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# The identification of factors contributing to the relative underachievement of boys in design and technology

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## Abstract

*Since the 1990s, it has become apparent that girls are outperforming boys in the 16+ examinations in England and Wales. This paper focuses on the different levels of achievement in design and technology. It commences by considering the dimensions of the gender gap at national level, before looking at one school in detail. The methodology of this investigation is described before analysing the gap. Quantitative and qualitative methods have been used, including focus group interviews with students and semi-structured interviews with staff to identify those factors that contribute to the relative underachievement of boys.*

## Keywords

*standards, gender, achievement, education, design, ICT, underachievement, boys, attitudes, technology*

## Introduction

Over the last 15 years, the issue of educational achievement has been dominated by the focus on Key Stage 3 and GCSE league tables which successive Conservative and now Labour administrations have published. This has been accompanied by attacks on 'trendy' pedagogical methods in the media.

The way in which this issue has been handled is exemplified by the questions raised by 'male underachievement'. Statistical evidence indicates that the trend in achievement at the 5 A\*-C watershed and in individual subjects is upwards, however, the improvement by girls outstrips the improvement shown by boys. Nevertheless, media reaction and sound bites of ministers present the issue as the need to 'rescue Britain's lost boys' (Abrams, 1998) and to address the 'crisis of male under-achievement' (Bright, 1998).

It is worth noting that the construction of the debate is in terms of 'male underachievement', never in terms of the improvement in female performance whether at GCSE or in the evidence that outside of Oxbridge, the performance of men and women is close to equalising in English universities (McCrum, 1994). Instead of a cause for celebration, these improvements in girls' achievements appear to be a source of anxiety, and the discovery of the gender gap in performance has been used to redirect the debate:

'It appears as if female success is viewed as a corollary to male failure. Rather than celebrating girls' achievements and aspirations, we have now a discourse of male disadvantage in which boys are viewed as falling behind in academic performance.'  
(Weiner *et al*, 1997: 620)

Of course, this must not negate concerns regarding the relative underachievement of boys, but is important in framing the question correctly.

## Research framework

My interest in this area stems from my role as Head of Design and Technology in the case study school and my subsequent secondment to Sheffield LEA as Teacher Adviser for design and technology. This paper was produced as part of an MA in design and technology at Sheffield Hallam University. It became apparent that since the introduction of the material specific GCSEs in 1998 that there was a marked

difference in the performance of boys and girls at a national, local and individual school level. There is already a wealth of background information that gives some useful pointers when considering some of the factors that may be at work.

Hargreaves (1967) and Lacey (1970) explored the role of schools as social institutions and considered the impact of labelling on students. Others have considered the nature of the examination itself, Gipps and Murphy (1994), Kimbell et al (1991) and Ive (2000). Where these studies have looked at design and technology, girls have been found to outperform boys in evaluative activities; whereas boys have been found to be more adventurous in the generation of design proposals. It has been suggested that the written examination or else the coursework element may contain a gender bias. In particular, Ive (2000) attacks the padding of design portfolios with 'neat nonsense' to boost designing grades.

Clark and Trafford (1995) and Powell and Batters (1985) looked at the performance of boys in modern foreign languages. It was recorded that setting lead to some predominantly low ability male groups, which caused disengagement of boys to be reinforced by peers resulting in a lowering of aspirations. This issue is also well documented by Willis (1977), who examines how subculture groups that seek to undermine schools can provide a mechanism by which students replicate existing divisions, therefore maintaining the status quo. There is some suspicion that even where setting does not exist (as in the case study school), that low ability boys may be choosing to opt for particular option choices so creating self-selecting setting.

There is also evidence to suggest that school ethos, policies, assessment and feedback systems may have the opposite effect to that intended for some groups of students. (Warrington and Younger, 1996)

In this study I shall look at the nature of the gender gap in design and technology, consider the abilities and attitudes of students opting for different GCSEs, look at the impact of ICT and identify areas for further research.

The study commences by looking at the national picture for design and technology, comparing results for boys and girls over the last three years to understand the nature of the gender gap. It then moves to an examination of one school.

