

¹School Selection by Gender: Why it Works

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Selection in education is traditionally associated with ability or attainment. However, some schools select their pupils by gender. Single-sex schools play a significant role in UK education but what is it about them that continues to attract parents?

Whereas aspirational parents of the nineteenth-century sent their daughters to single-sex schools because there was simply no viable alternative, aspirational parents of the twenty-first century select single-sex schools for their daughters because they consider them to be the best. We know this because of a study undertaken to find out why today's parents choose single-sex schools for their daughters. This study looked at the aggregated results of the *School Pulse* parental satisfaction surveys carried out in 80 independent schools between 2011 and 2013.ⁱ It compared the responses of parents of more than 9,000 girls in 36 girls' schools and 34 co-educational schools, at both junior (up to year six) and senior (from year seven) level and in both day and boarding schools. The responses – from parents with girls in both girls' schools and co-educational schools – were remarkably consistent. It was clear, from the information parents provided about the other schools they had considered before making their final choice that the vast majority looked at both single-sex and co-educational schools. This suggests that whether or not the school was single-sex was not necessarily the 'deal breaker'. Instead, the quality of teaching, pastoral care and extra-curricular provision was far more important in parents' minds and it just so happened that, for them, it was a single-sex girls' school that ticked more of those boxes. The big question – and the one that evokes so much discussion and argument – is a chicken and egg conundrum. Which impact comes first: the single-sex environment or the good teaching? To what extent is excellence in girls' schools down to the fact that teaching is done in single-sex environments and to what extent is it due to their simply being good schools?

The current position of single-sex selective education is a fascinating one. For example, girls' schools today come in many different shapes and sizes. Some are exclusively all-girls others have a predominantly girls-only environment with boys in the nursery and/or sixth-form. However, year after year the top of the A-level league tables is dominated by schools whose sixth-forms are exclusively single-sex. In 2013, for example, ten of the top 15 performing schools were single-sex and half of these were girls' schools.ⁱⁱ Department for Education leaver destination figures, released for the first time in 2014, show that of the top 11 schools for sending students to Russell Group universities, 10 were single-sex, of which eight were girls' schools.ⁱⁱⁱ The same data shows that of the top 11 schools for sending students to Oxbridge, nine were single-sex, of which seven were girls' schools. In both cases, the other schools in the top 11 taught boys-only up to 16 with a co-educational sixth form.^{iv}

One thing is for certain: despite an undeniable decline in the number of UK schools which are exclusively single-sex over the last 20 years, teaching in single-sex groups – for girls *and* boys – is thriving. A number of UK co-educational schools are turning to single-sex teaching in an effort to improve results. One analyst on the subject, education journalist Nick Morrison, reports that:

After looking at test and exam results from every state school in England, researchers at Bristol University suggested boys might do better in English if they were taught in single-sex classes, but maths and science were best taught in co-ed classes.^v

Morrison goes on to cite how two co-educational academy schools are using single-sex classes to provide localised interventions for specific subjects. One example is David Young Community Academy in Leeds which is teaching pupils English, maths and sciences in single-sex classes in order to tackle a culture of low aspirations among girls. Executive Principal Ros McMullen explains: ‘It is about the culture that the children come from. We needed to break that culture and allow girls to be clever.’^{vi} The result is that achievement has risen among both girls and boys, but among girls McMullen says it has ‘rocketed’. Further south, Haywood Academy near Stoke-on-Trent has introduced single-sex classes in maths for middle-ability pupils, the impetus being the reluctance of girls to speak out in mixed classes. As Nick Morrison writes:

Assistant head teacher Mel Roberts says staff had identified that while boys were vocal in group work they were less enthusiastic about independent working. For girls, worried about looking stupid in front of the boys, it was the other way around. The project is still in its first year at the school but early signs are both genders are making better than expected progress.^{vii}

