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School selectivity and socioeconomic and
academic stratification in metropolitan Sydney
and Melbourne

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School selectivity and socioeconomic and academic stratification in Sydney and Melbourne

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Abstract

Socioeconomic and academic stratification are two forms of inequality produced through various mechanisms in Australia. This research focusses on one such mechanism, selective schooling in metropolitan Sydney and Melbourne. Unlike ordinary government schools that enrol students based on their residential location, entry into selective schools is determined by students' academic performance in competitive entrance exams. Sydney and Melbourne have the most selective schools in Australia, but the two systems vary in terms of the number of selective schools and the selection mechanisms used. This research utilises administrative data to map and compare the socioeconomic profiles and academic performance of fully and partially selective schools, as well as private and non-selective government schools using a framework of geographical local markets, or school 'clusters'. The findings reveal social and academic stratification associated with school selectivity. Fully selective schools enrol the highest proportions of socioeconomically advantaged students and are the highest performing, followed by private and partially selective schools. Non-selective government schools have the lowest share of advantaged students and are the lowest performing. It is argued that selective schooling reconfigures the socioeconomic composition of schools at a system level across both metropolitan contexts, as well as within local school markets. These stratification effects highlight that selective schooling, as it operates in both metropolitan contexts, does little to provide a fair opportunity for all students.

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Introduction

This research aims to compare and contrast the socioeconomic and academic profiles of selective and non-selective schools in metropolitan Sydney and Melbourne. The central question that guides this investigation is: What is the contribution of selective schooling to social and academic stratification in urban school systems?

This research defines and conceptualises 'school selectivity' as school, organisational and government-devised processes of academic selection that extend beyond those of ordinary schooling. Although families and students opt into or 'choose' to take part in selective schooling, these processes place additional demands upon them, through which they are implicated into rigorous competition with other school choosers for a place within a school or academic stream that comprises predominantly high-achievers and promises better outcomes than non-selective schooling.

Based on this definition, schools can be classified into four categories:

- 1) Fully selective schools are government schools that select all students prior to enrolment through a competitive entrance exam (sometimes in combination with past school achievement records, interviews or written applications).
- 2) Partially selective schools offer academically streamed and mixed ability classes and are attended by selected students who reside outside of local catchment areas and local students.
- 3) Non-government, high-fee independent schools or 'private schools' as they are referred to in this research.
- 4) Non-selective government schools, or 'public schools'.

This paper collectively refers to fully and partially selective schools as 'selective schools'. Catholic schools are also non-government schools, but in line with previous Australian research which seeks to address similar questions (Drew, Bernardelli, & Kortt, 2020; Ho, 2018) are not included in the analyses.

Australia's selective schools are well known for consistently producing some of the highest final year secondary school outcomes (Bolton, 2018) and thousands of children sit the entrance exam each year (Smith, 2017). The official goal of selective schools is to offer opportunities 'for all' academically talented students 'from a diverse range of socioeconomic and cultural backgrounds' (Victoria Government, 2020), regardless of where they live. Selective schools espouse an ethos of merit and equal opportunity. The entrance exam comprises aptitude style questions which are intended to test students' raw, natural abilities and private tutoring is discouraged to prepare for entrance exams (New South Wales Government, 2020). Despite these intentions, selective schools enrol predominantly socially advantaged students from ethnic minority backgrounds (Ho, 2018). There are some important factors that contribute to the social and cultural composition of selective schools. Firstly, students' academic abilities and performance often goes hand in hand with their social background (Bourdieu & Passeron, 1990; Connell, 2007; Marks & McMillan, 2003). A discussion of the myriad of contributing factors for why this is the case lies beyond the scope of this paper (see for example, Lareau, 2002). Broadly, highly educated parents impart upon their children, various forms of knowledge, values and attitudes that predisposes them towards school success (Bourdieu, 1998). Parents' own success in schools and the attainment of qualifications also means that they are better positioned and more confident in navigating challenges with schooling more than less educated parents (Ball,

2003). Despite intentions for a meritocratic and equal system of selection, academic selection can thus produce social selection and hence, stratify schools.

The notion of an 'open', meritocratic selective school system that rewards the talented and hardworking also relies on equal cultural and social participation in selective entrance exams. However, it has been observed that the appeal of selective schools is not equally spread across social and cultural groups (Ho, 2011). Writing about higher education, but arguably useful in the context of selective schooling, Posselt and Grodsky (2017) state that there is 'stratification on the pathway to and through' (p. 7) academic selection. This statement is a useful way of understanding some of processes involved in participation and admission of selective school students.

There are intersecting cultural and social elements that shape the pathway 'to' selective schools, for example, the preferences of high SES parents from ethnic minority backgrounds to pursue educational opportunity through selective schools rather than private schools (Campbell, Proctor, & Sherington, 2009). Further, university educated families (Stacey, 2015) and ethnic migrant parents' (Ho, 2019; Watkins, 2017) proclivity for utilising private tutoring and coaching also means that they are also better prepared to get 'through' competitive exams to secure a place in selective schools.

