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## Article abstract

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# Single-Sex Schooling at an Elite Independent School: A Multi-Methods Case Study

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*This article focuses upon the milieu of single-sex schooling within an elite independent school in a Canadian urban centre. This research served as an exploratory and critical examination of single-sex schooling in a specific context, and considered its relevance, pedagogical effectiveness, and ability to meet its purported goals. Using an interpretative methodological framework, and employing a multi-methods case study design, the purpose of this research was to investigate the strengths, limitations, and possibilities of single-sex schooling in a particular educational context as informed by its students, parents of students, graduates, and teachers. We found little evidence to support the idea that single-sex schooling overwhelmingly impacted student academic or social development. Implications for practice at schools offering single-sex schooling are addressed and focus upon the importance of gender-inclusive schooling; the school as the key, rather than the school's single-sex classes; and addressing boys' behaviour.*

*Cet article se penche sur un milieu de scolarisation non mixte au sein d'une école privée élitiste d'un centre urbain canadien. Cette recherche a permis d'examiner de façon exploratoire et critique la scolarisation non mixte dans un contexte précis, ainsi que sa pertinence, son efficacité pédagogique et sa capacité à atteindre les objectifs escomptés. Par l'utilisation d'un cadre méthodologique interprétatif et le recours à une étude de cas multimodale, cette recherche poursuivait l'objectif d'examiner les forces, les limites et les possibilités de l'enseignement en milieu non mixte, dans un contexte éducatif particulier, comme le décrivent les élèves, leurs parents, les diplômés et les enseignants. À la suite de cet examen, peu de preuves viennent soutenir l'idée que la scolarisation en milieu non mixte a un impact considérable sur le développement scolaire et social des élèves. L'article traite des implications pour la pratique dans les écoles offrant une scolarisation non mixte et se concentre sur l'importance d'une scolarisation inclusive des genres, sur l'école comme étant la clé plutôt que les classes non mixtes, et à considérer le comportement des garçons.*

Single-sex schooling has a long history within many Western educational contexts (Gurian et al., 2009; Tsolidis & Dobson, 2006). Certainly, this has been true within Canada. Here, despite an initial mid-20th century decline in the offering of single-sex schooling—as most public education institutions modernized to only offer co-educational (co-ed) programming—the late-20th century saw (sometimes experimental) returns to single-sex schooling in some public, independent, and private school programs (Krueger, 1998; Sanford & Blair, 2002).<sup>1</sup> The primary impetus for this resurgence of single-sex schooling in the late-20th century was the burgeoning belief among many

that contemporary schooling environments were failing girls and young women (Campbell & Sanders, 2002; Jackson & Bisset, 2005).

Following the revival of single-sex schooling opportunities was the emergence of scholarly interest in this kind of schooling context and program structure. Perhaps not surprisingly, many researchers did find evidence of some positive outcomes for girls and young women learning in single-sex classes and/or schools. These outcomes were related to several important variables, including self-esteem, academic success, educational retention, post-secondary pathways, and career aspirations (Cherney & Campbell, 2011; Lee & Bryk, 1986). Overall, that body of research was largely equivocal, at best (Mael et al., 2004). More specifically, some researchers found no evidence for such positive outcomes, while others found resultant negative ones (Fabes et al., 2013; Mael et al., 2004; Thompson, 2003).

Still, these sorts of research findings can inform the introduction, continued offering, or eventual cessation of sex-segregated classes and/or schools. But, given the numerous unique features possible within the many different types of single-sex class and/or school environments (e.g., consider public/independent/private, girls/boys, elementary/secondary, rural/urban, etc.), such research ought to rely upon, and provide evidence to, those who are most intimately involved with teaching and learning within particularized educational contexts—especially if that research is meant to inform the offering of single-sex programs within those specific contexts and/or others like it.

It is in this milieu that we recently investigated single-sex schooling within an elite independent school in a Canadian urban centre. Using an interpretative methodological framework, and employing a multi-methods case study design, the purpose of this research was to investigate the strengths, limitations, and possibilities of single-sex schooling in a particular educational context as informed by its students, parents of students, graduates, and teachers. A singular question guided this research: What do students, recent graduates, parents, and teachers perceive as the benefits and drawbacks of single-sex schooling?

Much of the literature about single-sex schooling focuses on external factors shaping student experiences, namely class and sex and/or gender, classroom conditions for equity, curricula, parental influences, race, and socioeconomic status. What is lesser known, however, are perceptions from within the single-sex schooling community in how members (i.e., current/recent students, parents, and teachers) view the opportunities and limitations of such education. This study provides an in-depth examination of such a case. More particularly, this research served as an exploratory and critical examination of single-sex schooling in a specific context and considered the viewpoints of invested stakeholders regarding its relevance, pedagogical effectiveness, and ability to meet its purported goals. The lack of agreement amongst participants about the perceived benefits of single-sex schooling reveals a passive overreliance on its programming structure rather than an understanding of pedagogy focused on sex and/or gender equity, inclusion, and career readiness. With our examination, we offer subsequent recommendations, as they relate to pedagogies, practices, and policies, as part of a broader analysis of the school's sustainability and responsiveness to students' needs and interests.

### **A Cautionary Terminology Note: Single-sex (as opposed to Gender-based) Classifications**

It is important to recognize that the “single-sex” label adopted within this article (and by many-to-most educational institutions offering single-sex schooling) refers to one's biological sex. Such

a classification comes with obvious limitations, most notably related to its categorization of students as belonging to one of two binary dimorphic possibilities: female or male (Hyde et al., 2019). This, instead of a classification by one's (more inclusive) gender identity—something that would invite trans, non-binary, and gender nonconforming (including gender fluid) possibilities (Knisely & Paiz, 2021). So, though most research literature and single-sex school personnel view this classification as a binary biological sex-naming exercise (or a binary gender identity-naming one), it is important to be ever mindful of how contemporary and progressive views of gender might, or should, disrupt and challenge such classifications. In other words, we are hopeful this cautionary note related to this single-sex terminology within education and educational research reminds all that, with it, some students are effectively denied their identities (and, relatedly, their humanity). This cautionary note, and related concern, cannot be overstated.

### **Relevant Research Literature**

Though single-sex schooling's rationale often leans upon its purported ability to address sex and/or gender equality or equity goals for girls and young women (see Gurian et al., 2009), some have also introduced single-sex schooling as a mechanism to address the unique educational and social needs of boys and young men (Martino et al., 2005; Younger & Warrington, 2006). Whether in a responsive effort to meet the needs of female or male students (or both), single-sex schooling research has oftentimes focused upon outcomes related to a host of variables, including academic achievement, sex and/or gender norms, self-concept(ions), and socialization. Here, we offer an overview of the relevant research literature related to three broad categories: academic achievement and other variables; classroom dynamics; and influences on schooling experiences and socialization.