The case study school was investigated by the following methods:

- a) statistics for the years 1998, 1999 and 2000 were analysed

- b) Year 11 students in resistant materials, graphic products and electronic products were asked to complete a questionnaire, this examined course content, influences on option choice and perceived strengths and weaknesses.

Through the initial questionnaire, students were asked to consider the importance of a variety of influences that determined their choice of design and technology option. This was done by numerically coding responses to the Likart Test. The aim was to consider whether there was a difference between boys and girls who opt for resistant materials, or between boys opting for resistant materials and those students choosing electronic products.

The outcomes from these methods have been grouped under the emerging headings.

- c) Lessons were observed and semi-structured interviews were conducted with staff. These were recorded using a repertory grid (Norris, 1982) and note taking.
- d) Finally, I interviewed three groups of students. I deliberately chose to interview in groups since there is some evidence that 15 and 16 year-olds may feel threatened when questioned by adults and so modify responses. In addition, the group allows for greater confidence and sharing of ideas (Denscombe, 1995). Further, Pugsley (1996) suggests that the degree of cohesion among the group can influence the degree of communication within the group, so enabling 'the all too often muted voice of the adolescent to be clearly heard'.

Relative achievement in design and technology  
Since summer 1998, Key Stage 4 capability in design and technology has been measured by material specific GCSE examinations, in electronic products, resistant materials, food, graphic products, textiles and systems and control.

Throughout this period, there has been a general improvement in results for both boys and girls (the only exception is in graphic products where the trend is reversed), however, the improvement shown by girls is generally greater than that shown by boys (see TABLE 1). It is noteworthy that girls have outperformed the boys in every design and technology GCSE option since the current syllabi were introduced. It is also worth noting that with the exception of graphic products, the option choices tend to be heavily gender biased. Boys tend to predominate in resistant materials, electronic products and systems and control; whereas girls tend to opt for textiles and food technology.

Table 1: National performance at GCSE in design and technology 1998–2000: Percentage of students gaining A\*–C.

Material	Gender	1998	1999	2000	Change 1998-1999	Change 1999-2000
Food technology	Boys	31.6	34.2	36.4	2.6	2.2
	Girls	52.3	54.6	56.8	2.3	2.2
	All	47.2	49.5	51.7	2.3	2.2
Graphic products	Boys	43.9	43.2	42.4	(0.7)	(0.8)
	Girls	62.1	61.5	60.7	(0.6)	(0.8)
	All	51.4	50.9	50.5	(0.5)	(0.4)
Electronic products	Boys	49.9	50.9	52.9	1	2
	Girls	61.2	63	65.8	1.8	2.8
	All	51	52	54	1	3
Resistant materials	Boys	39.3	40.2	39.7	0.9	(0.5)
	Girls	56.8	56.1	58.5	(0.7)	2.4
	All	43.4	43.9	44.2	0.5	(0.3)
Textiles	Boys	22.4	27.6	25.4	5.2	(2.2)
	Girls	57.6	58.8	60.6	1.2	1.8
	All	55.9	57.4	59	1.5	1.6
Systems and control	Boys	49.2	51.5	51.3	2.3	(0.2)
	Girls	62.7	65.8	70.9	3.1	5.1
	All	51.4	53.4	53.6	2.0	0.2

Source: AQA Statistics.

#### School focus: case study

There are always dangers in focusing on one school when considering national trends, however, in this case I needed to move from the broad picture to specifics in order to identify possible mechanisms at work in boys' relative underachievement.

The school chosen is situated 3 miles south of the city centre and is close to the mid-range of Sheffield

schools in terms of size, ethnic composition and social composition. 'Generally, examination results for the school are above that expected for similar schools.' (OFSTED, 1999)

At GCSE the design and technology department offers food technology, resistant materials, graphic products and electronic products. Students experience each of these areas in each year at Key Stage 3. In Year

Table 2: Performance at GCSE in design and technology 1998–2000 in case study school: Percentage of students gaining A\*–C.

