with

……there is a risk, that an adult perspective favouring traditional
‘female values’ will contribute to the construction of boys’ behaviour
as pathological, rather than expressions of what may be boys’
different ways of behaving and developing. (p. 347)

Some evidence that such a phenomenon may serve to marginalise boys in
schools is seen in a report prepared for the Australian government Department of
Education, Training, and Youth Affairs (DETYA) entitled, Declining rate of
achievement and retention: The perceptions of adolescent males (Trent & Slade, 2001).
Summarising the views of 1800 adolescent males in Years 9-11 from 60 secondary
schools in South Australia (including state, catholic and independent schools), the
report concluded that one of the major difficulties for boys in school was the
interactions they had with their teachers. In the executive summary of the report, the
third of 11 findings expressing the views of boys stated: “Most girls get treated better,
but so do boys who find it easy or necessary to comply and conform, and who quietly
get the work done” (Trent & Slade, p. ix). The message here is that for boys who do not
conform to the ideal “female” student model, and who are seen as deviating from the
norm, school becomes an increasingly aversive environment. Pathologising boys’
behaviour is a significant threat to productive classroom interactions between teachers
and their students and ultimately to equal educational opportunity.

The reality is that boys engage in more externalising behaviours than girls, the
very behaviours that are likely to be viewed unfavourably by teachers (for an extended
treatment of this topic see the review of the literature relating to troublesome classroom
behaviour in Chapter 2). Backe-Hansen and Ogden (1996), for example, noted that boys
are more restive and overactive, react more easily than girls with acting out behaviour,
and become both more visible and more bothersome to their environment. This may
well influence how teachers perceive and respond to their male students.

The powerful effect of student behaviour in producing differential teacher
responding to boys and girls was elucidated by Brophy (1985) in his exploration and
analysis of the effects of teacher gender on classroom interactions with boys and girls. Finding no interaction between the sex of the teacher and the sex of the student, Brophy argued that teachers do not respond to students’ sex per se, but do respond to their behaviour. The reality that boys and girls behave differently is at the core of teaching responses. In critiquing the primary (or elementary) school studies in the decade following the work summarised in Brophy and Good (1974), Brophy (1985) concluded that:

...male versus female differences in classroom experience are due almost entirely to gender-role related differences in the behaviour of the students themselves and not to any general tendency of either sex to treat boys and girls differently. (p.132)

An alternative approach to considering these issues is offered by the more sociologically inspired, critical theory approaches. Theorists such as Connell (1995), Skeggs (1997), Francis (2000), and Skelton (2001), favour discursive analyses of the notion of masculinity and femininity, or rather for some masculinities and femininities (e.g., Connell, 1995) within contemporary society. Some theorists view concerns with the education of boys as quintessentially a backlash to the advances of feminism seeking to reassert male hegemony (see Martino & Berrill, 2003). A thorough discussion of this theoretical approach is beyond the scope of the present chapter. Readers are referred to Francis (2000), for example, for a summary of this theoretical perspective and the development of the debate, including the relative underachievement of boys.

In brief, contemporary researchers and commentators detailing theories of masculinities and femininities from a gender relational perspective (e.g., Connell, 1995; Francis, 2000; Skeggs, 1997; Skelton, 2001; Skelton & Francis 2003) argue that much of the ‘What about the boys?’ debate continues to be informed by superseded notions of
sex role socialisation theories (Connell, 1995; Skelton, 2001; Skelton & Francis, 2003). In sex role theories, children are seen as "passive recipients who absorb society's messages about how to act in a gender appropriate way" (Skelton & Francis, 2003, p. 13), and gender is fixed and unchanging (Skelton & Francis, 2003). Moreover, and as Skelton and Francis (2003) have asserted, sex role theories see masculinity and femininity as being located solely within male and female bodies respectively, whereas gender relational theorists see gender as more "fluid" (Skelton & Francis, 2003, p. 14; see also Connell, 1995; Skeggs, 1997). Rather than seeing boys and girls in stereotypical ways (girls do "x", boys do "y"), which is characteristic of sex role theories, gender relational theorists argue that gender is essentially constructed in relation and opposition to the other (that is, masculinity is what femininity is not) and is influenced by context (Connell, 1995; Skelton & Francis, 2003). Skelton (2003), strongly influenced by Connell and Skeggs, argued that more recent thinking demands a consideration of "the multidimensionality of identity whereby masculinities and femininities are seen as being shaped by social class, sexuality, religion, age, ethnicity and so forth" (p. 196).

