**Narrowing the gender gap: Challenges and solutions by Matt Bromley, 04/06/2015**

In March, I had the privilege of addressing [SecEd](http://www.sec-ed.co.uk/article-search/author/133)’s *Pupil Premium and Ofsted: Ensuring Successful Outcomes* *Conference* in Birmingham.

It occurred to me, however, that while our focus on bridging the social and economic divide between students has sharpened as a result of the Pupil Premium [funding to close achievement gaps between pupils from different socio-economic backgrounds], there are many more achievement gaps that require equal attention.

One such gap – that between the attainment of boys and girls – is a perennial issue for schools and one I often see featured in School Improvement Plans and Self-Evaluation Forms.

A caveat: I recognise that every school is different, as indeed is every teacher and every student. It is a universal truth, therefore, that what works in one context might not work so well in another.

I also recognise that there are myriad reasons why attainment gaps exist and, as ever, closing them in theory is always much easier than doing so in practice.

However, I firmly believe that a student’s birth should not be their destiny and that we as teachers and school leaders assume a vital role in levelling the playing field; we must ensure every student is afforded an equal opportunity to succeed in school and in life.

**What are the gaps?**

The OECD says there are five key “gaps” in the educational outcomes of boys and girls – reading skills, reading for pleasure, maths performance, STEM uptake, and STEM careers.

First, boys lag behind girls at the end of compulsory education in reading skills by the equivalent, on average, of a year’s schooling.

Second, boys are far less likely to spend time reading for pleasure.

Third, and in contrast, boys perform better than girls in maths, although the gender gap is narrower than in reading.

Fourth, there remain significant disparities in the subjects boys and girls choose to study, with girls less likely to choose scientific and technological fields of study than boys.

Finally, even when girls choose these subjects they are less likely to take up careers in related fields. This widens the gap later in life in the career and earning prospects of women.

Furthermore, boys in OECD countries are eight percentage points more likely than girls to report that school is a waste of time. Meanwhile, in higher education and beyond, young women are under-represented in maths, science, and computing. In 2012, only 14 per cent of young women who entered university for the first time chose science-related fields of study, including engineering, manufacturing and construction. By contrast, 39 per cent of young men who entered university that year chose to pursue one of those fields of study.

**Why do the gaps exist?**

**Nature**

On the one hand, some people believe that the attainment gap between boys and girls is the result of biological differences. After all, there are more than a hundred genetic differences between the male and female brain.

For example, according to Blum (1997), boys’ brains generally have more cortical areas dedicated to spatial-mechanical functioning, whereas girls’ brains generally have greater cortical emphasis on verbal-emotive processing. As a result, girls tend to use more words than boys and girls tend to think more verbally.

According to Sax (2005), the male visual system (optical and neural) relies more heavily on type M ganglion cells which detect movement, whereas girls generally have more type P ganglion cells which are sensitive to colour variety and other sensory activity. As a result, boys tend to rely more on pictures and moving objects when they write, whereas girls tend to use words that refer to colour and other sensory information.

According to Rich (2000), a girl’s prefrontal cortex is generally more active than a boy’s, and her frontal lobe generally develops at an earlier age.

These are the decision-making areas of the brain (as well as the reading/writing/word production areas) and the difference can lead to girls being less impulsive than boys but better able to sit still and read, and to read and write earlier in life.

According to Gurian and Stevens (2005), boys’ brains go into a “rest state” many times each day. For some boys – especially those with behavioural difficulties – self-stimulating and disruptive behaviours such as tapping a pencil (although it can be symptomatic of emotional or psychological problems in some boys) may reflect male brains trying to stay awake in a classroom that is not well-suited to their kind of learning.

Brain scans have shown that when the male’s brain gets bored, some of his brain functioning shuts down (in other words, there is a drift into a brain state that negates learning and performance). When the female brain gets bored, however, more of her brain functioning stays active. As a result, even when she’s bored, a girl is more likely to retain the ability to take notes and listen carefully.

According to Rich (2000), structural differences in girls’ brains generate more “cross-talk” between hemispheres, leading to better multi-tasking. Boys’ brains, in contrast, tend to lateralise and compartmentalise brain activity. Thus, girls can pay attention to more information on more subjects at any given time, whereas boys tend to pile a lot of information into a single-task focus. In other words, boys concentrate best, in general, when they follow steps A to Z without distraction.

What’s more, Havers (1995) says that boys take more time than girls to transition between tasks. They tend to become more irritable, therefore, when teachers move them continually between activities.

Finally, Taylor (2002) argues that the bonding chemical oxytocin also contributes to the gender gap because, with less oxytocin in the male neural and physiological system, boys tend toward greater impulsivity and aggression. Gurian (1996) adds that boys are more naturally aggressive and competitive than girls, and boys generally gravitate more toward competitive learning and relationships characterised by “aggression nurturance”.