The Independent Schools Council’s 2014 census shows that as many as 40 per cent of all the schools in its membership teach either all girls or all boys between years seven and 11; even at sixth-form level 36 per cent of member sixth-forms are single-sex, with all-girls’ sixth-forms being more prevalent.^{viii} Cast further afield, and you will find that in the United States private single-sex schools thrive and, since the US Department of Education relaxed restrictions in 2006, the number of single-sex public schools has grown rapidly, although their proportion of total schools remains small.^{ix}

Those who are against single-sex education often claim that it is unnatural for girls and boys to be taught in separate schools or even separate classrooms. Critics say that in society and the ‘real world’ men and women must work together and that schools must reflect the reality of the adult world instead of artificially dividing the sexes. These are opinions which those of us who work in single sex-schools can counter with both opinion and fact.

First, the notion that children and younger teenagers should be treated as adults is wrong. Growing up is a tricky business and in the course of those all important, formative teenage years a child’s self-awareness will go through many changes and the veneer of confidence will, on occasion, be alarmingly thin. During this sensitive time, both girls and boys can experience mild to severe anxiety when at the receiving end of over-enthusiastic or judgemental attention from the opposite sex. A recent YouGov poll found that one in three 16-18 year old girls in the UK say they have experienced harassment at school.^x If children are going to grow into confident young women and men they must first of all learn how to be comfortable in their own skins and to have a secure confidence in their opinions and abilities. For girls in particular there is plenty of evidence that single sex-schools are an appropriate environment in which to develop this level of self-confidence. Some of the more robust examples follow.

In January 2014 the OECD announced the results of analysis that found that across most developed countries, boys are better than girls at maths.^{xi} The difference in maths, according to the OECD’s Andreas Schleicher, does not exemplify any innate differences but is driven

by a lack of confidence amongst girls in their maths skills, alongside lower expectations that they will need maths in future careers.^{xii} There is, Schleicher says, a close correlation between expectation and achievement. The same study prompted then-education minister Elizabeth Truss to say that ‘In the past girls have been let down by outdated assumptions about what they are good at.’^{xiii} Anyone may be forgiven for assuming that educating girls alongside boys would eradicate these ‘outdated assumptions’ and result in girls being every bit as likely as boys to study maths and boys every bit as likely as girls to study English. Unfortunately – at least in the UK – statistics trounce this hypothesis. Taking the opposite sex out of the equation for the few hours when young people are in the classroom can remove the obvious distractions and relieve significant pressure. It allows for focus, and experience shows that it gives pupils the space to study what they *want* to study – instead of what they and/or others believe they *should* study. For girls, it also provides time to develop the kind of grit and self-confidence that enables them to hold their own at university and in the workplace, when that time comes. This is a view that is shared by many colleagues who have worked in both co-educational and single-sex schools.

But ultimately these are opinions, albeit those of experienced educators, and, as strongly held as they may be, opinions come relatively cheap. What matters is hard evidence and there is plenty of that to exemplify the benefits of single-sex education. The latest substantial research on the subject undertaken by the Institute of Physics is titled *Closing Doors* and looks at six subjects with big gender disparities. Three of these subjects have a male bias and three a female bias: English and mathematics, biology and physics and psychology and economics.^{xiv} The findings showed that the majority of co-educational schools are failing to counter whatever external factors drive young people to make gender-weighted choices when picking A-level subjects. The study did find both state-funded and independent co-educational schools that were achieving, or at least approaching, gender parity among students taking these subjects at A-level. However, the proportions were relatively low, i.e. 3.9 per cent of state-funded and 22.5 per cent of independent schools co-educational schools.^{xv} What this does show is that it *is* possible to counteract gender stereotyping in subject choice but clearly it’s not something that comes easily to the majority of co-educational schools. The Institute of Physics study observed that the fact that so many co-educational schools can be at or below average on ‘gendered’ subject choices indicates that single-sex schools are less likely to exacerbate gender imbalances. Furthermore, it concluded: ‘Single sex schools are significantly better than co-educational schools at countering the gender imbalances in progression to these six subjects.’^{xvi}