Material	Gender	1998	1999	2000	Change 1998-1999	Change 1999-2000
Food technology	Boys	0	25	0	25.0	(25.0)
	Girls	28.6	31.6	22.7	3.0	(8.9)
	All	20.4	29.6	17.2	9.2	(12.4)
Graphic products	Boys	37.5	10.7	32.2	(26.8)	21.5
	Girls	28.6	36.6	25	8	(11.6)
	All	34	24.1	28.8	(9.9)	4.7
Electronic products	Boys	37.5	55.6	46.9	18.1	(8.7)
	Girls	33.3	100	100	66.7	0.0
	All	36.8	61.1	48.5	24.3	(12.6)
Resistant materials	Boys	20.6	26.7	46.4	6.1	19.7
	Girls	40	55	34.6	15	(20.4)
	All	27.8	38	40.7	10.2	2.7

9, students select two out of the four areas for possible GCSE study. Students are then allocated to mixed ability groupings, ensuring that all are given one of the two choices. Generally, timetabling constraints dominate decisions concerning options.

In 1999, the design and technology department became part of the DfEE/DATA CAD/CAM in Schools Initiative; this gave access to a range of ICT software, although the impact on each area has been uneven. In food technology, there has been negligible development, whereas in electronic products, there has been a transformation of teaching and learning. Resistant materials and graphic products fall between these two poles, with the more consistent development being in resistant materials.

Table 2 indicates the performance of students at the school over the last three years. Students studying electronic products gain the best results; whereas those studying food technology gain the worst results. Resistant materials and graphic products fall between these two poles.

Food technology remains separated from the rest of the area geographically and ideologically; consequently I have not included food as part of the study.

During this study, I have focused on the area of resistant materials; this is because in the case study school food and electronics groups tend to be heavily gender biased in terms of numbers of students. This is shown by 1999 electronics results, the one female gained a grade A giving 100% A-C. Secondly, the national results for resistant materials show the greatest level of underperformance of boys relative to girls.

A superficial reading of these results may lead to the conclusion that since the gender gap in the case study school in resistant materials was reversed in 2000, this is no longer a problem in the school. However, the results for resistant materials indicate that in 2000 we witness a fall in girls' achievement, this was mirrored across the curriculum in the school, and was the subject of much school-based discussion – the outcome was that it appeared that the influence of a group of disaffected girls on peers adversely impacted on achievement.

### **The impact of ability and attitudes within option groupings**

Trafford and Clark (1995) suggested that the grouping together of low ability students could reinforce negative attitudes to learning. Consequently, it was desirable to investigate whether behind the free choice of option given to the students they were in

fact selecting options that led to the least able being concentrated in particular options.

In order to investigate this factor, GCSE results in maths, English and science for male students over the last three years were coded: A\* = 8, A=7 down to G= 1 and an average calculated for each group. These are shown in Figure 1.

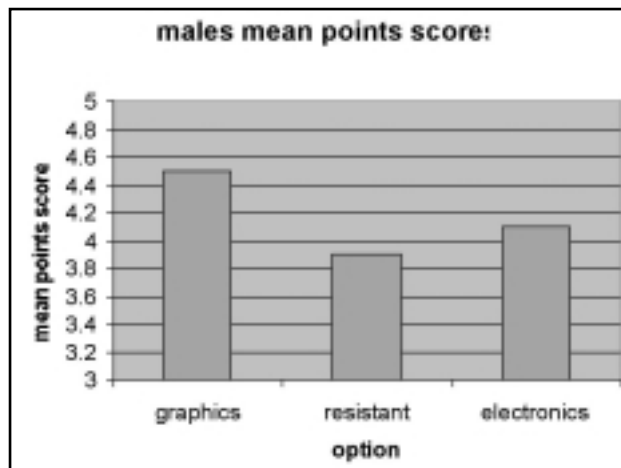


Figure 1.

The results were different from those anticipated by students and staff.

‘I didn’t think I was clever enough to do electronics – you get a lot of swots doing it’. Year 11 male resistant materials

Both had expected the electronics students to be the most academic, however, the evidence points to those students studying graphic products gaining the best results in maths, English and science, and the ability of the resistant materials students being only slightly lower than those studying electronics. Indeed results for 1998 and 1999 indicate the level of achievement in core subjects for those students opting for resistant materials was higher than that for electronics. Concerns over the reliability of Key Stage 3 data for design and technology lead me to reject the possibility of using this source of data as a valid baseline to measure value added over Key Stage 4.