#### **Academic Achievement and Other Variables**

Despite the existence of data that ostensibly demonstrates learning differences between girls and boys (see Abubakar & Bada, 2012; O'Reilly & McNamara, 2007), much of the historic literature base rests upon spurious claims (Bigler & Signorella, 2011; Määttä & Uusiautti, 2020) often disrupted by inconclusive and contradictory research findings (Tsaousis & Alghamdi, 2022). For example, Else-Quest et al. (2010) and Ajai and Imoko (2015) have shown negligible sex differences in the results of standardized mathematics tests. Several studies have suggested that girls outperform boys in language-based subjects and verbal tests (e.g., Deary et al., 2007; Spinath et al., 2010), while boys outperform their girls in STEM-related subjects (Lakin, 2013; Strand et al., 2006). Conversely, Voyer and Voyer (2014) found that girls appear to have higher school grades in language-based subjects and STEM subjects than do boys.

Research results into academic achievement are mixed, so much so that, on its whole, the body of available research literature has failed to establish an unequivocal relationship between single-sex schooling and academic achievement (Else-Quest & Peterca, 2015; Mael et al., 2004; Robinson et al., 2021). Plenty of school performance data does not suggest that single-sex schooling affords girls (or boys) significant academic achievement benefits (see Gray & Wilson, 2006; Hoffman et al., 2008), but there is some evidence suggesting that some students in some contexts may experience academic benefits from such a single-sex learning environment. These other academic benefits include academic risk-taking (Chambers, 2005), on-task time (Wallace et al., 2020), and positive attitude (about learning) developments (Daly & Defty, 2004).

Sex has been examined not only in terms of school grades but also in terms of other aspects of educational experience. For example, Bugler et al. (2015) have suggested that girls have higher motivation levels and better adaptation. Similarly, Ghazvini and Khajepour (2011) have found that girls showed more internal locus of control in academic matters than did boys. They also found that boys tend to use learning strategies to a lesser degree than do girls, and that girls take greater responsibility for their academic failures.

### **Classroom Dynamics**

Single-sex schooling certainly has the potential to enable students to engage in classroom and school activities without also being marred by various gender stereotyping assumptions (e.g., on the part of fellow students; Dunstan et al., 2017). Thompson and Ungerleider (2004) have concluded that there are psychological and social benefits for girls in single-sex classes and when given the choice, girls generally prefer single-sex classes whereas boys typically prefer co-educational classes. More specifically, single-sex classes assist in breaking down sex-role stereotypes and *genderization* of subject areas, whereas co-ed settings reinforce them.

Still, debate continues in the research literature about whether single-sex schooling challenges or reinforces gender norms and assumptions (Kombe et al., 2019). Positive findings have been found in single-sex STEM-related classes, where girls' learning and performance have disrupted gender norms associated with particular subject areas being deemed as challenging for girls and young women (see Cherney & Campbell, 2011). Moreover, girls in these single-sex STEM-related classes have also come to see STEM as a female domain (Kombe et al., 2019).

There is some documentary evidence suggesting single-sex classes may have an impact upon girls' self-concepts (see Wills et al., 2006; Wilson et al., 2013), though the relationship is equivocal. For example, Wills et al. (2006) found girls in single-sex classes were able to develop enhanced confidence and self-esteem. Conversely, Wilson et al. (2013) found that girls participated more when in single-sex classes, but also found that girls had lower levels of self-concept than did girls in co-ed classes.

### **Influences on Schooling Experiences and Socialization**

The forces that lead to, or stymie, productive learning experiences among students is an area with good standing in the research literature. Noting that it is difficult to adequately define schooling success, the literature reveals a spate of forces, both internal and external, that affect the quality of academic outcomes. Walberg's (1982) Theory of Educational Productivity identified nine factors, including selectively, family influence, financial situation, students' competence and aptitude, and learning facilities that hold sway over academic outcomes, furthermore, Hattie (2013) identified the student, the home, the school, the curricula, the teacher, teaching and learning approaches, and the classroom as the key areas that contribute to student learning. More recently, attention has been paid to socio-economic status (e.g., Harju-Luukkainen et al., 2020), where recent evidence has indicated that both parental wealth and income are strongly associated with children's educational choices and performance (Al-Muslimawi & Hamid, 2019; Duncan et al., 2011, 2017).

Related to family background, including race and ethnicity, Breen and Jonsson (2005) have concluded that racialized children perform differently in school where, as Menezes et al. (2022) noted:

racialised learners were found to be less likely to seek additional educational supports from their educators, devising strategies of “getting by” without direct contact with lecturers. White middle-class students on the other hand were more likely to seek out and demand additional help, with stronger peer support systems, social capital, increased willingness to use organisational support systems and an overall more collaborative approach to learning. (p. 2)

The corpus of literature reveals that educational outcomes are dependent on a complex and intersecting set of forces (Bešić, 2020). With respect to socialization, some scholars have found that single-sex classes have potential positive and negative impacts. For boys, socialization in single-sex classes has resulted in more male bonding as well as “character development,” though it has also resulted in stereotypical attitudes towards girls and women (Datnow et al., 2001). Understanding that some single-sex schooling socialization outcomes may prove positive, what is clear is that single-sex schooling will not socialize students to become less sexist (Bond et al., 2013), nor can it reverse years of socialization of students (and teachers) with respect to gender norms and roles (Hubbard & Datnow, 2002). Certainly, students in single-sex schools will need to interact with peers of all gender identities outside of school, and so arguments related to the lack of important socialization (with one another) possibilities may be unfounded.

## **Methodology**

### **The Case, and the Participants**

Case study research enables researchers to explore an issue, or case, so that they may develop a detailed understanding of a particular phenomenon (Creswell, 2012). To gain a deep understanding of the single bounded case in this research—Blessed Mother Catholic School’s (BMCS’s) single-sex schooling program—data were collected from multiple participants and sources.<sup>2</sup> In so doing, the research attended to case study guidelines offered by Creswell (2003), Stake (1995), and Yin (2002). For example, this case study had data collected from multiple sources to provide an in-depth perspective (Creswell, 2003), it examined the particularity and complexity of a single bounded case (Stake, 1995), and the data gathering exercises were enacted in a linear but iterative process (Yin, 2002).

