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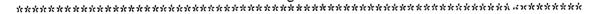
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#### **ABSTRACT**

The study focuses on the gendering of Australian school students through their participation in school. Specifically grades 7, 8 and 10 were studied. The initial group of 112 middle class students was studied by an ethnographic investigation of schooling practice in four classes of senior elementary school students for one year. Fifty-two students then traveled to the public high school and were further observed in the classroom and interviewed in small groups. Teachers also participated in the interviews. A contrast of the students at the girls-only school with those at the co-educational high school also was made. The students completed an attitude measure that had been validated previously with other Australian school students of a similar age. The results were consistent with pre-existing understandings of school-related gender differences. The girls as a group were disposed more favorably towards school than the boys, but were less positive about particular subject areas, such as mathematics and science. Contains 24 references. (EH)

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# Paper presented at the AERA Conference New Orleans 1994

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Research about gender and schooling has produced a range of accepted understandings, some of which are here identified as Old Truths.

#### **OLD TRUTHS**

- 1. More boys enrol in the maths science subjects in their senior years of high school than do girls.
- 2. Boys have a more positive orientation to maths than do girls.
- 3. Boys demonstrate higher self esteem than girls.
- 4. Boys have more motivation to succeed in math/science in school than girls.
- 5. Girls are more positively oriented towards school in the early school years than are boys.
- 6. Girls are more affected by teacher personality and style than are boys.
- 7. Girls are less concerned with career preparation than are boys.
- 8. Girls emerge from the elementary school as, on average, better at school work than boys, even in the maths subjects, but this difference is reversed during high school such that boys emerge from their high school years as the more successful student group.

Educationists have sought to explain these outcomes in terms of existing theories in the following ways:

#### THEORETICAL EXPLANATIONS

from Psychology:



天教徒的公安以外,不事一人是我不敢致好好成本人

- 1. Genetically established sex differences
- spatial relations which are involved in mathematics learning (Fennema, 1979, 1981; Sherman, 1978).
- girls have stronger affiliative needs whereas boys have stronger achievement orientations (Gilligan, 1982, 1990; Block, 1984)
- 2. Motivation theory male subjects consistently perform in tests of achievement motivation, females do not (Horner, 1972; Leder, 1980, 1982; Gill, 1980).

from Sociology

- 3. Schools reproduce the inequalities of the larger society (Bourdieu and Passeron, 1977; Bernstein, 1977; Branson and Miller, 1979; MacDonald, 1980).
- 4. The power relations of the society are perpetuated in schools, hence relations of gender, class and ethnicity are reproduced in schooling practice (Bowles and Gintis, 1976; Apple, 1980, 1982; Connell et al, 1982).

#### STALEMATE !!!!

Established theories such as these tended to render the school in general and the teacher in particular powerless to make any difference to gender related schooling outcomes. Such outcomes were seen as an inevitable result of either individual psychology or of power differences embedded in the social formation.

At the same time research interest in schooling process continued to develop, particularly in responses to some of the sociological theory which directed attention towards the lived experience of schooling in an effort to identify how differences were produced and maintained.



#### **NEW LIGHT**

Attention to schooling process coming from the above theories led to a recognition of classroom culture as playing an important and constitutive role in the construction of students as sexed, classed and ethnicised subjects. In particular post structuralist theories which concern themselves with the discursive practices of schooling through which students are positioned and within which they position themselves have been seen to offer a more convincing account of the ways in which schools work than had been previously available (Davies, 1989; Lather, 1991; Walkerdine, 1986, 1989).

The central argument of this paper is that young people are constructed as having particular sets of attitudes and attributes through the discursive practices of schooling in ways which position them with respect to gender, class and ethnicity. Far from seeing the young people as passive or simply reactive within this process, a focus on discursive practices reveals the young people as actively engaged in taking up positions from the range of possibilities made available to them in the discourses of schooling. One feature of schooling discourse which emerges from the present work concerns the embedded nature of gender within the discursive practice of schooling. The particular emphasis of the following discussion will be on the gendering of school students through their participation in schooling.