**Nurture**

On the other hand, some people believe that the gender gap can be explained by differences in attitude not biology; aptitude, they argue, knows no gender. According to many international reports on the gender gap in education – most notably perhaps a 2012 OECD report called Closing the Gap: Act now – boys and girls, men and women, when given equal opportunities, have an equal chance of achieving at the highest levels.

In a 2015 paper called The ABC of Gender Equality, the OECD expands on this and argues that gender equality in education relies on addressing not biological differences but differences in “attitude, behaviour, and confidence”.

In other words, gender disparities in performance do not stem from innate differences in aptitude, but rather learned, societal differences in students’ attitudes towards learning and their behaviour in school, from how they choose to spend their leisure time, and from the confidence they have – or do not have – in their own abilities as students.

In fact, the OECD paper shows how the gender gap in literacy narrows considerably – and even disappears in some countries – among young men and women in their late teens and early 20s when attitudes and behaviours mature and level.

In the final analysis, it doesn’t matter whether we believe the gender gaps in education are the result of biology or attitude – or indeed, as seems most likely to me, a nuanced combination of the two. What matters most is that we teachers believe that the gaps can and should be closed.

The OECD cites evidence from the Programme for International Student Assessment (PISA) which shows that, in 2012, 14 per cent of the boys and nine per cent of the girls who were surveyed did not attain the PISA baseline level of proficiency in any of the three core subjects. On the other hand, in the top-performing economies in PISA, such as Shanghai-China, Singapore, Hong Kong-China and Chinese Taipei, girls performed on a par with their male classmates in maths and attained higher scores in maths than boys in most other countries and economies around the world. Hopefully this shows that the gap is not inevitable and can be closed. The big question, therefore, should not be “why” but “how?”.

**How do we close the gaps?**

**Parents**

A student’s home-life is vital to their academic success and so it seems logical to suggest, when looking at ways of closing the gap, that parents have a major role to play. We might assume that all parents give their sons and daughters equal support and encouragement for all of their school work, and articulate equal aspirations for their futures, but PISA results show that this is not always the case. In every country that surveyed the parents of students who sat the PISA test in 2012, parents were more likely to expect their sons, rather than their daughters, to work in a STEM-related field – even when boys and girls performed at the same level in maths. Giving boys and girls an equal opportunity to realise their potential, therefore, demands the involvement of parents who can encourage their sons and daughters.

According to a report by the Joseph Rowntree Foundation called Closing the Attainment Gap in Scottish Education (2014), to help this happen, schools should ensure they have in place effective parental involvement programmes that focus on helping parents to use appropriate strategies to support their children’s learning at home rather than simply seeking to raise aspirations for their children’s education.

**Teachers**

Teachers, too, have a vital role to play by becoming more aware of their own gender biases and how these might affect how they award marks to students. Teachers should encourage more independent problem-solving among their students and should use teaching strategies that demand more of their students, since all students, but particularly girls, perform better in maths when their teachers ask them to try to solve mathematical problems independently.

The Joseph Rowntree report says that teachers should use carefully implemented nurture groups and programmes to increase social, emotional and behavioural competencies. Collaborative work in small groups can also be effective, as can peer-tutoring, meta-cognitive training and one-to-one tutoring using qualified teachers, trained teaching assistants, or trained volunteers.

Mentoring schemes work best when they adhere to particular characteristics associated with efficacy, and after-school activities – such as study support – work best when they are academically focused.

**School leaders**

The Joseph Rowntree report also says that school leaders can help close the gap by developing policies which better create, collect and share knowledge of:

* Interventions that improve the performance of different groups of students.
* Ways to make curriculum design and planning (at school, class and individual level) more nuanced and effective for different groups of students.
* Ways to deploy staff and resources to raise achievement in different groups.
* Methods to monitor and evaluate pedagogies, resources and initiatives for impact on different groups as well as general average attainment.

Funding, the report argues, should be targeted in order to avoid a situation where budget increases in one area are undermined by reduced budgets elsewhere.

**Using research**

In general, the most effective intervention strategies for closing the gap are those which are informed by research evidence and focus on improving attainment by using effective pedagogies, have a shared strategic plan that encompass academic, social and emotional learning, are supported by significant staff development, and are data-driven and consistently monitor impact on attainment,

Moreover, effective strategies involve an investment in high-quality, evidence-informed, context-specific, intensive and long-term professional development.

*This is an adapted piece originally written for SecEd magazine and was first published in June 2015. It is the first of three articles on narrowing the gap.  The second article focuses on strategies to close the gender gap in literacy where boys lag behind; the third article focuses on the gender gap in STEM subjects where girls lag behind.*

[*http://www.sec-ed.co.uk/best-practice/narrowing-the-gender-gap-challenges-and-solutions/*](http://www.sec-ed.co.uk/best-practice/narrowing-the-gender-gap-challenges-and-solutions/)