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Doing the sums on maths and girls

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School

Girls and boys are both going backwards in maths, but for different reasons, report Bridie Smith and Elisabeth Tarica.

GIRLS and maths just don't add up. Or so the theory goes. But research from **Monash University** suggests that girls' under-representation in maths-related careers is due to a lack of interest and self-belief, rather than ability.

A three-year study of gender imbalance in secondary school maths participation has found that boys are full of bravado while girls lack confidence in their ability.

Author of the research paper Dr Helen Watt, from **Monash University's** faculty of education, says an inflated sense of ability gives boys an advantage over female peers which lasts well into their professional lives.

"Boys put themselves forward more because they are more confident, and that leads to a spiral of benefits," she says. "They participate in more advanced maths, which scaffolds their access to certain types of high-status, high-income careers and educational opportunities."

Boys, she says, are 20 per cent more likely to be studying a higher level of maths in their final two years of secondary education.

Dr Watt's research was part of an international study on gender imbalance in maths participation between boys and girls in Australia and America. A total of 1323 male and female students, from years 7 to 11, were surveyed at three Sydney co-educational secondary schools.

Dr Watt says American research suggests that girls' lack of interest in maths subjects began even before primary school. "We need to think very carefully about the types of performance and ability messages we are giving girls," she says. "From parents, from teachers and from the media . . . the sorts of messages they receive are shaping girls' aspirations."

Her research adds another slant to the continuing debate about learning and gender differences. Girls generally outshine boys academically and there is much debate about why this is so, including the theory that the sexes have different learning styles; girls show better communication and social skills while boys have more trouble with literacy.

But some educators believe that by clinging to traditional "male" educational paths, teenage boys may be sabotaging their chances of excelling at school.

Dr Peter Cox of La Trobe University's school of education found that many boys choose traditionally masculine subjects, such as maths and science, because they are likely to be teased about studying feminine subjects - not because they are good at them.

By doing so, he says, boys are ensuring they are not as broadly educated as girls.

"They don't have the same exposure to the humanities subjects, and they could do with more exposure," Dr Cox says.

His 2005 study into gender differences in high school maths and science found that boys were much more likely to be teased about their sexuality if they appeared to study hard, or if they studied "feminine" subjects.

"The students seemed to hold a lot of sex-stereotyped beliefs about appropriate subjects, behaviour and jobs, which are at odds with norms of contemporary society," he says.

Professor Johanna Wyn, director of the youth resource centre at Melbourne University, says there is a very strong pattern for boys to think they need to do a certain subject.

"One of the reasons we see boys failing and girls being very successful is that boys in general choose to do hard maths and the sciences. And they choose to do those subjects whether they're good at them or not," she says.

Pressure to cling to traditional male educational paths can create significant confusion and angst among teenage boys, especially those who lack male role models, she says.

There is compelling evidence that the performance of boys is going backwards. One of the main questions being asked is whether part of the reason for boys' problems is the lack of men in schools.

It is estimated that only one in four primary school teachers are men, and many secondary schools' staff ratios are skewed, leading to criticism that the classroom has become feminised. The argument is that if boys have only female teachers, how will they learn to be men?

A 2002 House of Representatives standing committee inquiry into boys' education found there was no single cause for boys' relative underachievement at school.

However, the inquiry reported, factors could include the decline in male teachers, schools not paying enough attention to boys' different learning styles, and that boys were more likely to respond negatively to poor teaching.

Peter Egeberg, principal of Thornbury High School, says male role models for boys are crucial.

"A lot of primary schools have mainly female teachers and a lot have no male teachers at all," he says. "And often there's no father, or kids don't live with their father, so there can be a lack of appropriate and positive male role models."