An earlier study by the Institute of Physics, *It’s Different for Girls*, points to the greater propensity of girls in single-sex schools to continue studying physics to A-level.^{xvii} The study explored data from the National Pupil Database to look at progression from key stage 4 to A-level physics in 2011 for girls from different types of school. Physicist Sir Peter Knight’s foreword to the resulting report states that:

In 2011, physics was the fourth most popular subject for A-level among boys in English schools but for girls the subject languished in 19th place. This... report from the Institute of Physics shows that many girls across the country are not receiving what they’re entitled to – an inspiring education in physics. In turn this has led to the poor representation of girls in physics, denying them individual opportunities and contributing to the UK’s shortage in STEM skills.^{xviii}

The Institute acknowledges that other research has already shown that girls’ perceptions of physics are formed outside, as well as within, the physics classroom. It references teachers’ – often subconscious – attitudes towards girls who show an interest in physics as well as the

lack of female physicists on television. It is interesting to note the distinct rise in female academics – such as space scientist Maggie Aderin-Pocock (on the BBC's *The Sky At Night*) – introducing science programmes on UK television screens since the report *It's Different for Girls*, was published.

When examining the influence of school type on girls' take up of A-level physics, *It's Different for Girls* finds that girls who attend single-sex schools – in both the maintained and independent sectors – are more likely to continue studying physics. Specifically, in the independent sector, 4.9 per cent of girls in co-ed schools went on to take A-level physics in 2011 compared to 18.7 per cent of boys, but in independent single-sex schools, 7.2 per cent of girls took A-level physics compared to 19.1 per cent of boys.^{xxix} In the maintained sector the pattern is broadly similar. In maintained co-ed schools 1.8 per cent of girls studied A-level physics compared to 10 per cent of boys, whereas in maintained single-sex schools 4.3 per cent of girls studied physics at A-level compared to 14.9 per cent of boys.^{xxx} Put another way, in independent girls' schools four times more girls study A-level physics than is the case in maintained co-ed schools. Boys who attend independent boys' schools are almost twice as likely (1.9 times) to take A-level physics as boys in maintained co-ed schools. In the maintained sector, girls and boys in single-sex schools are 2.4 times and 1.5 times, respectively, more likely to study A-level physics than is the case in co-ed schools. In independent schools, the percentage of boys taking A-level physics is almost the same whether they are educated in a single-sex or co-ed setting but there is a marked difference with girls, who in independent single-sex schools are almost 1.5 (1.46) times more likely to take A-level physics than girls in independent co-ed schools.^{xxxi}

The Institute of Physics research reflects what the Independent Schools Council (ISC) found when comparing the propensity of girls in Girls' Schools Association (GSA) schools to study STEM subjects (science, technology, engineering and mathematics) and modern foreign languages. Looking at 2012 Department for Education (DfE) data for all girls in England who sat A-levels, the ISC found that girls at GSA schools achieve a disproportionately large share of the top grades in sciences, maths and languages and are effectively propping up these key subjects nationally. Girls at GSA schools are 75 per cent more likely to take maths A-level, 70 per cent more likely to take chemistry, two and a half times as likely to take physics and over twice as likely to take most languages.^{xxii}

GSA girls also achieve far greater A-level success than is the case among girls nationally. In 2012, for instance, over 21 per cent of GSA A-level entries were awarded an A*, as opposed to just 7.9 per cent of entries nationally.^{xxiii}

Across the Atlantic a similar picture presents itself. In the US in the 1990s, Cornelius Riordan, professor of Sociology at Providence College, wrote:

Females especially do better academically in single-sex schools and colleges across a variety of cultures. Having conducted research on single-sex and coeducational schools for the past two decades, I have concluded that single-sex schools help to improve student achievement.^{xxiv}

More recently, UCLA's Higher Education Research Institute conducted extensive research into the differences in characteristics and transition to college of women graduates of single-sex and co-educational high schools.^{xxv} The study compares the backgrounds, behaviours, attitudes and aspirations of 6,552 women leavers from 225 private single-sex high schools with 14,684 women leavers from 1,169 private coeducational high schools. It concluded that there are several areas in which single-sex education appears to produce favourable outcomes for female students, especially in terms of their confidence, engagement and aspirations, most

notably in areas related to maths and science.^{xxvi} Thus, this evidence suggests, the benefits of single-sex education are most significant in areas that have historically favoured men and therefore present a potentially effective vehicle for mitigating longstanding gender gaps.