BMCS is one of over 150 independent Catholic schools in 33 countries that are a part of the same global network of schools. This network, established in 1800, has five common core goals: faith in God; respect for intellectual values; social awareness and action; community building as a Christian value; and personal growth. Founded in 1849, BMCS is a non-residential school with over 500 students and a student to teacher ratio of 7:1. The school also boasts a faculty complement where almost 70% have advanced university degrees (i.e., post baccalaureate). The elementary grades (K–6) are co-ed and have a tuition cost of \$17,500 (2022–2023). The secondary grades (7–12) are single-sex (a very small number of secondary classes are co-ed, due to resource limitations) and have a tuition cost of \$19,360 (2022–2023). The female secondary students’ program is called Jones Academy and the male secondary students’ program is called Kent Academy; these operate as “parallel” programs on the same campus.

A variety of participants (“stakeholders”) from the BMCS community were recruited to participate in this study. These participants included current secondary students (grades 7–12), parents (of current secondary students), recent graduates (i.e., from the past 10 years), and

teachers. All individuals from these four groups were invited to participate. In all, 232 of 280 (82.5%) invited students participated, 125 of 560 (22.3%) invited parents participated, 139 of 483 (28.8%) invited graduates participated, and 26 of 41 (63.4%) invited teachers participated. Of the student participants, 129 were female, 87 were male, 13 were non-binary/gender fluid, and three were trans. Altogether, there were 522 participants.

### **Data Sources, Collection, and Analysis**

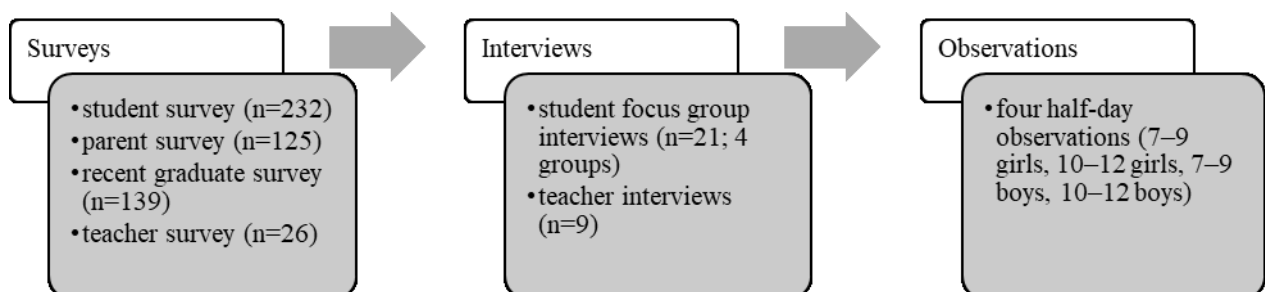
Utilizing a mixed-methods sequential explanatory design (see Creswell, 2012; Ivankova et al., 2006), data were collected through three different means: surveys, interviews (individual and focus group), and observations (see Figure 1). As the focus of this study was on the perceptions of students, recent graduates, parents, and teachers regarding single-sex schooling experiences, the sample identified for the study was purposeful and included consideration for members' roles as well as their participation and/or responsibilities in the school and their durations of attendance or service. A comprehensive review of the research literature on single-sex schooling was conducted, prior to data collection, and helped inform the design of the survey and interview questions. That review included 70 empirical studies and involved peer-reviewed articles from 12 countries involving elementary and secondary grades. Results of this review revealed the inconclusive nature of single-sex schooling and its claims regarding the positive effects it has upon academic performance, post-secondary preparations, and career readiness (see Robinson et al., 2021). Informed by this analysis, the interview and survey questions were designed to allow participants to identify their understanding of the benefits and drawbacks, if any, of single-sex schooling.

### **Surveys**

The first phase of data collection was completed by surveying four stakeholder groups within the BMCS community: students, parents, graduates, and teachers. More specifically, a 15-question, four-point (1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree) Likert-type online survey that examined matters of school experience, single-sex classes, and academic and social development was employed. A uniform survey was distributed to each participant group, with only slight alterations to account for matters of participant question/language relevance. Participants were asked their perceptions of single-sex schooling related to its influence on learning experiences; social, moral, and leadership development; sense of belonging; quality of

Figure 1

#### *Data Collection Sources*



relationships; religious aspects of BMCS; preferences of classroom composition; academic achievement; classroom environment; and post-secondary plans. Surveys were completed anonymously via Qualtrics, an online data collection and analysis software package. These survey data were subject to basic descriptive statistical procedures. That is, we determined frequency scores and means for all the survey responses, and we also made inter-group comparisons.

## **Interviews**

The second phase of data collection was completed by conducting semi-structured individual or focus group interviews with two stakeholder groups: students and teachers. Participating students ( $n = 21$ ) were interviewed in four separate grade-level focus groups at the school (7–9 girls, 10–12 girls, 7–9 boys, 10–12 boys). The sample was diverse, in terms of age, grade, and length of enrolment. The following questions were asked:

- What grade are you in? How old are you? What subjects do you most enjoy? What will you do after high school?
- For an outsider like me, what should I know about BMCS? What makes it unique?
- What drew you to the Fountain/Barat program at BMCS?
- Describe a typical day as a BMCS student.
- What are the best aspects of BMCS?
- What do you most like about being in classes with only female/male students?
- What do you most dislike about being in classes with only female/male students?
- Is it true that girls learn differently than boys? Or in your experience do boys and girls learn differently?
- What are you “missing out” on as a BMCS student?
- What benefits have you received as a BMCS student?
- If you could, what aspects of BMCS would you change?
- Do you plan to graduate from BMCS? If not, why not? If yes, why so?

Participating teachers ( $n = 9$ ) were interviewed individually, with these interviews occurring at the school or via Zoom. The sample was diverse in terms of roles and responsibilities in the school and years of service. The following interview questions were asked:

- What grade/subject do you teach? How long have you been a BMCS teacher/administrator?
- What drew you to BMCS? What makes BMCS unique?
- Describe the environment/dynamic in a BMCS classroom.
- Describe your pedagogical approach.
- What are the best aspects of the BMCS program?
- If you could, what aspects of the BMCS program would you change?
- What are the benefits of a single-sex academic experience for students?
- Is it true that girls learn differently than boys?



- What do students gain by attending BMCS?
- What do students ‘miss out’ on at BMCS?
- Looking ahead, what does BMCS need to do to ensure sustainability?