#### THE STUDY

This paper reports on data obtained from a large study of the effects of transition from elementary to high school on a group of middle class school students. It is fairly typical in Australia for students, especially middle class students, to attend public coeducational elementary school and then proceed to private school for secondary education. The target group followed this pattern in that 40% of the original group transferred out of the public school system at the end of their primary (elementary) schooling. There were 112 children in the initial year of the study, and they were grouped in four senior classes in the school. In the following year the group reduced to 52 attending the local government coeducational high school in the following year. A smaller number, 12, went to a neighbouring girls' high school and the rest went on to private schools. The concern of this paper is with the



gender differences in attitude evidenced by these young people in their final year of elementary school as compared to their high school experience. A further theme of the study was to contrast the experience of the students at the girls only school with that of those attending the coeducational high school.

#### **METHOD**

The study took the form of an ethnographic investigation of schooling practice in which the researcher spent the first year in four classes of senior elementary school students and travelled with them the following year to the public high schools. After a lengthy period of classroom observation the students were interviewed in small groups. Teachers also participated in interviews. All interview data were transcribed an analysed. Finally the students completed an attitude measure which had been previously validated with a group of similar aged Australian school students (Power and Cotterell, 1979). In both high schools comparable groups of year 10 students completed the attitude measure as well to make it possible to chart the further development of attitudes to school and to particular subjects likely for the target group.

#### RESULTS

The picture obtained from the attitude measure was consistent with pre-existing understanding of school related gender differences, here described as Old Truths. At the end of primary school the girls were as a group more favourably disposed towards school than the boys, but less positive about particular subject areas, viz maths and science.



#### THE SITUATION AS SHOWN BY THE ATTITUDE MEASURES.

#### a) General attitude to school

Evidence of gender difference in attitude to school at year 7 is clear from the results.

# TABLE 1 GENERAL SCHOOL SATISFACTION Comparison of group means by sex

The results of the same instrument taken the following year show that for the target group satisfaction with schooling continued to be marked by gender with the girls in the mixed school maintaining the significantly more positive orientation to school than the boys. For the girls who went to the girls' only school in year 8, the move was associated with a marked decline in positive feelings about school. Gender pathways were clear in the comparison between the year 8 satisfaction with school and that of the year 10s, with the girls' more positive response to school declining whereas that of the boys stayed much the same. Note that by year 10 the girls' more positive orientation to school had declined, by

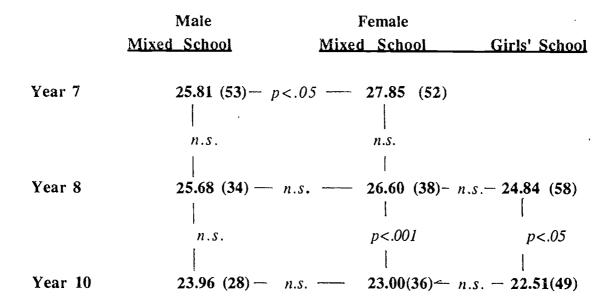


which stage their response was almost identical to that of the boys, and not significantly different from that of the girls at the girls school.

The attitude measure used contained two parts, both of which attempted to measure student response to school, one in terms of satisfaction with school (as seen in the table above) and the other which assessed student response to the concept school more generally. A comparison was therefore possible between the pictures generated by the two parts of the measure in terms of student response to school.

## TABLE II: STUDENT ATTITUDES TO SCHOOL

Comparison of group means by sex.



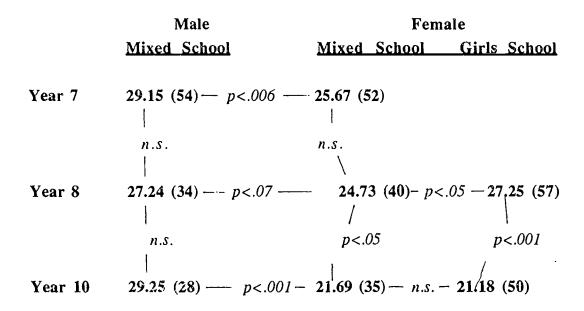
The picture derived from this part of the measure (as shown in Table II) largely confirmed the results of the pervious measure, showing that for the boys in the study attitude to school stays much the same during the transition to high school and between year 8 and year 10, whereas for the girls in the study the first two years in high school were accompanied by a decline in positive orientation to school such that the gender differences in attitude typical of primary school students had disappeared by mid high school.



### b) Attitude to particular subject areas.

In terms of particular subject areas gender differences appear to be established by the final year of elementary school, notably in the case of mathematics.

