

**Bricheno, P. and Thornton, M.E. (2002) 'Staff gender Balance in Primary Schools'.
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In the media the lack of male teachers and male role models in schools has been cited as a cause of particular concern (Maynard, 2002). Headlines such as 'Failing boys "public burden number one"' (Dean, 1998), 'Gender gap widens to a gulf' (Cassidy, 1999) and 'How to improve boys' stories' (Rundell, 2001) accompany the news that girls' exam results have not only caught up with those of boys but in some instances are surpassing them. The government has called for more men in teaching, especially in the early years, as role models for boys (DfEE, 2000). Latest figures show that just over 13 per cent of primary teachers are men (DFES, 2001), but applications from men for postgraduate teacher training in England are up 356 on last year. The Teacher Training Agency's target is for men to make up 15 per cent of primary trainees in 2002-03. However, there is a remarkable lack of clarity in the literature about what impact men, as teachers and as role models, may have on the perceptions and educational experiences of male and female pupils and their school-based achievements.

It may seem obvious that the male/female teacher balance within a primary school may have important implications for the effect the school has on its pupils' educational outcomes. However, given the weight and extent of educational and school-based research into boy/girl achievement, government policy to raise standards, and TTA strategies to recruit more men (1996), it is remarkable how rarely teacher sex has been addressed as a variable in school-based educational research and school improvement initiatives.

To address the issue the research explored the relation between the proportions of male and female teachers in primary schools and pupil achievement at the end of Key Stage 2.

Method

The lists of primary schools published by fifty randomly selected local education authorities (LEAs) were used to select a random group of 1,000 primary schools. Of these schools, nineteen were found to be no longer in existence, leaving 981 schools in the sample. Data were obtained for 846 of these schools (86 per cent of the sample) for the year 2000-01, regarding the numbers of males and females teaching in the school, and the sex of the head teacher. Data within the public domain concerning school roll, KS2 test results and the percentage of children with Special Educational Needs were also collected. Other data included in the analyses were: type of school (e.g. primary or junior), geographical area, and type of locality (e.g. rural or urban).

The sample was designed to include mainly primary and junior schools, since very few male teachers work in infant schools (Thornton, 1996). However, some LEAs had three-tier systems, including first or lower schools and middle schools, and so some of the first and lower schools were selected.

These data were analysed to examine correlations and interactions, using SPSS version 9, and two simple questions were initially asked:

1. What is the relationship, if any, between gender balance and KS2 examination results?

2. Does the gender balance of teaching staff within a school bear any relation to the size, type or achievement of the school?

Question 1 addresses the frequently asserted need for more male teachers in order to improve boys' achievement (see, for example, Diane Abbot, quoted by Merrick, 2002). If the assertion is correct one might reasonably expect to detect a generally lower standard of achievement in schools with few male teachers than in those with a high proportion and/or with a male head teacher. Question 2 seeks to identify any relations that might exist between school structure and gendered staffing patterns that might be worthy of further exploration.

Findings

Within this sample, of mainly primary and junior schools, 30 per cent of the schools had no male teachers at all, and less than 42 per cent had a male head teacher (Table 1). It is interesting to note that among male-headed schools only 10 per cent of them had no male teachers, while in female-headed schools 20 per cent had no male teachers. This is an initial if tentative indication that where there is a male Head there are likely to be male teachers.

Simple correlation coefficients indicate a statistically significant relation between the size of the school and the gender balance, and in addition between the size of the school and the performance indicators (Table 2). However, there appears to be no relation at all between gender balance and KS2 test results. The data suggest that although male teachers may be attracted to teach in larger schools, the achievement of pupils is unaffected by the proportion of male teachers. These results also indicate that in larger schools pupil achievement may be lower, but it must be remembered that simple correlation coefficients do not take account of other factors, such as the type and size of school, or the percentage of children with Special Educational Needs within a school. Partial correlation coefficients were calculated to control for these factors, but still no relation could be observed between the proportion of male teachers and the KS2 test results.

To take account of all possible interactions between the data, ANOVA (with continuous variables of roll, SEN and gender balance, and with factors for geographical area and type of area (rural or town), gender of head teacher and type of school) calculations were performed.