All interviews were audio recorded and transcribed for future analysis. Interview data were analyzed through an inductive process whereby the initial data were narrowed down to important groups from which participants’ perspectives and experiences could be derived (Mills & Gay, 2016). The three steps, as described by Mills and Gay (2016), were completed and repeated during the transcribing process: (a) establishing familiarity with the data and identifying possible themes; (b) describing the data in depth; and (c) categorizing and coding pieces of the data. By coding and categorizing the data according to methods outlined by Creswell (2012) and Miles and Huberman (1994), dominant themes emerged, allowing for analysis and interpretation. Searching for commonalities, original insights, and patterns, responses were read multiple times while we coded elements into emergent themes.

### **Observations**

The third phase of data collection was completed by way of engaging in four half-day observations of classes as they moved throughout a normal school day (Jones Academy: 7–9 girls, 10–12 girls; Kent Academy: 7–9 boys, 10–12 boys). Situated as passive observers (Genkova, 2020) and using an established observation protocol, we recorded descriptive field notes that were factual and comprehensive (e.g., about the setting, participants, dialogues, activities, behaviours). These field notes also included reflective notes related to, for example, our resultant thoughts, ideas, questions, and inferences (Johnson, 2016). These documented observations attended to the following sorts of areas: student-to-student dynamics, teacher-to-student dynamics, classroom structures and routines, and pedagogical approaches. Observation data were also analysed by searching for similarities, differences, and recurring ideas. Summary statements, supported by these observations, were drafted and reviewed (by co-researchers) before being finalized.

### **Ethical Considerations**

All research protocols for research involving human participants were observed. Our university’s Research Ethics Boards found that this research was in full compliance with Canada’s *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. Also, research approval was given by the school’s administrators responsible for approving and monitoring in-school research projects.

### **Limitations**

This research relied heavily on participant self-assessment. Accordingly, the possibility that survey or interview participants offered exaggerated and/or inaccurate responses exists. Interview participants, in particular, may have also been swayed by a social desirability bias, given the interview facilitation approach. As such, this action could have skewed the results of this inquiry. Additionally, interview participants were asked questions specific to their employment, schooling, and community experiences. Accordingly, every effort was made to provide safe and ethical conditions for discussion, but it is possible that some participants may have guarded or

altered their responses. Furthermore, and despite our deliberate attempts to remain as neutral as possible, there is a chance that interviewees were influenced, in any number of ways, by the interviewer.

## Findings

### Surveys

Several differences between various stakeholder participants were observed in the survey data (see Table 1). First, most students (71.1%) believed that being in single-sex classes meant they were “missing out” on other school experiences with fewer parents (48.8%) and teachers (26.9%) identifying this to be the case. Additionally, although only a minority of students (38.1%) believed that their single-sex classes helped with their own social development, most of their parents (71.0%) and teachers (88.5%) believed this to be the case. Most participants in all stakeholder groups shared that BMCS enabled students to become more caring, learn about right and wrong, and develop leadership capacities. However, students did not share the same positive outlook on single-sex classes’ role in these regards. Only 31.2% thought it contributed to them becoming caring individuals, only 34.8% thought it contributed to their learning about right and wrong, and only 45.5% thought it contributed to their leadership development. In some of these three areas, most parents and/or teachers did believe the single-sex classes played a positive role (e.g.,

Table 1

*Stakeholders’ Survey Responses (% Strongly Agree or Agree and Mean Likert Score [1–4])*

|   | Students      | Parents       | Graduates     | Teachers      |
|---|---------------|---------------|---------------|---------------|
| Single-sex schooling results in “missing out” on other educational experiences  | 71.1%<br>2.04 | 48.8%<br>2.62 | 62.9%<br>2.29 | 26.9%<br>2.85 |
| Single-sex schooling helps personal social development                          | 38.1%<br>2.80 | 71.0%<br>2.08 | 60.4%<br>2.29 | 88.5%<br>1.65 |
| Single-sex schooling helps personal academic achievement                        | 55.1%<br>2.37 | 75.2%<br>1.94 | 68.4%<br>1.99 | 60.0%<br>1.92 |
| Co-ed schooling is preferred over single-sex schooling                          | 66.7%<br>2.14 | 42.1%<br>2.55 | 36.3%<br>2.65 | 60.0%<br>2.28 |
| BMCS enables students to become more caring individuals                         | 66.5%<br>2.30 | 85.6%<br>1.88 | 87.1%<br>1.82 | 84.0%<br>1.84 |
| Single-sex schooling at BMCS enables students to become more caring individuals | 31.2%<br>2.72 | 45.8%<br>2.48 | 42.4%<br>2.55 | 68.0%<br>2.28 |
| BMCS enables students to learn about right and wrong                            | 69.5%<br>2.29 | 83.3%<br>1.90 | 83.2%<br>1.86 | 88.0%<br>1.76 |
| Single-sex schooling at BMCS enables students to learn about right and wrong    | 34.8%<br>2.72 | 47.9%<br>2.37 | 38.9%<br>2.60 | 68.0%<br>2.20 |
| BMCS enables students to develop leadership capacities                          | 75.9%<br>2.09 | 85.8%<br>1.87 | 85.9%<br>1.68 | 88.0%<br>1.64 |
| Single-sex schooling at BMCS enables students to develop leadership capacities  | 45.5%<br>2.52 | 64.2%<br>2.23 | 68.4%<br>1.74 | 88.0%<br>1.72 |
| The religious aspects of BMCS are important                                     | 31.8%<br>2.98 | 61.8%<br>2.29 | 25.1%<br>3.03 | 57.7%<br>2.46 |

teachers and caring and learning about right and wrong, parents and teachers and developing leadership capacities), while in others they did not (e.g., parents and graduates and caring and learning about right and wrong). For all these stakeholder groups, more participants attributed credit to BMCS, rather than to single-sex classes, for students becoming more caring, learning about right and wrong, and developing leadership capacities.

Additionally, female and male students (as well as non-binary, gender-fluid, and trans students) offered different responses to several survey questions attending to the single-sex schooling environment at BMCS (see Table 2). Female students indicated that they preferred learning with single-sex peers more and that they felt more comfortable being in single-sex classes than did their male counterparts. They were also more inclined to report that single-sex classes helped them produce better academic results. Somewhat paradoxically, most female students (67.4%) still suggested they would prefer being in co-ed classes—something that was consistent with the male students (70.1%). Insights into this inconsistency may be gleaned from female students' responses during the focus group interview in which participants identified a desire to be socially prepared for life (i.e., university) following graduation from BMCS and opportunities to be with male students would help. It should be noted that male students also emphasized this idea during the focus group interview.