# TABLE III: STUDENT ATTITUDES TO MATHEMATICS Comparison of group means by sex



These differences appear to be exacerbated by the transition to high school, not so much in the transition year but certainly by year 10. The first year students at the girls' high school showed a significantly more positive orientation to maths than they had done as primary students, but this feature had disappeared by year 10.

In the case of science the picture was similar with boys clearly more positively oriented towards the subject at year 7, an orientation that did not change very much through the early years in high school. The girls' results on the attitude measure were once again more volatile than those of the boys. While the girls as a group had showed a significantly less favourable attitude to science in year 7, this was to change for the girls who moved to the

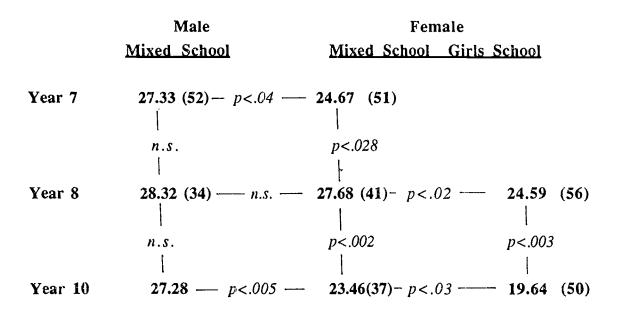
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mixed high school in year 8, only to decline once more by year 10. For the girls at the girls' high school science did not coincide with a change in their subject orientation, and by year 10 this subject is viewed much less positively by these girls than by their mixed school peers.

### TABLE IV: STUDENT ATTITUDES TO SCIENCE

Comparison of group means by sex



At the mixed high school in this study, year 8 science classes involved botany, zoology and biology, subject areas to which girls reliably respond more positively than to physical sciences and chemistry, and the change in attitude from primary school is perhaps not surprising. By year 10 at both schools science was firmly established in the physics/chemistry mode, a theme which corresponded to girls losing interest.

#### c) Attitude to teachers.

The one dimension along which girls' responses were relatively constant while those of boys underwent change was in their attitude to primary school teachers.



TABLE V: STUDENT ATTITUDES TO PRIMARY TEACHERS

Comparison of group means by sex.

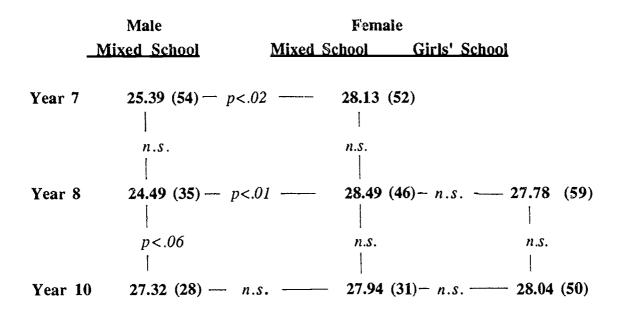


Table V shows a clear gender difference as revealed in the attitude measure in response to teachers with the girls holding to a more positive response to teachers, and especially to their elementary school teachers, right through school. The boys, on the other hand, were much less positive about their elementary school teachers during their last year at elementary school and their first year at high school. However by year 10 the boys appeared to hold to a more favourable view of their elementary school teachers.

The interesting point revealed by these measures is that the students are not fixed in particular sets of attitudes by their gender, nor by their common school experience. The volatility of these responses, especially those of the girls, demonstrates the need for more subtle and complex explanations and theory than has been available to date.

#### **ANALYSIS**

In order to give some explanation of the changes charted above it is necessary to move beyond seeing the students as determined by gender in terms of biology or social system.



The picture here is much too fluid and changeable for that, especially when examining the range of responses of the girls. The following explanation is based on the language and behaviour in classroom interaction, coupled with student voice from the interviews in order to provide a way of seeing how students take up positions as male and female in everyday schooling practice. Hence the argument that the discursive practices of schooling play a constitutive role in the construction of gender in students.

The following sections are separated for clarity of discussion, however it is my contention that schooling discourse functions as a totalising process wherein the differences of year level, gender, class *inter alia* take up different positions within the whole concept of school culture.

#### i) attitude to school

For the majority of the children in the study, primary school experience was the only experience of schooling. They were in many respects relatively uncritical of that experience, appearing to accept their school as they experienced it. As one girl remarked:

You get used to the daily routine ... and it becomes a part of you.