Connell (1995) argued that while schools have been "a rich site for studying the reproduction of masculinities, ... there is surprisingly little discussion of the role of education in the transformation of masculinity" (p. 238). He pointed out that most of the discussion of gender and education "overwhelmingly" (p. 238) concentrates on the education of girls and femininity (Connell, 1995). More recently, however, Francis (2000) has addressed this issue of the construction on masculinity in classrooms.

Francis (2000) argued that girls' construction of the female role has changed over the past two decades (since the 1980s) with a concomitant positive effect on their achievement. In terms of the boys, however, Francis asserted that their constructions of masculinity have largely remained the same. The "laddish" masculinity, which has been
much discussed in the UK context (see Francis 2000 for a background to this debate), has arguably led to some boys’ academic underachievement (Francis, 2000). The antics of some boys who (while not being particularly malicious or overly aggressive) are playfully disruptive in the classroom, are conceived of by some as boys constructing their masculinity in opposition to the more sensible and studious femininity. Francis (2000) wrote:

> Many girls and some teachers seemed to derive amusement from the behaviour of these boys and even find such boys particularly appealing or attractive. Further, the boys’ ‘silly’ constructions also aided girls’ constructions of sensible maturity, and vice versa, as these are built in relational opposition to one another. Thus the contrast between ‘silly’ boys and ‘sensible’ girls aids the establishment of gender difference. (p.118-119)

If the situation Francis (2000) described is so, it could be that boys are, at the same time, being reinforced for inappropriate classroom behaviour and being pathologised for it. While the ideal student may be female, the class entertainer (and favourite) may be male. Francis also explored the construction of gender polarity by students who position “attitude” (2000, p.139) (denoted by questioning, challenging and “having a laugh”) as masculine in opposition to “academic application” (2000, p.139) (characterised by diligence and pleasure in learning) which is constructed as feminine (Francis, 2000). But as Francis cogently argued:

> ...there is no reason why “attitude” and academic application should be seen as incompatible.....We should endeavour to encourage both “attitude” and application in all our pupils, irrespective of their gender, and this may be the key to improving achievement. Yet, in order to do so we will need to deconstruct the oppositional
construction that locates attitude in the male, and application in the female, in the classroom. (2000, p. 139)

A way of breaking destructive cycles of gender stereotyping, and overcoming the oppositional construction of gender that may be damaging to student participation, is available to teachers. By employing classroom strategies whereby positive teacher-student relationships are developed, in the place of the more reactive (and possibly reinforcing) teacher responses to trivial but high frequency behaviours of overtly disruptive students (often boys), teachers can play a role in ensuring that all students (both boys and girls) receive the respect and educational opportunities they deserve as individuals.

9.7 Referral to Special Education Services as Another Form of Teacher Attention

That boys make their presence felt in classrooms is incontrovertible. Apart from the effect this has on the nature and extent of classroom interactions with their teachers (and peers), other (less obvious) side effects of this classroom reality should be explored. For instance, boys appear to be over-represented in terms of special education provision. Backe-Hansen and Ogden (1996) found, for example, that of the 140 students in their referred sample in Norway (a subset of the cohort studies described above), 70% (110/140) were boys. Also in Norway, Skårbrevik (2002) reported government statistics from 1996 indicating that about 70% of the students found to be eligible for special education in elementary and junior high school were boys. In his study of 1,159 students from kindergarten to upper secondary school, Skårbrevik found that in kindergarten and upper secondary schools, 65% of the students deemed eligible for special education support (over 14 categories) were boys. In the elementary and junior high school levels this percentage increased slightly to 70%. Interestingly, Skårbrevik argued that at the elementary and junior high levels, the predominance of boys found eligible for special education provision may be ascribed to two main
factors: a higher number of boys showing disruptive behaviour and, therefore, being reported more often to be in need of special education; and, a higher number of boys who experience problems with reading and writing.

A recent survey of special educational needs (SEN) provision in Organisation for Economic Cooperation and Development (OECD) countries reported in 2000 found that boys were "consistently over-represented ....in both special schools and in special classes in mainstream schools" (Benjamin, 2003, p. 98). Benjamin observed that the OECD findings relating to gender and SEN were fairly consistent across countries with girls accounting for between 30% and 40% of all students in special schools, with similar gender ratios applying in special classes in mainstream schools (2003).

In the United States, the Department of Education reported that 72% of the learning disabilities (LD) population is male (Lerner, 1993). Similarly, in the state of Iowa, the LD population has been reported to be approximately 70% male and 30% female (Kavale & Reese, 1992). Vogel (1990) has indicated that estimates range as high as 15:1 boys to girls in LD programs, while, in a study of Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD), Berry, Shaywitz, and Shaywitz (1985) stated that the ratio of boys to girls diagnosed with ADD ranged from 4:1 to 6:1.