## Interviews

### *Students, in Focus Groups*

Our analysis of coded and categorized student interview data resulted in the identification of six most salient emergent themes. These six included the following: single-sex schooling and female students; desire for a co-ed experience; negative impact on social development; role of religion at BMCS; complex classroom environments; and exclusion at BMCS. With student participants providing insights into their perceptions of advantages and limitations related to single-sex schooling, responses were considered in connection to their age, life experiences, and within the conversational nature of a focus group interview.

**Single-sex Schooling and Female Students.** Female students described, by and large, their contentment and preference with a single-sex educational approach. This contentment and preference appeared to be largely related to classroom management and the concern (and/or

Table 2

#### *Single-sex Schooling Student Responses, by Gender (% Strongly Agree or Agree)*

|  | Female<br>(n=129) | Male<br>(n=87) | Non-binary,<br>gender-fluid, trans<br>(n=16) |
|--|-------------------|----------------|--|
| Q11. I prefer learning with peers of the same sex.                         | 60.5%             | 44.7%          | 68.8%  |
| Q12. I am more comfortable being in single-sex classes.                    | 69.0%             | 55.8%          | 68.8%  |
| Q13. I would prefer being in co-educational classes.                       | 67.4%             | 70.1%          | 43.8%  |
| Q14. Being in single-sex classes helps me produce better academic results. | 61.2%             | 47.2%          | 50.0%  |

observation) that male students disrupt, through unruly behaviours, the wider learning environment for all (e.g., “all-boy classes are very distracting”). Recognizing their own potential to positively address their male peers’ misbehaviours, some female students suggested that their presence, alone, could offer a sort of remedy (e.g., “girls can put a filter on the boys,” “girls can hold boys accountable”). Additionally, many female students described single-sex classes as spaces where sensitive gender-based discussions could happen without fear of judgment or embarrassment (e.g., “we have freedom to be ourselves,” “we can have more open conversations about difficult topics without [boys] there”). Despite the notion of enhanced academic outcomes not consistently mentioned, it seemed clear that the notion of classroom comfort was of considerable appeal to female students.

**Desire for a Co-ed Experience.** The desire for BMCS to pivot to a co-ed model was a frequent source of conversation, often evoking passionate commentary from students. Male students stood firmly in support of co-ed classes, while female students appeared less committed, for some of the reasons noted earlier (e.g., “there’s not really much benefit to segregating students, cause there’s no point, they say it’s like socially beneficial, but I don’t see any point”). For male students, social development, a tempered classroom environment, and behavioural regulation (of their peers and selves) were some of the primary draws for a co-ed model (e.g., “you’re stuck with like 11 people and that’s pretty much your social life, like, like that’s pretty bad,” “I think girls call things out way more”). Despite many female students expressing their satisfaction with the existing single-sex model, some appeared interested, to varying degrees, in a co-ed experience, particularly in senior high (grades 10–12). For example, as one female student shared, “I feel like if you’re from grade 10 to 12 you have the same perspective as the people around you. Like, we all want the same things. No one thinks differently. In grade 7 and 8 we all got along but looked at things differently. Now, it’s all the same.”

**Negative Impact on Social Development.** The impact of single-sex schooling on social development emerged as a major interview theme. Both female and male students described a variety of perceived hindrances to social development that come from learning in a single-sex environment (this was also found in the survey data, where 38.1% of students agreed that single-sex schooling helps personal social development). Uniformly, all students shared a concern that all manners of social interactions with members of the “opposite” sex may become challenging and marked by an awkwardness stemming from a lack of practice (e.g., “[boys] are not learning social skills,” “[this is creating] awkward people”).<sup>3</sup> Furthermore, many students, across all interview groups, looked to the future—where collaboration between the sexes was expected to be a required skill at post-secondary institutions and, later, the workforce (e.g., “in university we will have to work with one another, and some people won’t know what to do”). Accordingly, some pondered if BMCS students would exhibit difficulty working, in collaborative settings, with members of the opposite sex.

Furthermore, and relatedly, some students described the presence of toxic masculinity in the school and expressed concern about its perpetuation in all-male settings without female students’ interruptions. More specifically, a “boys will be boys” mantra was a major theme throughout focus group interviews, which students viewed as something being widespread throughout Kent Academy (the boys’ school). For example, as one student explained, “I hear a lot of inappropriate jokes like stuff, you shouldn’t like, you should know better to be talking about, because it’s offensive. I can probably count on my hands how many decent boys my age I know.” Students suggested that this was both fostered and cultivated from the absence of female presence and the subsequent self-monitoring that male students lack as a result.

Student perceptions of these class differences give the impression that such challenges can only be overcome with co-ed for boys and single-sex for girls, suggesting that a solution might be to sacrifice a few girls to help keep boys in line to allow the remainder of girls to succeed. From our perspective, it is important to consider that classroom composition alone, whether single-sex or co-ed, does not foster positive social development. As such, purposeful efforts on social development education, particularly teaching and management strategies, must be made to disrupt gender norms.

**Role of Religion at BMCS.** Virtually all students, in certain terms, expressed their displeasure with the presence and mobilization of religion at the school (this was also found in the survey data, where 31.8% of students agreed that the religious aspects of the school were important). Acknowledging that BMCS is part of a larger Catholic BMCS network, many students described the religious aspects of the school as something enforced on students, divisive, blind to history, and, ultimately, unnecessary (e.g., “the Catholic agenda is pushed on us,” “they expect us to pray first thing in the morning,” “it’s [Christianity] is forced and enforced on us”). Additionally, some students expressed concern that the school’s youngest students face coercive indoctrination through religion classes and Bible study. For many students, the religious elements of the school appeared to be of more appeal to their parents than they did for them. Interestingly, all students supported removing religion from the BMCS program, including at the elementary level. Such a move, one student noted, might attract more students to the school.

**Complex Classroom Environments.** BMCS classroom environments were largely described in a dualistic manner. On one hand, students recounted spaces marked by strong and supportive friendships, and invested and caring teachers (e.g., “it’s a close-knit environment,” “teachers are welcoming”). On the other hand, they described a hyper-competitive, grades-driven environment capable of inducing stress and anxiety, and where bullying behaviours were normalized (e.g., “it’s a stressful academic environment,” “you want people to do bad[ly] on a test so your grades appear better,” “it’s become a rat race”). Incidentally, 55.1% of survey respondents agreed that single-sex school helps academic achievement. Additionally, many students explained that teacher-student interactions were dependent upon the class roster, where female students were met with stern and more traditional teachers, while male students encountered teachers who were less stern and more forgiving (e.g., “their [boys’] teachers are less ‘old-school,’” “they [boys] have ‘slack’ discipline,” “teachers are way harder on Jones [female] students”).