Within that normal experience they had come to understand that it was right and proper that women tended to predominate in the early school years and that school principals and people with school wide authority tended to be men. From their experience they had built up a practical awareness of how school works within these gendered categorisations.

Little kids are used to their mothers at home and they are more likely to get on with a lady teacher.

Women like little kids better.

Little children are scared of men ... it's something psychological ... they're taller ... some grow beards and that gets you a bit scared ... .



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Although the children all expressed a position that people, men and women, boys and girls were equal and that they were not sexist, they also expressed opposition to the idea of a female principal:

I don't think women should be in charge.

Female principals wouldn't have the authority of a man ....

A man would probably run a school better ....

The kids would probably take advantage of her (a female principal) ...

A male principal would be better because women aren't into sport.

A man would get things done whereas a woman would work at getting all the rules right.

In these statements the young speakers are seen taking up positions within the gendered discourse of school structure which informs much of the schooling practice in South Australia. In attempting to make sense of their experience and explain it, they are actively making theory relating to male and female positions and potential. And their theories, grounded in their own actual experience, prescribe gender roles.

As they moved to high school, these young people became more prepared to address critically the concept of school, and this is where gender differences in their talk about school became more clear. For the boys high school was regarded as much more important than primary school and they appeared to relish the associated increase in status:

Toby: Primary school seems pretty weak compared to high school.

David: This is where you really have to start to work.

Greg: There is more depth in subjects here.

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Lucas: I like high school better because it's more work oriented, not busy work like primary school ... and you have to be responsible for yourself.

Tom: In primary school the stuff we did was pretty simple and boring .. here it's heaps more complicated and so it gets you interested.

As the girls move into high school their positive orientation diminishes. In their interviews many of the girls lamented the fact that they felt less known, less recognised in the larger context of the mixed high school with its more impersonal student-teacher relations and a much more varied exposure to teachers than had been the case in the elementary school.

Ria: There's a big change from primary school. The teachers aren't so interested in you at high school. It's not such a close relationship. They're just doing their job ... but last year my teacher was more like a mother.

Sandra: You're not as close to the teacher .. cos they've got so many kids to teach.

Joanne: Nobody knows you here - it's like you're just another number.

The girls also complained of having 'nothing to do' at recess and lunch times as they negotiated the passage between childhood and young adulthood:

Tania: Nothing's organised here ... they think we're big enough but we're not ...

Marina: Yeah ... it's boring at lunchtime and recess ... nothing to play on .. I mean we don't want swings and slides like little kids, but there ought to be something for us to do ...

Melanie: At first I tried to get playing games.. I brought a ball to school.. but no one would play any games.. they just said to sit down.

For the boys, still happy participants in a sporting schoolboy culture, recess and lunch were the best thing about the school day, whereas for the girls these times definitely constituted a problem.



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In these excerpts there is some indication of a change in orientation to school by the girls. The boys, on the other hand, having never been as pleased by school arrangements as the girls, adapt more easily to the less personalised environment of the high school in which they can maintain their interest in self advancement and sporting culture.

### ii) attitude to mathematics and science

Of all the subject areas maths stood out, right from the elementary school level, as the most clearly distinguishable subject area. Maths was also designated as among the most important things we learn by the vast majority of students at this level. As has been consistently established in the literature on maths education, whereas both boys and girls see maths as important, more boys than girls are positively oriented to the subject and look forward to learning more of it. This feature was reiterated in the results of the present study. The children's perceptions of maths functioning as a sorting device were clear:

girl: You can hide your lack of knowledge in some subjects, but not in maths

boy: You're either right or wrong in maths.

girl: In maths it's always Hands up 10 out of 10, 9 out of 10, and so on .. I don't put my hand up if I've got just four or five ..

boy: You can't fake it in maths .. you've either got the answer or you haven't.

The primary students' responses to maths noted above conveyed a consciousness of public performance associated with maths class, and it is within this construct of public performance that some explana. In can be found for the gender difference in attitude to this subject. The boys were consistently seen to operate as public personae in the classroom and within the school generally. They were much more likely to be named in class and at school assembly than were the girls. Boys were known across class and year levels in ways that girls were not. The construction of schoolboy was thus more in keeping with the structure of mathematics classrooms than that of schoolgirl. From this viewpoint the gender differences in attitude to the subject are not surprising.