Other key findings of the UCLA research were that women educated in single-sex schools are more academically engaged. They study more, are more likely to engage in group study and to help fellow students with their studies, and they spend more time talking to teachers outside classes. They have higher levels of academic confidence – particularly in their mathematical ability and computer skills – and a greater interest in pursuing a career in engineering. On this particular point, the research findings state that:

Single-sex school alumnae are more likely than their co-educational school peers to state that they plan to become engineers. The... gap is greatest in the independent schools, where single-sex alumnae are three times more likely than women graduates of co-educational schools to report that they intend to pursue a career in engineering (4.4 versus 1.4 per cent).^{xxvii}

All of this is powerful data that points to the success of single-sex schools in enabling children – and in particular girls – to counter stereotypical choices and expectations in their education. These studies are of particular note because their samples are of significant size making the findings difficult to ignore. A multitude of other studies, albeit with smaller sample sizes, come to similar conclusions. One example, is research into gender differences in the engagement of risky behaviour which tested the proposition that single-sex environments are likely to modify students' risk-taking preferences in economically significant ways.^{xxviii} The study was prompted by the under-representation of women in high-paying jobs and high-level occupations. It sought to determine whether attitudes to risk are innate or shaped by environment. If, for example, the majority of the remuneration in a high-level job is determined by a company's performance, those with a low risk threshold will tend to avoid such jobs. If attitudes to risk were found to be innate, under-representation of women in certain areas might be solved by changing the way in which remuneration is made, whereas if attitudes to risk were found to be influenced by environment, it may be possible to address under-representation through education and training. In a controlled experiment, subjects were given an opportunity to choose a risky outcome, a 'real-stakes gamble with a higher expected monetary value than the alternative outcome with a certain payoff'.^{xxix} The results found that girls from single-sex schools are as likely to choose the real-stakes gamble as boys from either co-educational or single-sex schools, and more likely to do so than girls from co-educational schools. They also found that gender differences in preferences for risk-taking are sensitive to the gender mix of the experimental group in that girls were more likely to choose risky outcomes when working in all-girl groups. The researchers concluded that the findings suggested that 'gender differences in behaviour under uncertainty... might reflect social learning rather than inherent gender traits'.^{xxx}

In Seoul in South Korea – where pupils are randomly assigned to either single gender or co-educational high schools – a study by the University of Pennsylvania found attending all-boys schools or all-girls school to be 'significantly' associated with higher average scores on Korean and English test scores.^{xxxi} The research paper states:

Single-sex schools have a higher percentage [than co-educational schools] of graduates who attended four-year colleges and a lower percentage of graduates who attended two-year junior colleges... The positive effects of single-sex schools remain substantial, even after taking into account various school-level variables such as teacher quality, the student-teacher ratio, the proportion of students receiving lunch support, and whether the schools are public or private.^{xxxii}

Returning to the UK, in a report by Ofsted it was found that girls at single-sex schools are more likely to avoid preparing for ‘stereotypically female’ careers than their contemporaries in co-educational schools. *Girls’ Career Aspirations* was based on visits to 16 primary schools and 25 secondary schools, including 13 single-sex girls’ schools. It found that girls were receiving poor careers education, making it difficult for them to take informed decisions about their future direction, and that the traditional stereotypes were alive and well.^{xxxiii} However, the report also revealed that girls in single-sex schools, particularly those in selective schools, had ‘The most positive attitudes... where most of the girls spoken to asserted that they would definitely consider jobs stereotypically done by men’.^{xxxiv} In these schools Ofsted noted that girls did not view any career as being closed to them and felt that women should be encouraged into roles traditionally held by men.^{xxxv}

