

Ethnicity, socio-economic status (SES), and non-mathematical masculinities

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Prior research has shown how ideas about 'rational man' (Walkerdine, 1988) and media images of male mathematicians can create an environment in which doing mathematics is 'doing masculinity' (Mendick, 2006). This report re-visits the intersection of gender and mathematics by highlighting a form of masculinity that is opposed, rather than aligned, to mathematics. In doing so it adopts Connell's (2008) position that there are many possible 'masculinities'. The most troubling finding is that, whilst many students achieve success in mathematics and sport, such a combination is in conflict with the 'physical' masculinity enacted by many socially disadvantaged and ethnic minority boys.

This report draws on interview, questionnaire, and test data from a socially and ethnically diverse group of 425 students aged 13-14 in three co-educational New Zealand secondary schools. The interviews and questionnaires covered topics such as enjoyment, ease, and importance of various school subjects, and career goals. A 'multiple capitals' approach (Bourdieu, 1984) framed the mixed-methods analysis of students' accumulation of 'academic capital' (good test results, compliant classroom behaviour) and 'physical capital' (athletic ability developed through Physical Education (PE) and sport). The term 'capital' and its associated theoretical framework highlights the potential exchange value of academic and physical abilities, as well as the dependence of this exchange value on the context or 'field'.

The majority of students from all backgrounds enjoyed PE, which was by far the most frequently listed 'favourite subject', and over 70 percent regularly played sport. In this sense most students were accumulating 'physical capital'. However, there was wide variation in the importance students attributed to physical activity. A group of students I have called 'well rounded' – a term often used in New Zealand to refer to academically successful students with a range of extracurricular interests – achieved good mathematics results and participated in a wide range of sports. Such students tended to be relatively socially privileged, and saw academic achievement as crucial to reaching the mainly professional jobs that they aspired to. They described sport, and the school subject of PE, as enjoyable but inconsequential. Ella, a high-SES European heritage girl in a top-set class exemplifies this attitude.

Ella: I like most sports, yeah, and it's just, I don't really stress about [PE], it's easy for me because you don't have to do well in it

David: What are the subjects you have to do well in?

Ella: Maths and English ... cos they are like the two basic, yeah, learning things so yeah, without them you're pretty much screwed.

Andrew, a high-SES European heritage boy from the same class agreed that "people that get places usually use mathematics, and I want to get places". There was no conflict in Andrew's narrative between doing well in mathematics and enacting a 'sporty' masculinity.

A second group of students, typically socially privileged girls, had a strong academic orientation but didn't like PE or play sport. Given New Zealand's almost religious veneration of sport, such a stance sometimes involved actively resisting family norms. Maraia, a high-SES girl with Māori (indigenous) and European heritage explained "my family is really, really sporty, and so I've always done and been surrounded by sport, but this year I've put my foot down and been like, I don't actually enjoy this, I don't want to do this anymore". Such students overwhelmingly

aspired to professional jobs requiring university education. Like their more athletic 'well rounded' counterparts, they were relying on academic capital for future labour market success. The relative dearth of boys in this group is consistent with the well-documented discursive associations of sport with masculinity (Connell, 2008).

A final group of students, disproportionately Māori, Pacific Island heritage, and low-SES European heritage boys, did not see themselves as 'brainy' enough to be successful in mathematics and other 'academic' subjects. Callum, a low-SES boy with Māori and European heritage, explained:

I'm one of those people that's not really good at all, like, that subjects aren't easy and stuff. So probably the easiest one for me would have to be PE, because I enjoy it and just like give it one hundred percent every time.

Students in this group tended to rate PE as much more important than the 'well rounded' students, and aspired to jobs they viewed as 'physical', such as professional sport (especially rugby), construction labour, and military combat.

Because New Zealand schools publicly recognise both academic and sporting achievements, students who accumulate physical and academic capital receive double recognition and students who do not play sport lose a source of esteem. However, because academic capital is worth more than physical capital in the employment and higher education markets, both groups of students imagine converting their *academic* capital into 'economic capital' when they leave school. The third group, many of whom are already on trajectories of low attainment, will not have this luxury, and are heavily invested in the convertibility of their physical capital. I argue that their conversion strategies yield either a very high risk of disappointment (professional sport), or low rewards (poorly paid jobs). Such students are disproportionately boys from a demographic whose SES and ethnicity make a highly physical, non-mathematical masculinity hard to escape. The wider study seeks to explain such results in terms of New Zealand's post-colonial context, exploring the relationship between indigenous masculinities and school mathematics.

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