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By high school the students have understood that ability in maths and science correlates with 'being bright'. Both high schools in the study tested the first year entry group for maths ability and sorted them into three sets as a result of the exercise. Teachers reinforced this setting continually in their classroom talk, as well as in their interviews.

JW(to the whole class): Now you're really working like an advanced class!

DT (in interview): Well you see the ones in the standard group are really not too bright.

Many of the teachers in the study held to a view in which maths ability was seen as an innate potential and as a marker of general intelligence, and that maths achievement was a problem for girl students. As a result several teachers mentioned highly achieving girls in their classes as testimony of their good teaching, whereas highly achieving boys were seen as living out their birthright.

The students also picked up the message of the connection between maleness and school-based achievement in certain subjects. In year 8 this difference is something of a mystery:

Ria (thoughtfully): Girls try harder. Boys have more intelligence ... they're bright but they don't try as hard as girls.

JG: How do you know?

Ria: Because they are ... the way they talk ... the way they can answer questions, the way they can work out problems ...

Sandra: Yes ... they haven't been studying it or anything ... but they just know the answer.



By year 10 girls explained the difference in terms of subjects:

Julie: Normally in Chemistry or something like that if you don't understand it ... and it's so logical to them 'cos they know it ...

JG: But why would they know it and you not?

Julie: Because they like that sort of subject and girls may not like it ...

JG: Do you think that they have more general knowledge than you?

Julie: No, we might know things that they don't know but it's not subjects ...

Leah: Yeah... they might not know more than we do, but they think they do... t hey go on as if they do...

The movement in the girls' perception of the boys as magical knowers and problem solvers to knowers of particular areas which are valued by the school coincides with girls' diminishing attitude to maths and science as revealed by the attitude measure. This movement is also coincident with passage through high school, a passage in which the girls appear to become increasingly aware of the gendered nature of school success.

Justine: Boys are better at the sciences.

JG: How did you get that impression?

Justine: Oh, they seem to know what they're doing ...

Sarah: They put their hands up more often.

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Justine: Also they're more interested in science than what girls are.

Kym: It's sort of like girls are better in primary school and then boys are better in high school ...



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Justine: But that's all it is in primary school - good behaviour and neat books.

Sarah: Yeah, when girls get to high school they just lose interest ...

In this sequence the girls are positioning themselves as girls within a discourse that carries profound gender implications. They can recognise themselves as knowers and hence as possessors of knowledge, but they recognise too that their sort of knowing is not the sort that is typically rewarded in high school, particularly in maths and science classes. Theirs is a deeply contradictory position, as is evident in the above excerpt, since on the one hand they show a ready perception of the limitation of school classified knowledge areas "subjects", they also pick up on the essentialist motivational explanation of gender difference which ends up in blaming the victim, they "lose interest".

#### iii) attitude to teachers

The widespread understanding that the elementary school teacher is a nurturing figure who is a constant presence in the lives of her/his students for at least the year in which they are in her/his charge was shared by the young people in the study. In particular girls nominated male teachers who they felt had been excellent primary school teachers. The boys on leaving primary school became somewhat derisive of their involvement with their primary teachers and repeatedly claimed that high school was more important, more real and not babyish like primary school. In the results of the attitude measure, the boys in year 7 and 8 can be seen as significantly less favourably disposed towards their primary school teachers than the girls. However by year 10, the boys become more positively oriented towards the primary teachers, perhaps more confident in their own maturity.

The girls, on the other hand, were more likely to cling to the memory of a warm supportive primary teacher and to resent the more impersonal quality exhibited by most of their high school teachers.

And at the same time the girls were dismissive of their primary school achievements:



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That's all it is in primary school: good behaviour and neat books.

#### CONCLUSIONS

The transition from elementary to high school is accompanied by changes in schooling culture such that the girls find that their more positive personal attitudes to school formulated in the primary years are inappropriate for high school. The boys, on the other hand, are better served by the schoolboy/resister/public figure positioning they have built up in primary school as they can translate this fairly readily into appropriately individualist attitudes and practices of the independent learner and the challenging mind required in the senior years.

Overall the paper argues that the discursive practices of schooling construct gender in students, and that this process powerfully impacts on their capacity as learners and their perception of themselves as learners.

A final point is that it is both possible and necessary (albeit difficult) to disrupt this process such that gender does not operate to delimit learning capacity or to construct attitudes antithetical to the overall educational purpose, namely to maximise student potential for all students in all areas.



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