**Exclusion at BMCS.** Despite many students remarking on their largely inclusive experiences as members of a welcoming and close-knit community, some also shared, very passionately, their objections to the school’s exclusion of some (in and outside of the school). Mostly related to the tuition cost’s logical consequence of privileging those with economic power and agency, students believed the resultant lack of diversity due to such exclusion would impact their own understandings about and abilities in their broader lives (e.g., “it skews their perception of reality,” “they’re sheltered from the ‘real world’”). In addition to recognizing the “lack of diversity that exists between classmates,” one student acknowledged that although BMCS “makes a commitment to gender inclusivity, it does the exact opposite” through its single-sex schooling approach.

### ***Teachers, Individually***

Our analysis of coded and categorized teacher interview data resulted in the identification of four most salient emergent themes. These four included the following: academic and social benefits of

single-sex schooling for female students; impact of single-sex schooling on male students; (lack of) diversity at BMCS; and school identity and tensions with tradition(s).

**Academic and Social Benefits of Single-sex Schooling for Female Students.** Many teachers saw value in a single-sex learning experience for female students. The shared rationale for this support was largely related to observed outcomes related to improved academic achievement and increased self-confidence (88.5% of teachers agreed that single-sex schooling helps academic achievement). With respect to academics, many teachers commented that in the absence of male peers, female students were more engaged in class, took more academic and social risks, and attained better grade outcomes (e.g., “girls have the potential to go higher [in single-sex classes],” “girls can embrace their intellectual potential,” “[girls] can find their voice in single-sex classes”). Teachers suggested male students can serve as a distraction, and even a detriment, to female students’ learning (e.g., “without them [boys], they can focus on their work, and they have less stress”). By removing male students from the classroom environment, some argued, female students could also exercise academic agency and gain a sense of empowerment and leadership (e.g., “they can open up more and exhibit more leadership qualities”).

When reviewed in detail, the interview transcripts revealed that all participating teachers believed there were academic benefits for female students under a single-sex teaching approach. Furthermore, several teachers commented on a perceived increase in self-confidence for female students in a single-sex classroom (e.g., “they are more comfortable and confident [in single-sex classes],” “they are ‘free’ to be themselves and are more confident and willing to take risks”). Without male students, many teachers commented on a willingness by female students to engage in sensitive and personal topics without fear of judgement or embarrassment (e.g., “classes are more relaxed especially because one, the classes are smaller but two, you’re around your own friends who you know won’t judge you and there’s more of a support system there”).

**Impact of Single-sex Schooling on Male Students.** Despite the claims of benefit of single-sex schooling for female students across the completed interviews, the impact on male students remained a matter of great uncertainty. Many teachers, when explicitly asked, struggled to locate learning differences, beyond wide generalizations, between female and male students and, in many cases, expressed concern that male students face considerable disadvantages from the practice. For example, one teacher shared, “boys won’t monitor themselves as much when girls aren’t in the room,” while another asked, “what will be the impact of not seeing and working with girls?”).

Many teachers held the perception that male students benefit from the behaviour regulation (e.g., classroom outbursts, bullying, physicality) that typically comes in a co-ed classroom, where female students’ disapproval holds influence over potential misbehaviours (e.g., “boys will ‘monitor’ themselves when girls are around, to protect their ‘image’,” “the girls temper the boys, and rein in their behaviour”). Furthermore, some teachers suggested that male students might face social deficits from prolonged periods away, in a classroom setting, from their female peers. These deficits, it was mused, could manifest in difficulty working collaboratively with female colleagues, forming romantic attachments, and the development of gender equitable behaviours (e.g., “I see sexism in this building, in the halls and classrooms,” “universities will expect that their students can work together, male and female”). Incidentally, no teachers commented on any academic benefits for male students in single-sex classes.

**(Lack of) Diversity at BMCS.** The topic of school diversity, both in terms of students and staff, was a consistent presence in all teacher interviews. In particular, several teachers noted the lack of socio-economic diversity among students, resulting in the emergence of a specific,

homogenous student profile described, by teachers, as affluent (e.g., “they simply aren’t exposed to some of the broader issues in public schools,” “BMCS students only ever get to interact with a certain subset of society,” “the school is not that diverse ... there may be some tension between the social justice mandate of the school and its lack of diversity”). The socio-economic status of BMCS students had, it was noted, advantages (particularly as they relate to world travel and awareness of current events), but many expressed concerns that a lack of socio-economic diversity distances and, subsequently, inadequately prepares students for the realities of modern society (71.1% of students agreed that they are “missing out” on educational experiences as students at the school). Additionally, some teachers noted a lack of racial diversity among the school’s teaching staff at levels exceeding those found in the public school system (e.g., “the same, our students are the same, our teachers are the same”).

It is worth noting that two interviewees commented on the school’s attempts to provide exposure to social diversity, outside of the school, through volunteer work. Although this was lauded, concern was also present that these activities could be interpreted as tokenism and without substantive educational value. For example, as one teacher noted, “I think that we could be in the trenches a little bit more especially considering the background of BMCS and I think that there’s a bit of sanitizing that goes on in terms of what the students are exposed to.”

**School Identity and Tensions with Tradition(s).** When asked about the future of BMCS, the notion of identity emerged as a frequent talking point. Specifically, some teachers noted that BMCS was wrestling with its own history and traditions, and that it was, relatedly, struggling to “find its place” in the 21st century (e.g., “I think we could achieve our goals in a way that doesn’t make everything about gender”). As one teacher explained, BMCS needed to (re)consider its own ambitions, related to touting an identity rooted in tradition or progressivism—two largely mutually exclusive ambitions. Tensions exist for teachers who might have more progressive ideas about teaching—within a school still heavily rooted in tradition. For example, some teachers found that some “students want a traditional stand-and-deliver [instructional] approach,” despite teachers being keen to introduce more experiential and learner-centred teaching methods.

With respect to the school’s origins, one teacher described a school that was once reserved for female students, steeped in Roman Catholic tradition, and modeled after the English boarding school, but is now somewhat co-ed (in a very limited sense) and multi-denominational. Furthermore, this teacher anticipated future changes and predicted a shift to a fully co-ed approach. The result of these changes, some noted, has been a loss of core identity that could influence enrollment, public perception, and school experience.