The results from the questionnaire indicated that there were differences in attitudes between the students studying electronic products and those opting for resistant materials.

In Figure 2, the student questionnaire was used to examine the influence of past success on student option choice.

Students of all genders and from all options considered that this was an important factor. This is

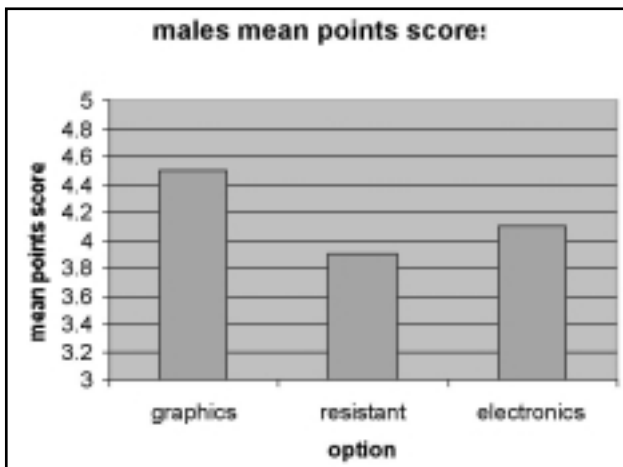


Figure 2.

reflected in the consistently high average marks out of five derived from the Likart Tests for questions ‘Did you choose this option because you are good at it?’ and ‘Did you choose it because you were better at this option than the others available’. High scores were also recorded for the statement, ‘I chose this option because I disliked the others more.’

The results are similar for all groups although it is noticeable that these academic reasons appeared to be least important for males choosing resistant materials.

In Figure 3, the influence of other people on choice was examined. Contrary to the portrayal of students choosing options to be with friends, the scores indicated that teachers were the biggest influence on option choice. It is also significant that parents were considered the least important people in determining option choice, however, this may reflect ‘teenage’ rebellion against parents or lack of understanding of design and technology by parents. It is significant

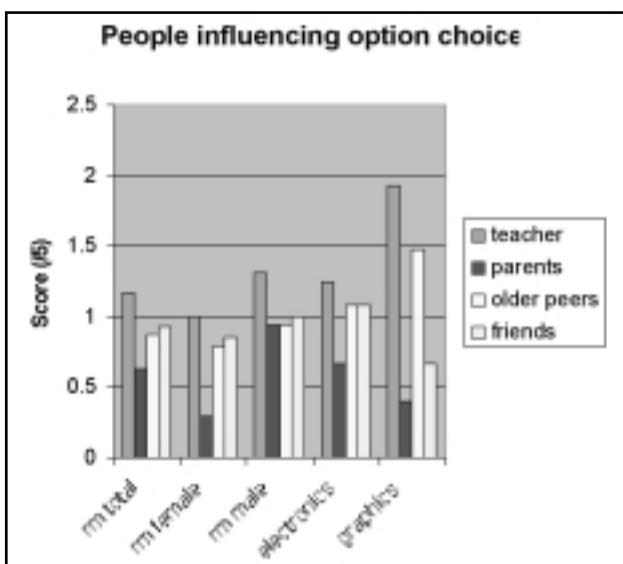


Figure 3.

that the average scores were well below those recorded for academic influences.

However, amongst boys opting for resistant materials, the impact of parents and friends was greater than for other groups.

Possibly, the impact of older peers was more important for graphics students because although Sheffield schools are mainly 11-16, there is no provision to study design and technology at Sheffield College, although there are popular graphics courses.

In Figure 4, the average scores indicate that boys select these options with a view to gaining a job, or for use in later life. A number of electronics students have studied further in this field and have gained employment. It is noticeable that a difference arises between the genders studying resistant materials, boys consider usefulness in later life twice as important as girls, and in gaining employment three times as important.

