Differential teacher attention to boys and girls in the classroom

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Abstract

For over 30 years, there has been a continuing concern with differential teacher attention to boys and girls in the classroom. In this article, we review themes and issues in gender and classroom interaction. 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 the light of differential teacher attention to boys and girls.

Differential teacher attention to boys and girls in the classroom

Introduction

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 issue 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 physical space with the same teacher, clearly does not necessarily equate to a shared or common teaching and learning experience. In this article, we review themes and issues in gender and classroom interaction over the last three decades. The influence of feminism on the way classroom interactions between teachers and their students have been interpreted will be explored, as will the way in which disruptive behaviour, mainly exhibited by boys, has impacted on the classroom environment (including referrals to special education services). The more recent public concern with the relative underachievement of boys in school will also be considered in the light of differential teacher attention to boys and girls.

The 1970s and 1980s—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 (1985), 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 with 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, 1985, 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, 1985, 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 level 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 monopolized 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, 1982b). 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 et al., 1999). 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., 1999, 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., 1999, p. 96).

Galton et al. (1999) went on to say that this although little was made of it at the time, it 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., 1999, 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., 1999) 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., 1999, 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%) for boys to get more attention than girls. That Galton et al. (1999) 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 recognizing 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 account for 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 favours 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 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. 63–64).

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 limits their generalization 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 confirm 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 and 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 in seen, for example in Merrett and Wheldall, 1992). Hammersley argued that it is the type of teacher attention, rather than amount, which 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 and Graddol's study), Hammersley (1990) still elucidated a number of flaws with the research. He claimed that Swann and Graddol (1988) made too great a claim for

the importance of public classroom talk and emphasized 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 generalize 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 (1982a, 1982b) and Stanworth (1981) contributed in the early 1980s into 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, 1985, p. 115)

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 a 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 generalizations 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’ (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 organizational, 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 (1988) study 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 (1988) pointed out that only six boys of 42 accounted for 49% of the total of such interactions for all boys in the sample. Moreover, only four 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.]

But Dart and Clarke (1988) asserted 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 in 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 getting 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 (nine 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' (Croll, 1985, 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 monopolized 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 (1985) study 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 US, 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 recognized), 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 earlier), that differential attention to boys is a matter of inadequate classroom management skills on the part of the teacher.

The 1990s—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. Yates, 1997; Warrington & Younger, 2000; Gorard, 2002). In the debate about the 'underachievement' of boys it is important to recognize that the discussion of the differential achievement of boys

and girls hides the fact that performance levels by both boys and girls have 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 (Younger & Warrington, 1996; Younger et al., 1999; Yates, 1997). 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 (1996) 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 (1996) found that the level, quality and tone of teacher–

student interactions were a major concern to low-achieving students, who indicated that negative dynamics in the classroom had an impact on both boys and girls in terms of GCSE performance.

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 also are similar to the ORACLE 1976 findings (Galton et al., 1996), as well as approximating to Croll's (1985) findings in that he found the difference in attention directed to girls and boys to be 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 (1992) 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 (1992), 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 (1996) finding that boys experience less positive support for their learning than girls.

Following on from their earlier work, Younger et al. (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 organized and more independent learners. They had better communication skills than boys, being both more articulate and confident than their male peers. Boys, however, were perceived by teachers as being more disorganized 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) study 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 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 (1999, 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’ (1999, p. 339). Like earlier researchers (Brophy, 1985; Brophy & Good, 1974; Croll, 1985; French & French, 1984; Swann & Graddoll, 1988), Younger et al. (1999), 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 however, 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 (six 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 (1970) finding 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' (2002, p. 347) and that the underachievers, both boys and girls alike, are the 'reluctant participators' (p. 347) in the classroom. The reduced positive participation of the high-achieving boy in secondary school described earlier 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' (2002, p. 341).

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 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 characterized 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 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 (1997) 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’ (1996, 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, 1996, 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 marginalize 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). Summarizing 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 finding 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, 2001, 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. Pathologizing 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 externalizing behaviours than girls, the very behaviours that are likely to be viewed unfavourably by teachers (Houghton et al., 1988; Wheldall & Merrett, 1988). 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 eludicated 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 (1985) 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 summarized 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 rightist 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 paper. Readers are referred to Francis (2000), for example, for an excellent 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 socialization 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) assert, 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 and Francis (2003), strongly influenced by Connell and Skeggs, argue 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) argues 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 goes on to point 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) argues 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 asserts 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 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) writes:

> 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) describes is so, it could be that boys are, at the same time, being reinforced for inappropriate classroom behaviour and being pathologized for it. While the ideal

student may be female, the class entertainer (and favourite) may be male. Francis also explores 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) (characterized by diligence and pleasure in learning) which is constructed as feminine (Francis, 2000). But as Francis cogently argues:

> … 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)

One 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 all that students (both boys and girls) receive the respect and educational opportunities they deserve as individuals.

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 earlier), 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 1159 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, Skarbrevik argues 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 provision in Organization 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 (2003) observed that the OECD findings relating to gender and special educational needs 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.

In the US, the Department of Education reported that 72% of the learning disabilities population is male (Lerner, 1993). Similarly, in the state of Iowa, the learning disabilities 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 learning disability programmes, while, in a study of Attention Deficit Disorder (ADD) and Attention Deficit Hyperactivity Disorder (ADHD), Berry et al. (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 learning disabilities programmes. Focusing on the large discrepancy between the numbers of boys and girls in learning disabilities programmes, 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 learning disabilities programmes. 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 et al., 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. (1982) 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 learning disabilities 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 learning disability 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 DSM-IV (APA, 1995) 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 (APA, 1995), 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’ (APA, 1995, 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 learning disability 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 (2002) 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. He concludes:

> 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 than 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.

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 fallacy 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 externalizing 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, do 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 20 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. (1999) 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 rather 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 categorize 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 more 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, thus, 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 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, however; see for example, 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.

Conclusion

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 earlier must also be functionally inclusive of the special needs of such individuals.

iv. If, as seems likely from the evidence reviewed earlier, 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 earlier.

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 (2003) 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 (2003) report 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’ (Wheldall & Limbrick, 2003, pp. 11–12). Moreover, Wheldall and Limbrick (2003) also document 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 generalized to mainstream settings without considerable, replicatory evidence collected in such settings. It may prove to be the case, however, that re-engineeering 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).

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