## **Observations**

### ***Girls in Jones Academy***

Class sizes were very small (10–15) with almost all students being girls (two identified as trans, and others presented as possibly being non-binary or gender-fluid). All students were highly engaged in all classes, and students seemed to be genuinely supportive of one another, across several occasions. For example, they were consistent and generous with their praise of their peers’ expressed ideas and products. The students leaned upon one another, in a positive community-oriented manner, throughout the classes. For example, even while working independently, students reached out to seek assistance from, or aid, others—always, as appropriate. All the classes

had a consistent community feel/orientation, whereby peer-encouragement was commonly demonstrated. Students seemed genuinely happy throughout classes, as their smiling and laughing were commonly observed—again, as the students remained on task. It was impossible to locate shy and/or disengaged students as all seem to be engaged and part of the lessons and classroom community.

Teachers' engagements with students were positive and respectful. Teacher instruction could not be categorized as traditional stand-and-deliver teacher-directed learning in most classes. That is, there was evidence across all teachers' classes of more progressive student-centred learning (e.g., inquiry tasks, peer-teaching, group learning).

### ***Boys in Kent Academy***

Class sizes were very small (9–17) with all students being boys. All students seemed to be included in class activities, though in some of the classes they were demonstrably off-task, acting loudly and boisterously with little evidence of focused attention. These classes were characterized by plenty of callouts and students yelling (and, seemingly, little concern by the teacher about it). Still, almost all were similarly included in these acts. There was only evidence of a single student in junior high (grades 7–9) who was not equally engaged in the classroom happenings, whatever they were (and he seemed content to work independently). In senior high (grades 10–12), more students were disengaged, and more were not part of an observable community (where half the class sat together, and half sat alone).

Teachers' engagements with students were again positive and respectful. Teacher instruction could not be categorized as traditional stand-and-deliver teacher-directed learning in most classes. Again, there was evidence across most teachers' classes of more progressive student-centred learning (e.g., inquiry tasks, peer-teaching, group learning).

## **Discussion**

After considering our results from these three data sources, we offer the following discussion on what we see as four of the most important areas for BMCS to consider: gender-inclusive schooling; the school as the key, rather than the school's single-sex classes; addressing boys' behaviour; and the opportunity for inclusion of larger social issues dealing with images of sex roles and behaviours as well as socio-economic privilege in this community.

### **BMCS as a Gender-exclusive Schooling Context**

Our initial cautionary note about the limitations of the single-sex schooling terminology (and practice) ought to be revisited considering our findings. Again, of the 232 student participants, 13 self-identified as non-binary or gender-fluid and three identified as trans. We understand, too, that some of these 16 students may have been dishonest with these responses. However, conversations with teachers and administrators confirmed that some were “out” with these identities, and some other students were presumed to possibly have these gender identities. So, we are certain some of these identities are honest accounts (and we would prefer to give all students here the benefit of the doubt).

Certainly, the three trans students could be “accommodated” by allowing them to attend classes in their gender identity-appropriate school programs, with their cisgender peers (trans



girls in Jones and trans boys in Kent). And conversations (with teachers and administrators) and school site observations seem to suggest such an accommodation was possible and/or made. However, for students with more fluid and/or non-binary gender identities (like the 13 who identified as non-binary or gender-fluid), where are they to go? Which school program—the girls' Jones Academy or the boys' Kent Academy—is where they ought to go to feel welcome? Though some teachers and administrators, when asked, suggested BMCS could accommodate gender diversity, they could only really accommodate trans students, as described above. In its present structure, and as one student fairly noted, BMCS cannot offer a gender-inclusive schooling experience to all its current students.

### **BMCS Itself (Rather than its Single-sex Classes) as the Key Context**

BMCS, partly through its single-sex schooling model, aims to provide students with opportunities for personal social development, becoming more caring citizens, learning about right and wrong, becoming leaders, and achieving academic success. Most students, themselves, did not believe the single-sex schooling model enables any of these idealized outcomes—except for academic success. Moreover, for these other four outcomes, the majority believed that the school, itself, could be credited with helping them. Parents, graduates, and teachers agreed with this point that the school was the more important influencer upon these outcomes. Still, it is noteworthy that these three other stakeholder groups all gave greater credit to the single-sex schooling model for its ability to deliver on providing students with opportunities for becoming more caring citizens, learning about right and wrong, and becoming leaders than did current students.

The lone purported outlier (academic success) is supported by some others who believe that single-sex schooling can help students achieve greater academic success (e.g., see Eisenkopf et al., 2015). However, though students, parents, graduates, and teachers all believed that single-sex schooling would lead to improved academic success, this is a minority finding in the research literature (though, curiously, continues to be touted by many single-sex schooling advocates). That is, this is a common misperception of single-sex schooling. The preponderance of evidence suggests that single-sex schooling does not improve girls' (or boys') academic performance (Bigler & Signorella, 2011; Eisenkopf et al., 2015; Hayes et al., 2011; Pahlke & Hyde, 2016; Signorella et al., 2013). So, these views at the specific BMCS site are yet to be substantiated by any experimental or quasi-experimental research; this may prove valuable or necessary if single-sex schooling is to continue. If BMCS administrators were to consider co-ed programming as a secondary school model, they might also consider research literature (and some of their own stakeholders' advocacy for single-sex schooling) and offer girls-only STEM classes (e.g., mathematics and/or sciences).

Additionally, so many (student and teacher) interview participants suggested BMCS was a most welcoming and caring learning community, where students could be themselves, take risks, and grow. This school ethos exists within (single-sex) classes but it also exists outside of them (e.g., in co-ed elementary classes, in co-ed spaces and activities, and in co-ed outreach/volunteer opportunities). BMCS, by almost all accounts, can achieve many of these goals without also separating the girls from the boys. It is possible for the school to still adhere to many of its traditional practices, values, and goals—and move towards co-ed programming.

### **Managing Boys' (Mis)behaviours**

Despite the suggestions herein that single-sex segregation is exclusive and unnecessary, we also

find it necessary to acknowledge and discuss the consistent observation related to boys' behaviours, and their potential impact upon girls' learning. Just as female students suggested that their male peers would likely distract them (and that many boys are observably unruly and disruptive), teachers said the same. Our observations supported this assertion (in junior high classes). In those classes, any students (girls or boys) who wished to actively engage would have undoubtedly been "drowned out" by the boisterous happenings. So, we believe the female students' concerns were founded—particularly because their teachers believed the same, and we saw just what they were referring to in our observations of junior high boys' classes. These concerns and observations are supported in the literature too. Indeed, some theorists have suggested that offering girls their own single-sex classes enables them to be free of the off-putting and distracting misbehaviours of their male peers (Wills, 2007).