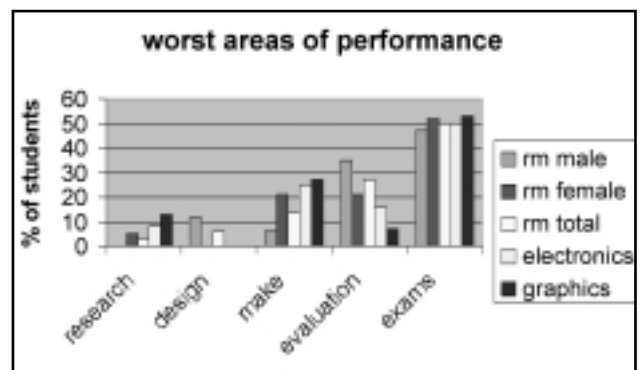


Figure 4.

It is also noticeable that male students opting for resistant materials identify usefulness in later life as more important than any other group. This is supported by some of the student comments.

‘I think learning to make stuff will be really useful for when I get my own place.’ Year 11 resistant materials male

However, there seems to be little evidence that these students pursue careers in this domain. The move from craft based skills to design based skills in manufacturing seems to have failed to register with these students.

Consequently, one mechanism that appears to operate is that lower ability boys imbued with the idea that they are not academic enough to succeed at electronic products opt for resistant materials in the belief that it will be of use in later life. This often occurs under the

influence of parents and friends who reinforce this choice. Certainly, there is a feeling amongst staff that counter school culture boys often concentrate in resistant materials groups. Those most likely to challenge teachers and the rules of the school are often difficult to motivate and can radically affect the group dynamic.

‘I’ve always been good at making stuff. But I mainly like having a laff with me mates. My mom thought it’d help me get a job joining or summut.’  
Year 11 resistant materials male

Further research across a range of schools is needed to substantiate these findings. Possibly, there are also social considerations that should be taken into account, but this is beyond the range of this initial study.

**Teaching and learning in design and technology**

Students were asked to identify the area within the subject that they felt least competence in Figure 5. Since this research was conducted in the summer term, perhaps it is not surprising that the majority of students identified examinations as the area of worst performance. This may also account for the high number of students identifying evaluation as an area of poor performance. In discussion with students, a number identified evaluation with a form of criticism of their work. This was particularly marked amongst boys studying resistant materials.

‘Evaluating is like admitting what’s wrong with your work. What’s the point? I thought that was what the examiner had to find out.’  
Year 11 graphic products male

‘What’s the point of evaluating your work? It’s not like you’ve got time to change it.’  
Year 11 resistant materials male

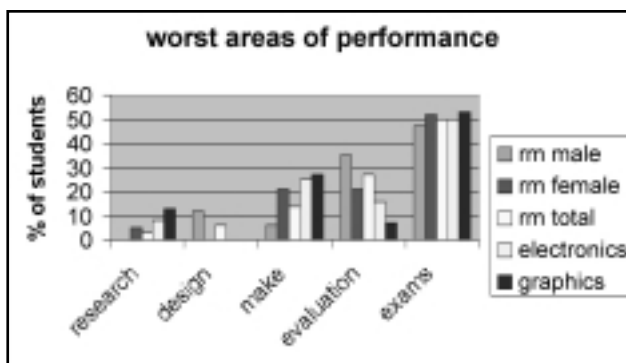


Figure 5.

Both of these comments indicate a linear approach to project work, and staff accept that the drive to raise achievement has led to compromises in teaching and

greater structuring of activities. The result is that staff complain of being constrained by the GCSE examination system.

‘The main problem with the exam is that when students are making you know that if the product does not work, there’s no way that they will get more than a D. So it forces you to play safe, to stick to tried and tested projects.’  
Electronics teacher

It is also significant that the only group of students who identified design as an area of worst performance were the boys studying resistant materials. It is noticeable that in the last two years, electronics and graphics courses have used Pro/DESKTOP and other ICT packages to a greater degree than resistant materials. The department is aware of this trend and has made plans for staff INSET.

Further, the graphs provide some evidence to indicate that those selecting graphic products do so to focus on design and to avoid making. This is highlighted by the scores for those students studying graphic products in designing from areas of best performance, and in scores for making in areas of worst performance.

Girls studying resistant materials identified making as an area of poor performance, however, in discussions with staff it became apparent that girls seemed to ask for and accept advice from their teachers. Boys seemed more confident in their own ability (wrongly so), but this extended to a refusal to accept that there were better techniques and methods for progressing with practical work.

