

Single Sex Schooling¹

Terri Thompson & Charles Ungerleider
The University of British Columbia

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Often associated with increasing student achievement and improving the educational experiences for both girls and boys, single-sex schooling has garnered renewed interest among education professionals, researchers, politicians and parents. The purposes of this study were to (a) review recent newspaper articles to determine how the issue of single sex schooling was being defined, and (b) to undertake a systematic review of academic research focussing on single-sex schooling.

Single Sex Schooling in the News

The way that issues are defined by news media often influences how the public, policy-makers, and practitioners view and understand those issues. In order to understand how the issue of single-sex schooling was being defined, an inventory of newspaper articles published between 2003 and 2004 was created using the LexisNexis and Canadian Newsstand databases. Single-sex schooling was defined in five dominant ways: (1) as an educational benefit issue;² (2) as a learning styles issue³ (girls and boys learn differently, thus require different environments); (3) as a choice issue;⁴ (4) as a gender gap issue⁵ (with one hundred percent of these articles arguing or implying that boys are disadvantaged within the current system); and (5) as a distraction issue.⁶

A dominant sub-text in these newspaper articles was the potential for single-sex schooling to address and mitigate the disadvantage of boys.⁷ Single-sex schooling was presented as a means to helping boys improve their concentration, engagement and thus academic achievement in school. Typically, the newspaper articles focussed on the middle-school age group, defining the period as the 'hormonal' years. Boys were identified slightly more frequently than girls as being distracted by the opposite sex.

The distraction issue, however, included two related sub-texts which were tied directly to a single gender. The framing of the distraction issue was tightly bound to the sexuality of girls and to negative behaviours of boys: girls distract boys on a sexual/hormonal level, while boys distract girls with their disruptive behaviour.⁸ The newspaper accounts promoted the

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²See, for example: Alberni Times (2003); Braid (2004); Brueningsen and Grant (2003); Danese (2004); Duffy (2003); Finlay (2004); Grossman (2003); Henry (2003); Hutchison (2003); Knapp and Meyers (2003); Knight (2004); McDougall (2003); Nanaimo Daily News (2003); Nygren (2003); Polak (2003); Reiss (2003); Raspberry (2004); Smyth (2003a); Seidman (2003a); Sokoloff (2003); Times Colonist (2003); Vancouver Sun (2003);

³See, for example: Braid (2004); Brueningsen and Grant (2003); Davila (2004); Dohy (2004); Donsky (2003); Findlay (2003); Kelly (2003); Knapp and Meyers (2003); McDougall (2003); Owens (2004); Polak (2003); The Province (2003); Riess (2003); Schmidt (2003a); Smyth (2003b); Times Colonist (2003); The Vancouver Sun (2003);

⁴See, for example: Brueningsen and Grant (2003); Hutchison (2003); Knight (2004); The Province (2003); Raspberry (2004); San Diego Tribune (2003); Schmidt (2003a); Seidman (2003a); Sokoloff (2003); Smyth (2003c); Teicher (2003); The Vancouver Sun (2003); Wall Street Journal (2004)

⁵See, for example: The Advertiser (2003); Henry (2003); Knapp and Meyers (2003); Markusoff (2003); The Province (2003); Sokoloff (2003); Seidman (2003a) (2003b); Times Colonist (2003); Schmidt (2003a) (2003b); Smyth (2003a).

⁶See, for example: Alberni Times (2003); Brueningsen and Grant (2003); Donsky (2003); Henry (2003); Knight (2004); Nanaimo Daily News (2003); Polak (2003); Reid (2004); Riess (2003); Seidman (2003a); Teicher (2003).

⁷See, for example: Braid (2004); Duffy (2003); Henry (2003); Ottawa Citizen (2003); Schmidt (2003b); Seidman (2003a), (2003b); Smyth (2003a); Sokoloff (2003); Times Colonist (2003); Vickers (2003).