Anderson (1997) also provided strong evidence of the over-representation of boys in LD programs. Focusing on the large discrepancy between the numbers of boys and girls in LD programs, she argued that one of the primary reasons for the disproportionate numbers of boys is "the effects of classroom behaviour on the implementation of referrals" (Anderson, 1997, p. 152), a similar proposition to that put by Skårbrevik (2002). She suggested that significant gender bias among referring agents (who are typically regular classroom teachers) is a major factor in the unequal
distribution of males and females in LD programs. Could it be that referral to special education services is another form of teacher attention typically directed at boys?

Anderson (1997) asserted that, in reality, the incidence of learning disability is much more proportional to the population in schools than referral figures would suggest. There is generally broad agreement that, as males and females typically display different behaviour in the classroom, with boys engaging in the more disruptive or hyperactive behaviours, there is a tendency for teachers to refer the more easily identified students for additional support (see e.g., Anderson, 1997; Berry et al., 1985; Mirkin, Marsten, & Deno, 1982). Ysseldyke et al. (1983) were rather more brutal, concluding that teachers tended to refer students who bothered them in the classroom. The definition of bothersome behaviour varied from teacher to teacher (Ysseldyke et al., 1983). Mirkin et al. argued that the teacher referral process for academic problems “is subject to the biasing influence of the student’s behaviour” (p. 19). They found that teachers were more likely to refer for LD evaluation and services students with attentional deficits and hyperactivity or disruptive behaviour, rather than those demonstrating academic underachievement.

Mirkin et al. (1982) compared teacher referrals to special education services with a systematic referral system based on weekly academic outcomes. They found that 80% of teacher referrals were male, whereas referrals from the measurement system were only 65% male. Moreover, only 36% of the teacher-referred students met the district criteria for LD services as compared to 80% of the students who met the criteria in the continuous measurement system (Mirkin et al., 1982).

Further evidence for the effect of student behaviour on referral and diagnosis is available in the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-IV) (American Psychiatric Association, 1994), where it is suggested that referral procedures for Reading Disorder are often biased towards identifying males.
because of the influence of the disruptive behaviours of boys. While males account for between 60% and 80% of individuals diagnosed with Reading Disorder (American Psychiatric Association, 1994), it is claimed that more equal rates of Reading Disorder are found in males and females when careful diagnostic ascertainment procedures are employed, rather than the more “traditional school-based referral and diagnostic procedures” (American Psychiatric Association, 1994, p. 49). Given these patterns of referral, identification, diagnosis and service provision, there are serious implications for students and for educational systems. First, from a systems perspective there are usually limited (certainly not infinite) resources available for providing the additional support required by students with special learning needs. It is important that the students who are most needy receive the support that is available. Concerns about girls with learning disabilities not being identified and provided with appropriate instructional supports is highly relevant in this context. Berry et al. (1985) concluded that girls with ADD may represent an under-identified and under-served group of students at significant risk for long-term, academic, social and emotional difficulties. Referral to special education provision could, therefore, be regarded as another form of differential teacher attention to boys and girls.

Similarly, Vogel (1990) pointed out that there is a growing body of research that suggests that females experiencing learning disabilities are not identified as frequently as males. She argued that there is evidence of a differential attitude by teachers who “favour referring males when females have identical problems” (Vogel, 1990, p. 50). Her analysis of gender differences in intelligence, language, visual-motor abilities, and academic achievement in students with learning disabilities showed that when girls are identified, referred, and diagnosed as having learning disabilities, and, as a consequence, found eligible for LD services, they are “a) significantly lower in intelligence, b) are more severely impaired and, c) have a greater aptitude-achievement
discrepancy than their male counterparts” (Vogel, 1990, p. 47). The more recent findings from Skårbrevik (2002) support this contention that identified girls have more significant levels of impairment. It would appear that boys may be over-participating in special education services as a result of their obvious and disruptive presence in the classroom, while girls who are genuinely in need of support are being overlooked and under-identified.

Notwithstanding his view that the dominance of boys of special education provision is due to a “mismatch between male behaviour and school norms” (Skårbrevik 2002, p. 105), Skårbrevik also found evidence (from the kindergarten sample in his study) of some basic genetic or biological differences between the sexes which he argues contributes to the larger number of male students found to be in need of special education services (2002). He concluded:

The preponderance of boys in special education during the school years might be therefore seen as a result of an interaction between genetically or biologically determined factors and a pedagogy that does not match with the educational needs of male students.