During interviews several staff indicated that there seemed to be an acceptance amongst boys that being good at making was something to aspire to, that it was something to be proud of, whereas ability in designing could label you as a ‘swot’.

‘It was amazing, A\_\_ and J\_\_ were down the workshop every lunchtime with a crew of hangers on who’d come to marvel at their practical work.’ resistant materials teacher speaking about two of the most challenging students in Year 11.

‘M\_\_ was quite happy to come in at lunchtime to do his practical work. But when he had to sort out his design work, he’d only come in before school when none of his mates were around.’ electronics teacher

The results for areas of best performance GRAPH 6 support the findings above, however it is worth noting the high proportion of students that identified research as an area of best performance.

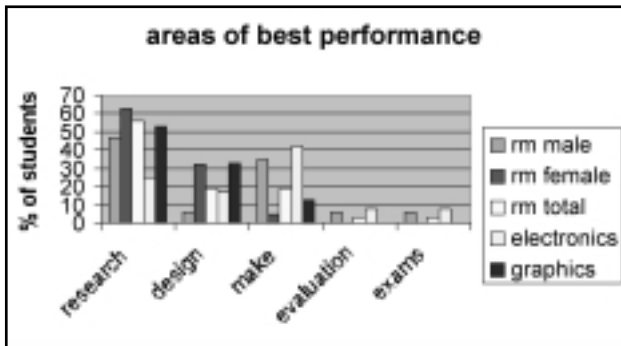


Figure 6.

Many students saw this as a series of definite tasks with a start and finish which could be checked off. When assessment sheets were inspected, staff feedback was more specific, identifying further tasks to be completed in comparison with feedback given on designing. Over the last two years the school decided to introduce units of GNVQ manufacturing in Year 10 as part of the GCSE courses in design and technology. The assessment is criterion based and was warmly welcomed by students.

‘With the GNVQ work, you always knew exactly what you had to do to pass.’

Year 11 electronic products male

Possibly the research work had a similar structure and feel to the work done earlier.

‘I liked doing the research, you could break it into manageable chunks and say get one bit done in a night. It was quite satisfying to sort of tick it off.’

Year 11 resistant materials female

As indicated earlier, the school is part of the DfEE/DATA CAD/CAM in Schools Initiative. Consequently, I was keen to look at the impact of ICT on teaching and learning. In the questionnaire, students were asked to indicate the range of ICT activities that they had used in design and technology. The possible choices were: word processing; producing graphs; designing; CAM; research from CD or Internet; and using databases.

To gain an insight into the breadth of activities, one mark was allocated for each activity, students indicated they had been involved in. The points total for each group of was then divided by the number of students to give the points score.

These results (see Figure 7) indicate that the broadest range of activities was found in graphic products and the narrowest range in electronics. However, this result does not give sufficient insight into the level of competence of students in use of ICT, and the complexity of tasks tackled.

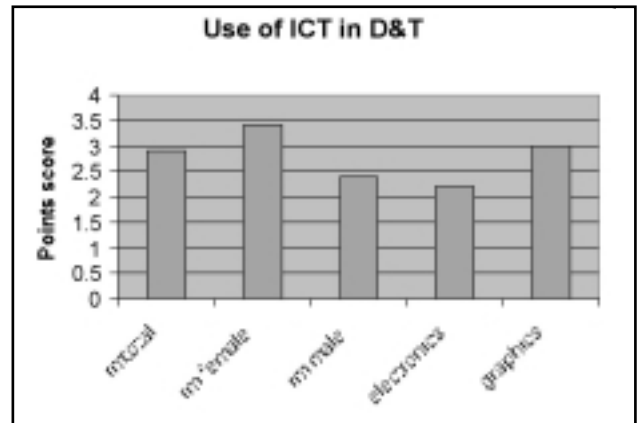


Figure 7.

When results were analysed for the use of ICT in designing and in CAM (see Figure 8) there was a marked difference in the extent of use in resistant materials compared to the use in electronic products.