⁸See, for example: Donsky (2003); Polak (2003); Schmidt (2003); Seidman (2003a); Seidman (2003b); Reiss (2003); Teicher (2003).

image of boys performing physically for girls, and girls “primping” and using their sexuality to distract boys. Many of the articles implied that boys were actually more disadvantaged by distraction than girls because boys were already seen to be “behind” the girls academically; whereas, girls (because they were seen to have an academic advantage) were viewed as simply being bothered by boys. In other words, the distraction of boys' behaviour was presented as an annoyance, rather than a 'disadvantage' to girls.

Single-Sex Schooling: What the Research Says

Our review of the academic literature devoted to single-sex schooling was limited to studies concerned with K-12 public, private and/or independent school settings engaged in educating all or a portion of students in a single sex environment. We searched for studies published in English between January 1990 and June 30th 2004 and, when available, the “Peer Reviewed” limiter option was also utilized. Four databases were searched: Academic Search Premier; ERIC; Canadian New Stand CBCA Education and CBCA Reference; CSA Sociological Abstracts.

Articles were initially screened based on titles and abstracts. Duplicate articles identified in different databases were eliminated. This resulted in the identification of 160 articles of potential relevance. To be included the next phase of the project, papers were required to have investigated the effects of single sex classrooms. By “investigated” we meant that the papers set out to test or compare (using any plausible methodology) the effects of single sex classrooms on students. Papers that did not have an evaluative component such as descriptions of programs, policy and discussion papers were excluded. This reduced the number of studies to 48.

We intended that our systematic review of the literature focus on studies conducted in a manner consistent with what is considered to be sound research. We sought research that employed methods appropriate to the nature of the question posed; used systematic, empirical methods that drew on observation or experiment; included measurements or observational methods that provide reliable data; and analyses that adequately supported the general findings.

If claims of causal relationships were made, we believed that they required random-assignment experiments or designs that substantially eliminated plausible, competing explanations for the results that were obtained. We sought studies where the design and methods employed were described in sufficient detail that the study could be replicated. We were inclined toward studies that had been accepted by a peer-reviewed journal or reviewed by qualified, independent experts.

We found few studies which met the criteria of good research. Most studies used samples of convenience. These studies compared single-sex private or denominational schools to public coeducational schools, or made comparisons between Catholic single-sex and coeducational schools only.

The difficulty in comparing single-sex and mixed-sex schools is that existing enrolment in either school type implies pre-existing assumptions on the part of parents about what is best for their children. By the time parents choose a school for their child they have likely contemplated the benefits of the chosen school type; possible detrimental effects of the 'other' type of school; school discipline policies; academic foci; social benefits or deterrents, and so on. One can also assume that these same beliefs have been passed on to the children, either overtly or subtly. Furthermore, teachers and administrators are probably equally as confident in the benefits of their particular schools, thereby creating climates that reflect these beliefs. Thus, it is important for studies to address these concerns, for if these variables are not controlled for the methodology may be considered flawed and the results weak or even invalid and unreliable.

Further concerns arise when researchers examine single-sex and coeducational schooling by comparing public coeducational schools to private, Catholic or Independent schools. There are inherent differences between the public and private school systems, as well as differences in student backgrounds and characteristics. As noted above, pre-existing assumptions, and thus differences, already exist when parents make calculated choices to enrol their child in either the public or private system. As a consequence, studies must attempt to control for these differences if the results are to be considered valid and meaningful in the larger context.

Many studies did not adequately control for the socio-economic, parental, or motivational background or prior achievement of the students. Nor were the studies able to eliminate the influence of teachers or other programmatic changes that might have influenced the outcomes. Most attempts to control for pre-existing differences through the imposition of statistical controls were inadequate. Even when when control had been imposed by statistically equating non-equivalent groups, results were often overstated.