Related to this concern is the potential of female students to "temper" these sorts of misbehaviours. Female and male students, as well as their peers, believed this would be a logical consequence of introducing co-ed learning opportunities. And research seems to support the position that classroom behaviour is better in co-ed classes than it is in boys-only classes (Herr & Arms, 2004). Also aligned with our findings, previous research has also supported the view that female students' presence, alone, lessens boys' misbehaviours (DeBare, 2004). Still, leaning upon this as a sort of rationale for considering co-ed classes risks burdening female students, unnecessarily and unfairly, with "policing" tasks. Clearly, we do not mean to paint all boys with the same broad brush here—most behave in most classes. But, any moves to co-ed schooling ought to address these concerns and observations rather than ignoring them.

### **Consideration of Larger Social Issues at BMCS**

Rather than being a single-sex issue, some of the limitations at BMCS reveal the presence of larger social issues dealing with images of gender roles and behaviours on a larger scale in this community. The classroom observations employed in this study affirmed some of what participants acknowledged about student behaviours but, we note, these classroom visits were limited to a single day in the school.<sup>4</sup> What participants' perceptions revealed about the ups and downs of single-sex education at BMCS was belief in a program structure that enabled probable student success upon graduation from the school. The solution is not to think of a co-ed structure as the remedy but to think more deeply about how children and youth are taught (formally and informally) about social interactions in general. The perceptions of students, parents, and teachers reveal mixed opinions about whether students do better academically or socially in response to single-sex schooling. At a school like BMCS, the opportunities for single-sex and/or "gendered" education through school-wide actions are plentiful and have the potential to disrupt issues of neurosexism (Eliot, 2019) related to how girls and boys learn. Underpinning this approach is an understanding that a single-sex structure on its own cannot disrupt normative narratives and any purposeful groupings by sex must be embedded in shared understandings of pedagogical practices focused on equity.

One of the more important aspects of the study, and one not made explicit by participants, is the issue of school choice. Students are not forced to attend BMCS and, indeed, they must pay dearly to attend. Families are sending their children there for reasons other than single-sex schooling; these other reasons are largely connected to ensuring enhanced opportunities for children to succeed in a myriad of postsecondary studies and subsequent careers. Viewing school choice through a lens of social mobility reveals what the Organisation for Economic Cooperation

and Development (OECD; 2018) has described as a broken social elevator in how “there is a particular lack of mobility at the bottom and at the top of the social ladder—with “sticky floors” preventing upward mobility for many and “sticky ceilings” associated with opportunity hoarding at the top” (pp. 2–3). Like the need for opportunities for further gender education at BMCS are the possibilities for acknowledgement of social inequalities and the impact of opportunity hoarding on society (OECD, 2018).

## **Conclusion**

Our initial guiding research question was “What do students, recent graduates, parents, and teachers perceive as the benefits and drawbacks of single-sex schooling?” There are several factors informing the success of students within this school making it impossible to suggest that single-sex schooling, as a program structure, is the ingredient that influences academic or social development. The community is largely similar socio-economically and shares similar religious traditions, beliefs, and social codes. Further, the teachers in this school, 70% of whom have higher degrees, along with a low-class size ratio all contribute to the student academic achievement and positive social development. Given these factors, arguably even without the factor of single-sex schooling, the students at BMCS would continue to succeed.

Given our findings, we think students would likely see the same sorts of results if they were enrolled in co-ed classes within the same school. We also believe the single-sex structure negatively impacts students’ understanding about what is fair and just with respect to gender identity and categorizations (we also concede our views here are not likely also held by all within the BMCS school community).

So, we offer suggestions for practice—at BMCS and schools like it. With respect to practice, BMCS should stop categorizing students as female and male and should, therefore, begin offering co-ed classes. They may consider continuing to offer STEM classes to those who identify as female (as a choice, where students opt into an all-girls class). The “other” class would be a co-ed class, even if most or all students were boys (this structure welcomes students with all gender identities). This model exists elsewhere and is worthy of consideration. With respect to teacher pedagogy, BMCS may review efforts currently being made by teachers to include content and practices that challenge ideas about how girls and boys learn with particular emphasis on gender education. Based on what they learn they may develop new school-wide strategies to promote understanding of gender diversity/equity within the school and beyond. Also, BMCS should share research (i.e., this research as well as meta-analyses of single-sex research) with important stakeholder groups (namely students, parents, and teachers) so that all may come to know the “myths” of single-sex schooling (particularly related to its influence on academics). Finally, if BMCS is to move towards some-or-all classes becoming co-ed, some purposeful and focused attention must be placed upon addressing boys’ behaviour. Without such an effort, the school risks having its girls lose their current positive learning environment so that boys can improve upon theirs. A newfound homeostatic co-ed class might make the learning environment better for boys but—without a plan—it will only be worse for girls.

Given our learning from this research, we also offer some implications and suggestions for future research. First, any work related to single-sex schooling will inevitably bump into claims about its academic benefits. Despite the presence of this issue in the wider research literature, and in this study, what remains unclear is the degree of influence some external forces (e.g., socio-economic status, parental and school expectations, students’ intrinsic motivation) may have upon

academic achievement. These forces were apparent on the periphery of this study, but not explicitly explored, and could serve to add a nuanced understanding of the interplay between single-sex schooling and academic outcomes. Second, the claim that female students, in co-ed settings, modify the behaviour of their male peers emerged as a major theme in this research. However, and as some participants noted, this presupposition is fraught with generalizations, stereotypes, and even sexist assumptions. Accordingly, a qualitative study that explores the origins of this perspective could add important insights to future discussions about gender relations in classroom contexts.

Lastly, and as we suggested, we are hopeful this research will find an audience of practitioners and researchers beyond this very localized and unique context. Our intention was not to completely dismiss single-sex schooling as an educational pathway but, rather, to deepen the well of knowledge associated with its claims, practices, and outcomes—some of which are muddy and contradictory. We recognize, and are sympathetic to, the complexities of single-sex education but our hope is for a more reasoned and evidence-supported discourse so that students, and their families, make the best possible educational decisions. That is, we believe this research is especially relevant to educational contexts like this one—and, we know, there are many.

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## Notes

1. Herein, an independent school is a not-for-profit school without public funding and a private school is a for-profit school without public funding. Both require parents to pay tuition.
2. A pseudonym is used for the school, and for units within the school.
3. We recognize that the use of “opposite” sex contributes to the problematic binary dimorphic possibilities we describe within this article. We use it here, and elsewhere, as it is oftentimes used by participants, and it adheres to the actual dichotomous language currently used by BMCS.
4. The COVID-19 pandemic limited the research team to a single school visit.

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