(Skårbrevik, 2002, p. 105)

But Benjamin (2003), a critical theorist, rejects this explanation (in the context of the UK at least) and has proposed that girls’ under-participation in special education provision can be understood in gendered terms drawing on the models of masculinities and femininities, an example being that girls with special educational needs may be more adept at seeking out help for themselves in less obvious ways. Competing discourses or interpretations aside, what remains clear is the reality that many more boys than girls are identified and provided for in terms of formal special education provision.
9.8 Differential Attention by Gender: Current Contributions from Research and Future Directions

The research literature regarding differential teacher attention to boys and girls has, over time, had a variety of emphases, such as the pattern and distribution of classroom talk, the question of who initiates talk and other interactions in the classroom, and teachers’ response to students through non-verbal means such as eye-gaze. More importantly, the type of teacher attention has been identified as more significant than the amount of teacher attention, providing the opportunity for more sophisticated analysis and interpretation than earlier studies afforded. The notion that classroom interaction patterns can be divided along purely gender lines has been found to be simplistic and driven by rhetoric rather than by evidence. Moreover, the influence on classroom interaction of a few boys in the class with externalising behaviours, not boys per se, has been demonstrated, as well as the confounding issue of teacher attention to students with special educational needs, many of whom are boys. Anomalies regarding the over-representation of boys in receipt of special education services, raise serious issues of equity of opportunity for boys and girls, and some of these anomalies relate to classroom behaviour.

Aspects of differential teacher attention would appear, in part at least, to be a matter of classroom behaviour management, whereby teachers inadvertently direct negative attention to some students whose behaviours may well be managed more successfully in other more pro-active ways. The issue of negative teacher attention, in the underachievement of boys debate, is not one to be dismissed readily. The impact of disproportionate negative responses to boys may adversely affect the classroom environment, not only for the boys attracting negative attention, but for all students.

While the debate regarding differential teacher attention has proceeded, often on an ideological basis, what has actually been occurring in classrooms has, arguably,
remained relatively unchanged. In their repeat study of the 1976 ORACLE project twenty years on in 1996, Galton et al. (1999) noted that while much of the debate about gender and equity has “turned around, so that one of the greatest areas of current concern is the under-achievement of boys” (p. 97), there appears to have been little change in the distribution of classroom interactions in the 20 years between the two studies. Galton et al. found that, as was the case in 1976, boys were involved in slightly more interactions than girls, but the differences were only “marginal” (p. 97).

The significance and consequences of differential teacher attention appear to be equivocal depending on the ideological perspective of the investigator, or the research methodology employed, or a convergence of the two. By determining the type of responses boys and girls receive, and in what proportions, we can more accurately determine whether more teacher attention constitutes a benefit or a detriment. As Kelly (1988) has observed, “If boys get more criticism from the teacher than girls, but an equal amount of instruction, this is not necessarily to their advantage!” (p. 1).

As already noted, Merrett and Wheldall (1992) explored the differential responses of a sizeable number of primary (n = 32) and secondary teachers (n = 38) to the boys and girls in their classes (detailed earlier) in the UK. The observational schedule they used made it possible to categorise teacher positive and negative responses to student academic and social behaviour, as well as giving a measure of student on-task behaviour. Their approach provided a more fine-grained analysis of behavioural interactions between teachers and students in the classroom than some of the more global measures of teacher attention, which dealt more with amount or duration of teacher attention. There is clearly a need for further such fine-grained studies on this topic.

Kelly (1988) noted in her review of more than 80 studies, that it was curious that given much of the work (in the 1980s) stemmed from a feminist concern with girls’
underachievement, which typically begins to become apparent in adolescence, it was odd that so few studies had dealt with teenagers. Rather, the research focus had been on primary school children (Kelly, 1988). Her call for more work in the upper secondary years was accompanied by the observation that there was a need for more detailed analyses of possible variations in gender differentiated attention across different subject areas (Kelly, 1988). Howe (1997) also noted that while the studies involving primary aged students typically covered the full range of activities students were likely to participate in, at the secondary level the studies had largely been focused on mathematics and science. There is, therefore, also a clear need for more research studies in this area to be carried out with high school classes over a broad range of discipline areas.