It should be noted from earlier that the electronics students are overwhelmingly male and that the results achieved by these students were usually higher than those gained by students in resistant materials. This was also reflected in the inspection of project work. In the case of the electronic products, students had used Pro/DESKTOP to design the product casing and Quickroute 4.0 for printed circuit board (pcb) manufacture. On the other hand, graphic product students described their designing activities in terms of the use of clip art to enhance presentation.

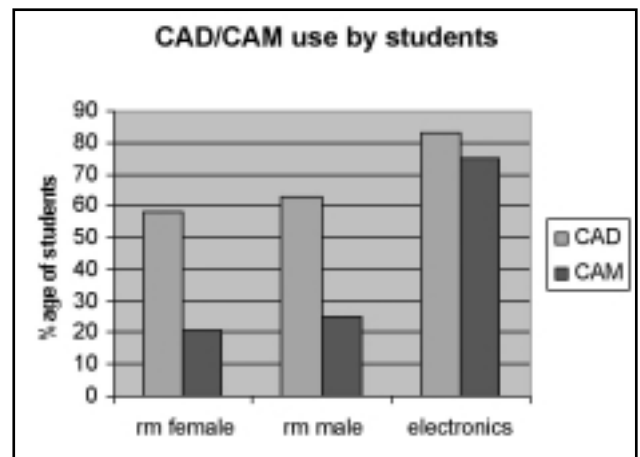


Figure 8.

During interviews, staff were asked to describe the ICT activities that would be most likely to be observed in their classrooms over a period of time: Both teachers of electronics indicated that CAD and CAM were the chief activities undertaken in class. In fact one had taken the step of banning the use of ICT facilities for word processing, because of the high pressure for machines.



‘The demand from students to do CAD/CAM work is huge. Once they start to see the potential of ProDesktop they pester you to use facilities every break and lunchtime.’ electronic products teacher

When questioned, staff reported that departmental ICT clubs were primarily populated by boys. Teachers of resistant materials indicated a broader range of ICT activities, and readily acknowledged that although they aspired to use CAD/CAM with all students, this often did not happen:

‘I always start with plans to focus on CAD/CAM, but the pressure of the class demands that you can’t be looking over students shoulders to help with ICT problems when they arise. When you do manage to get to them, you find that they’ve given up and are busy making borders for design sheets.’ resistant materials teacher

Student interviews also gave interesting insights:

‘I liked learning Pro/DESKTOP ... I never was much good at designing before, but this made it more real.’ electronics Year 11 male

‘I always find it hard to draw five ideas to get started, but with Pro/DESKTOP you could use your imagination more and not have to worry if you were rubbish at drawing.’ electronics Year 11 male

‘Using CAD was more like a computer game – it didn’t seem like schoolwork.’ resistant materials Year 11 male

It would appear that the use of ICT particularly when designing and making is an important factor when looking at raising achievement of boys. It appeared that the stigma associated with being academically able was suspended when using ICT.

### Conclusions

Since this study is limited to only one school, the conclusions can only be tentative and point the way for further research.

- National results indicate that boys achieve lower results at GCSE than girls, however the general trend for both boys and girls is upwards. Therefore the tag ‘male underachievement’ can only be used when results are considered relative to girls.
- It is not surprising that the results from an individual case study school do not mirror the trends in the national picture since the small numbers of students involved lead to statistical

anomalies. Further, variations in the quality of teaching, composition of groups, resourcing and staff turnover lead to issues that cannot be quantified. However, with the exception of girls’ performance in 2000, there is evidence that girls outperform boys at GCSE.

- In the case study school there is little difference in the ability of those selecting resistant materials and electronic products. However, there are differences in achievement. A number of factors contribute to this:
  - those selecting resistant materials tend to be more influenced by choices of friends than those opting for electronic products
  - boys opting for resistant materials tend to take greater note of the views of parents than those opting for electronic products, and possibly students are acting upon parental misconceptions of the nature of design and technology
  - male students believe that studying resistant materials will lead to a job and be of use in later life
  - boys in resistant materials displayed greater confidence when using tools, but this was accompanied by a reluctance to accept advice. There is a macho pride in doing it ‘their own way’.
  - girls were less confident about their making skills, however, they appear to accept and act on advice more readily and produce more accurate products
  - girls have a more positive attitude towards designing than boys, this is particularly true in resistant materials. Consequently, girls are more likely to perform well in the earlier stages of project work, which can give confidence in the later practical element. However, the reverse is true for boys.
  - the impact of CAD/CAM has been positive in countering negative attitudes amongst boys to designing of work when it has been integrated into teaching. However, a carefully structured approach to CAD/CAM is needed to give a depth of skills and understanding, and to ensure that ICT is used appropriately. This is evidenced by the difference in outcomes between those students studying resistant materials and those following electronic products in the case study school.