This impressive body of findings is gathered from research and analyses that have taken place in both the state and independent education sectors in the UK, as well as from studies in the USA and other countries. It provides irrefutable evidence of what those of us who teach in single-sex schools already know: teaching girls and boys separately has positive consequences for their academic performance, their ability to make non gender-weighted subject and career choices, and girls’ academic engagement and confidence. Furthermore, when we put into a global context the educational opportunities for girls in the UK – with so many countries still failing to leave the starting blocks when it comes to girls’ education – the mix of all-girls, predominantly girls, and diamond model schools (where girls and boys are taught together up to year six, separately to year 11, and together again in sixth-form) as an alternative to the co-educational environment, selective or otherwise, provides a wealth of parental choice which is undoubtedly worthy of celebration. Whether parents are attracted to their single-sex environment or their good teaching, schools which select pupils by gender do so with impressive and noteworthy results and will undoubtedly continue to be an important feature of the UK’s educational landscape.

ⁱ RSAcademics, study of aggregated annual *SchoolPulse* parental satisfaction surveys conducted by individual schools between 2011 and 2013.

ⁱⁱ DfE, ‘Statistics, 16-19 Attainment’, 17 October 2013; A-level results ranked by average points scored per student (schools where the full-time equivalent of fewer than 30 pupils took the qualifications were not included).

ⁱⁱⁱ DfE, ‘Destinations of Key Stage 4 and Key Stage 5 Pupils: 2011 to 2012’, 26 June 2014.

^{iv} *Ibid.*

^v N. Morrison, ‘Single-Sex Education Belongs in the 21st Century,’ *Forbes*, 30 April 2014.

^{vi} N. Morrison, ‘Single-Sex Education Belongs in the 21st Century,’ *Forbes*, 30 April 2014.

^{vii} N. Morrison, ‘Single-Sex Education Belongs in the 21st Century,’ *Forbes*, 30 April 2014.

^{viii} Independent Schools Council, *ISC Annual Census 2014* (based on a survey carried out in January 2014).

^{ix} H. Hollingsworth and J. Bonner, ‘More Public Schools Splitting up Girls, Boys’, Associated Press, 8 July 2012.

^x YouGov, End Violence Against Women Survey, November 2010.

^{xi} OECD, PISA: *Are Boys and Girls Equally Prepared for Life?* 2014.

^{xii} S. Coughlan, ‘Maths Confidence Gap Leaves UK Girls Trailing, OECD Says’, BBC News, 23 January 2014; OECD, PISA: *Are Boys and Girls Equally Prepared for Life?* 2014.

^{xiii} *Ibid.*

^{xiv} Institute of Physics, *Closing Doors: Exploring Gender and Subject Choice in Schools*, December 2013.

^{xv} Institute of Physics, *Closing Doors: Exploring Gender and Subject Choice in Schools*, December 2013.

^{xvi} Institute of Physics, *Closing Doors: Exploring Gender and Subject Choice in Schools*, December 2013.

^{xvii} Institute of Physics, *It’s Different for Girls: The Influence of Schools*, October 2012.

^{xviii} Institute of Physics, *It’s Different for Girls: The Influence of Schools*, Foreword, October 2012.

^{xix} Institute of Physics, *It’s Different for Girls: The Influence of Schools*, October 2012, p.15.

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- ^{xxiii} Ibid.
- ^{xxiv} C. H. Riordan, *Girls and Boys in School: Together or Separate?* New York, Teachers College Press, 1990.
- ^{xxv} L. J. Sax, *Women Graduates of Single-Sex and Coeducational High Schools: Differences in their Characteristics and the Transition to College*, The Sudikoff Family Institute for Education & New Media, UCLA Graduate School of Education & Information Studies, March 2009.
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- ^{xxxv} Ofsted, *Girls' Career Aspirations*, April 2011.