Given that few studies were identified as meeting the criteria of rigorous research, we cannot make conclusive statements about the effects of single-sex school. We can, however, identify common themes in the research: single-sex schooling benefits certain (typically disadvantaged) students' academic achievement;⁹ there are psycho-social benefits for girls in single-sex classes;¹⁰ when given the choice, girls generally prefer single-sex classes whereas boys typically prefer coeducational classes;¹¹ there are no measurable differences between single-sex and mixed-sex schooling on a variety of variables;¹² single-sex classes assist in breaking down sex-role stereotypes and 'genderization' of subject areas, whereas coeducational settings reinforce them.¹³

The academic research devoted to single-sex schooling reflected, albeit imperfectly, the issues defined in the newspaper articles. Many studies examined the possible academic benefit of single-sex environments for students and explored psycho-social effects of subject areas to which males or females were over or under represented. Missing from the research was the strong emphasis or concern about the perceived disadvantage of boys which appears to be so prevalent in the media articles.

Most of the studies concede that the research on single-sex schooling is inconclusive. Yet, there is also a general agreement that single-sex environments add to girls' comfort and engagement in school due to diminished feelings of intimidation and harassment by boys and increased attention from teachers.¹⁴

The research we reviewed is too tenuous to support the organization of single-sex classrooms or schools. However, a number of studies suggest a policy direction worth pursuing. These studies argue that the conditions that give rise to differences in achievement and climate can be addressed without organizing separate classrooms or schools for males and females. They argue that schools need to implement policies and practices which ensure equality of opportunity for males and females and eliminate sex discrimination in instruction and the management of student behaviour.¹⁵

⁹See, for example: Baker and Jacobs (1999); Madigan (2002a), (2002b); Parker and Rennie (1997); Riordan (1998); Seitsinger and Barboza (1998); Singh et al. (1998); Smith (1999); Streitmatter (1998); Wong et al. (2002); Young and Fraser (1990).

¹⁰See, for example: Baker (2002); Blair and Sandford (1999); Campbell and Evans (1997); Crombie et al. (2002); Crombie (1999); Derry and Philips (2004); Dunlap (2002); Granleese and Joseph (1993); Jackson (2002); Jackson and Smith (2000); Madigan (2002a), (2002b), (2002b); Monaco and Gaier (1992); Mulholland et al. (2004); Parker and Rennie (2002), Rennie and Parker (1997); Streitmatter (1997), (1998); Walter (1997); Watson (1997).

¹¹See, for example: Baker and Jacobs (1999); Dunlap (2002); Jackson (2002); Jackson and Smith (2000); Leger and Forgasz (1994); Lirgg (1994); Strange and Oakley (2003); Streitmatter (1997); Treanor et al. (1998); Warrington and Younger (2001).

¹²See, for example: Baker (2002); Brutsaert (2002); Dunlap (2002); Gillibrand (1999); Gilson (1999); Harker (2002); Jackson and Smith (2000); Leger and Forgasz (1994); Lepore and Warren (1997); Lirgg (1994); Manger and Gjestad (1997); Marsh (1991); Marsh and Rowe (1996); McEwen and Knipe (1997); Mulholland et al. (2004); Robinson and Smithers (1999); Smith (1996); Ticker (1992); Warrington and Younger (2003).

¹³See, for example: Blair and Sandford (1999); Bornholt (2001); Brutsaert (1999); Colley and Cromber (1994); Granleese and Joseph (1993); Norfleet James and Richards (2003); Stables (1990); Thompson (2003).

¹⁴See, for example: Baker (2002); Blair and Sandford (1999); Campbell and Evans (1997); Crombie et al. (2002); Crombie (1999); Derry and Philips (2004); Dunlap (2002); Granleese and Joseph (1993); Jackson (2002); Jackson and Smith (2000); Madigan (2002a), (2002b); Monaco and Gaier (1992); Mulholland et al. (2004); Parker and Rennie (2002); Rennie and Parker (1997); Streitmatter (1997), (1998); Walter (1997); Watson (1997).

¹⁵See, for example: Datnow et al. (2001); Lee (1998); Lee et al. (1994); Marino and Meyenn (2000); Yates (1998)

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