These factors appear to reinforce one another, leading to a scenario where male students who opt for resistant materials have expectations that are not matched by the reality of the course or by opportunities post-16.

A further outcome of the study was that all groups responded positively to a structured approach to learning. However, it should be recognised that providing a structure is very different from imposing projects on students and removing ownership of project work from individuals.

As a result of this research a number of recommendations have been made to the school:

- use of ICT needs to be carefully planned at both Key Stages 3 and 4 to ensure that students use facilities appropriately
- students and parents need further advice on GCSE options, post-16 opportunities and on the changing face of manufacturing
- the school should reconsider the current practice of allowing a free choice of the four GCSE options offered
- the composition of GCSE groups should consider the impact of individuals and peer groups
- greater structure to courses, in particular deadlines and feedback to students can have a positive impact on achievement
- the department should provide input on how the work of designers impacts on the manufacturing of products at both Key Stage 3 and 4.

Of course, this is not to suggest that these are the exclusive factors contributing to boys' relative underachievement, or that there is evidence to suggest that the recommendations can be transferred to other schools. The issue of boys' relative underachievement is obviously complex and it would be incorrect to claim that there is a single solution. However, the issues raised deserve to be considered in a more extensive study.

Finally, it was striking to note how the findings of quantitative methods employed were confirmed by the views of students, and this would seem to offer a rich and often neglected source of evidence of our practice.

## References

- Abrams, F. (1998) 'Classroom Rescue for Britain's Lost Boys', *The Independent*, 5 January
- Bright, M. (1998) 'Boys Performing Badly', *The Observer*, 4 January
- Clark and Trafford (1995) *Boys and Modern Languages: An investigation of the discrepancy in attitudes and performance between boys and girls in modern language*
- Denscombe, M. (1995) 'Explorations in Group Interviews: An evaluation of a reflexive and partisan approach', *British Educational Research Journal*, 21 (2): 131–48
- Gipps and Murphy (1994) *A Fair Test: Assessment, Achievement and Equity*, Buckingham: Open University Press

Hargreaves (1967) 'Social Relations in a Secondary School', Routledge and Kegan Paul

Ive (2000) 'Issues for Internal Assessment of D&T', QCA-Moderators Conference

Kimbell, R. (1991) *Assessing Performance in D&T*, SEAC

Lacey (1970) *Hightown Grammar: The School as a Social System*, Manchester: Manchester University Press

McCrum, N. (1994) 'The Academic Gender Deficit at Oxford and Cambridge', *Oxford Review of Education*, 20 (1): 3–26

Norris, M. (1980) 'Beginner's Guide to the use of Repertory Grid in Research', *Occasional Paper No 1*, University of Surrey

Powell and Batters (1985) Pupils Perception of Foreign Language Learning at 12+: Some gender differences', *Educational Studies*, 11: 1–23

Pugsley (1996) 'Focus Groups, Young People and Sex Education', in Pilcher and Coffey (Eds) *Gender and Qualitative Research*, Aldershot

Weiner, G., Arnot, M. and David, M. (1997) 'Is the Future Female? Female success, male disadvantage and changing gender patterns in education', in Halsey, A., Lauder, H., Brown, P. and Wells, A. (Eds) *Education: Culture, Economy and Society*, Oxford: Oxford University Press

Willis, P. (1977) 'Learning To Labour' *Gover*

Younger and Warrington (1996) 'Different Achievement of Girls and Boys at GCSE: Some observations from the perspective of one school', *British Journal of Sociology of Education*, 17 (3): 299–313

Younger and Warrington (1996) 'Perspectives on the Gender Gap in English Secondary Schools', *Research Papers in Education*, 14 (1): 51–77