As in the simpler analyses, the gender balance of the school was significantly related to the size of the school, with larger schools more likely to have male teachers. But, in addition, gender balance also seemed to be related to the type of school and to the gender of the head teacher.

Male teachers were most likely to be found in junior schools and least likely to be found in first or lower schools (Figure 1), as indicated by earlier research (for example, Thornton, 1996) and, to some extent, by statistics of education (see, for example, Ministry of Education, 1959; DFES, 2001).

In this sample, male teachers comprised a larger proportion of the teaching staff if the head teacher was male (Figure 2). This is most dramatically illustrated when men (rarely) head-up first/infant/lower schools. In such instances 25 per cent of teaching staff were found to be male, compared with around just 5 per cent in similar female-headed schools.

The ANOVA analyses again found no relation between the gender balance of teaching staff and the overall KS2 test results. However, the relations between the number of pupils achieving level 4 or above in the maths tests and the gender of the Head and school type were statistically significant (Figure 3), with almost 74 per cent of pupils achieving level 4 in maths in male-headed primary schools and nearly 70 per cent doing so in female-headed junior/middle schools.

These statistically significant relations between the number of pupils achieving level 4 or above in the maths tests and the gender of the Head and the school type may be worth further investigation. It is possible that the results indicate some underlying relationship not yet explored. However, the differences found are quite small, and in view of the level of reliability suggested for KS2 test scores (Wiliam, 2001) may be of no real importance. Furthermore, the only significant relationship, found for all curriculum areas, was not related to teacher gender at all. Rather it was between KS2 results and the percentage of children having Special Educational Needs, suggesting that the children's background may be more important than the sex of their teacher in its effect on their examination performance.

Discussion

In terms of our initial questions we are able to give the following answers:

1. There is no discernible direct relation between staff gender balance and results at Key Stage 2.
2. Staff gender balance does appear to be related to school size and school type, with more men to be found in larger schools, junior schools and those headed by males.

However, these findings raise questions about government assertions that more male teachers are needed to boost the academic performance of boys, and also raise issues that require further research.

Would a different conclusion be reached if a similar analysis were undertaken using the Key Stage test results for boys and for girls, rather than for the total pupil population? Are the KS2 test results alone sufficiently reliable to allow such a judgement to be made on the basis of them? The factors examined so far using ANOVA have been limited: would data on additional factors alter the findings?

Ofsted reports, although restricted in their scope (Richards, 2001), are now being investigated for the schools in the sample. The reports provide data not available elsewhere in the public domain: the number of children taking free school meals and the KS1 results, and also the inspectors' findings concerning pupil attitudes, school ethos, head teacher leadership and management, and teaching quality in the school. As Ofsted claims to draw meaningful comparisons between schools, such information may allow further insights into the effects of the gender balance on the sample schools' performance (at Key Stage 1 as well as at Key Stage 2), leadership and ethos. Ofsted reports are being used to collect further quantitative data, such as free school meal numbers, pupil mobility and the number of pupils with English as an additional language. Such data will then be included in the ANOVA analysis.

However, it is recognised that comparisons of Ofsted data from the sample schools may not bring to light the possibly subtle differences between schools that may be related to the staff

gender balance. Ofsted provides information about teaching quality, leadership and management as well as pupil attitudes and behaviour, but the comparative value of the information has been criticised (see, for example, Harvey Goldstein, reported by Pyke, 1998).

Questions about the value of male teachers as role models and their effects on the attitudes, behaviour and motivation of boys (and girls) may best be answered by collecting richer data from case studies in a small number of carefully chosen schools. The initial quantitative analysis would be of assistance in the selection of such schools.

It is hoped to take this exploration forward through in-depth case studies with a small group of schools. The studies will explore, through comparative analysis, the differential impact, if any, that gender balance may have on the educational experiences, interests, behaviour and achievement of children in primary schools, and will examine the effects, if any, of teacher gender in differently staffed primary schools in terms of school ethos, culture, priorities, teaching styles and educational outcomes.

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