In an attempt to pull together the threads from, at times, competing discourses, there is a clear need to establish the desiderata essential for significant progress in this area. Given the confusing and often contradictory interpretations of the same evidence base, however, this exercise must be approached with appropriate caution. What follows, then, is a series of “if” statements and the conclusions that might be drawn should it be effectively demonstrated that such interpretations are warranted. Finally, one possible model for testing such hypotheses is proposed:

i. If the educational achievement of boys is not keeping pace with that of girls in recent years, then there is a cause for real concern and for appropriate action.

ii. If it can be demonstrated that there are real differences in the ways in which boys and girls respond to contemporary educational teaching contexts, then this warrants further analysis with a view to re-engineering such teaching contexts so as to make them equally effective learning environments for both boys and girls.
iii. If it may reliably be replicated that it is a minority of male students who are identified as behaviourally troublesome, then the re-engineered teaching contexts referred to above must also be functionally inclusive of the special needs of such individuals.

iv. If, as seems likely from the evidence reviewed above, boys (or at least some boys) are the recipients of disproportionate amounts of teacher reprimand for inappropriate classroom behaviour, then teacher feedback might be identified as a locus for particular attention within the re-engineered teaching context described above.

v. If more inclusive, more positively orientated teacher interactional styles have been demonstrated to yield higher levels of class engagement, in turn leading to greater gains in academic achievement for both boys and girls, then such interactional styles might reasonably be considered as helping to shape the re-engineered teaching context.

Recent preliminary findings reported by Wheldall and Limbrick (2005) within an inclusive teaching context for primary aged students with learning, behavioural and/or intellectual disabilities, may serve as a possible model for relevant interventional research addressing this issue in mainstream classrooms. Wheldall and Limbrick reported the results of an action research study completed over several years, commissioned by an Australian federal government initiative targeting boys' education. Their report presents findings on both teacher interactional style and educational achievement levels. In brief, they found that in this specific teaching context, students (both boys and girls) received extraordinarily high rates of positive, affirmatory feedback from their teachers, in response to appropriate classroom behaviour and task engagement: "teachers use praise overall at a rate three times that of regular primary teachers... on average, both boys and girls are praised for their classroom behaviour
over 200 times every week” (pp. 11-12). Moreover, Wheldall and Limbrick also documented the gains made by the 82 students (59 boys and 23 girls) for whom results were available. Following one school year of instruction, these students made gains averaging around 15 months in reading and 17 months in spelling, the boys making slightly higher gains.

Clearly, the results from one demonstration study within a special needs teaching context cannot be generalised to mainstream settings without considerable, replicatory evidence collected in such settings. It may prove to be the case, however, that re-engineering the teaching context with particular emphasis on teacher interactional style, may yield more effective learning environments for girls and boys. Two of the observations of the recent Australian government report based on the parliamentary inquiry into boys’ education, Boys: Getting it right (House of Representatives Standing Committee on Education and Training, 2002), found that boys respond more to their relationships with teachers (whereas girls respond more to curriculum content), and boys respond better to teachers who are attuned to boys’ sense of justice and fairness and who are consistent in the application of rules. A commitment to a more affirming and consistent classroom environment for all students will arguably lift the engagement of boys (and girls).

9.9 Conclusion

In the debate about who gets the teacher’s attention and for what, it is tempting to apply the French maxim, ‘plus ça change, plus c’est la même chose’ – the more things change, the more they stay the same! As Brophy (1985) has highlighted, prior to the 1970s concern for educational outcomes of boys was a significant issue. Then, with the advent of feminism, the focus changed to the disadvantage experienced by girls as a result of the “domination” of the classroom environment by males. By the 1990s, the underachievement of boys in schools became an issue again, although this development
has not been embraced by all as being a valid concern [sometimes for different reasons, see, e.g., Gorard (2002) and Yates (1997)]. One enduring theme, however, has been that the nature of boys’ behaviour has a significant impact on the interactions that occur in classrooms.

In the following chapter (Chapter 10), the methodology employed by Merrett and Wheldall (1992) in the UK (to explore whether teachers responded differently to the boys and girls in their classes), has been utilised to provide data on differential teacher responding in secondary schools in the Australian context. Chapter 8 of this thesis detailed the naturally occurring rates of teacher approval and disapproval in New South Wales secondary classrooms. In the study that follows, an analysis of a sub-set of the larger data set, on which information relating to student gender is available, is presented. This analysis provides further evidence concerning classroom interactions in relation to the type of attention teachers differentially distribute to their male and female students. As previously discussed, Hammersley (1990) drew attention to the importance of considering the type of attention students receive (rather than the amount), when determining whether boys or girls are receiving preferential treatment from teachers, or whether gender biases exist in the classroom. This secondary school study includes upper secondary students and a broad range of discipline areas. These data will add to the body of empirical work that seeks to clarify the situation regarding differential teacher attention to boys and girls in the secondary school, particularly in the areas highlighted by Kelly and Howe in terms of both more, and more diverse, data at the secondary school level.