The social selection associated with academic selection 'to and through' selective schools has come to light in a recent review of selective schooling in New South Wales (NSW Government, 2020). The report highlights that 59 per cent of applicants have at least one parent with a bachelor degree or above and are from high socioeconomic (SES) backgrounds. The gap between high and low SES students widens further upon selection, with 64 per cent of selected students considered to be high SES. Hence, New South Wales selective schools' selection and admission processes appear to provide better outcomes for socioeconomically advantaged students. In the United States, Roda and Wells (2013) argue that despite seemingly 'colourblind' school choice policies, differences in familial and cultural motivations, enacted within a policy framework of school choice and context that sees an increase of academically selective schools, manifests as social and ethnic stratification between academically selective and competitive schools compared to non-selective public schools.

At the same time, entrance exams are not the only form of school selectivity. For example, private schools and high-performing government schools select their students through high-fees and local catchment zoning, respectively. Windle (2009) argues that amid the political valorisation of 'school choice', which positions parents as consumers within a quasi-market, schools increasingly compete for high-performing students by offering academic streams and specialist programs, which make them 'visible' to parents as 'schools of choice' (p. 233). Finn and Winkler (2009) underscore that 'the choice movement rests in significant part on the family's right to choose the best education for its children and [...] on the *school's right* to make certain academic demands on children and families' (p. 3, original emphasis). Fully-selective and partially selective schools are thus two aspects of a much larger and complex picture of selectivity that permeates across school sectors.

Researchers commonly compare and contrast the socioeconomic profiles of fully selective versus non-selective schools (Ho, 2018; Kenway, 2013). Moreover, research conducted overseas (Abdulkadiroğlu, Angrist, & Pathak, 2014; Clark, 2010; Coe et al., 2008) and in Australia (Huong & Ryan, 2018) generally shows small increases in selective school students' final year exam outcomes. On the other hand, exploring the extent of socioeconomic and academic stratification

of students in early secondary schooling as it relates to a broader framework of school selectivity based on closely located schools is a less common approach. This research addresses this gap by utilising location-based ‘clusters’ comprising one each of fully and partially selective schools, as well as private and public schools in metropolitan Sydney and Melbourne. The cluster or local market approach utilised in this research, distinct from system-wide comparisons overlaid by a broader framework of selectivity, aims to bring nuance to the current scholarship on selective schools. Further, comparing and contrasting two distinct jurisdictional systems of selective schooling in Sydney and Melbourne aims to highlight how differences in selection processes may shape the socioeconomic composition of schools, identifying areas for future policy influence.

Research context: Selective schooling in New South Wales and Victoria

New South Wales and Victoria have the most selective schools compared to other Australian states. Most selective schools in both states concentrate in the capital cities, Sydney and Melbourne. To contextualise this research, this section outlines and compares the key processes through which students are selected in each state.

New South Wales

New South Wales has 22 fully selective schools, which enrol their students at Year Seven. The main method of selection occurs through a standardised exam, alongside students’ primary school assessments and reports. Students choose up to three preferred selective schools and are allocated to schools based on their academic performance and demand for individual selective schools. Student performance is ranked and the top performers are allocated to their first preference selective school, and so on until all selective school places are filled. Saliiently, New South Wales selective schools are uncapped and can take any number of applicants from any primary school. New South Wales also has 25 partially selective secondary schools offering academically streamed classes within mixed ability schools (New South Wales Government, 2020). Students also sit an academic entrance exam to determine their enrolment into partially selective schools.

Victoria

In contrast, Victoria has just four fully selective schools, Melbourne High School, Mac.Robertson Girls’ High School, Nossal High School and Suzanne Cory High School. Victorian selective schools also enrol their students in Year Nine, rather than Year Seven. Similar to New South Wales, students’ performance on a standardised entrance exam constitutes the key form of selection into Victorian selective schools. Students submit preferences for up to three selective schools, to which they are assigned based on academic performance according to their overall rank among applicants.

Some Victorian admission processes attempt to increase equity in access to selective schools. Unlike New South Wales selective schools, selective schools in Victoria have a ‘five per cent rule’ and can only enrol up to five per cent of students from any one feeder secondary school. Further, 10 per cent of student enrolments for each selective school are allocated for students from low-income families or those who identify as Aboriginal or Torres Strait Islander.

Although not directly referred to as ‘partially selective schools’ the Selected Entry Accelerated Learning (SEAL) schools are the Victorian counterpart of partially selective schools in New South Wales. SEAL schools were overseen by the Victorian government, but have operated independently since 2014 (SEAL Academy, 2020). SEAL schools offer academically streamed classes for high-achieving students within government high schools. Like fully selective schools,

SEAL schools select their students based on their academic performance on an entrance exam. Some SEAL schools also require students to undertake an interview and present references from previous teachers. Once selected and enrolled, students in the SEAL program undertake English, Maths, Science and Humanities with other high-performing students and the remainder of their classes with the general group of students in their year level. SEAL is an accelerated academic program and students complete Years Seven to Ten in three, rather than four years. The fourth year allows students to take up additional Victorian Certificate of Education (VCE) subjects or university level subjects. There are currently 52 SEAL schools operating in metropolitan and regional Victoria (SEAL Academy, 2020).

Literature review

The effect of academic selection upon the social stratification of schools is well documented in countries with highly marketised school systems such as the United States (Frankenberg & Siegel-Hawley, 2011; Miron, Urschel, Mathis, & Tornquist, 2010; Scott & Holme, 2016) and the United Kingdom (Gorard & Siddiqui, 2018). Similarly, research in Australia demonstrates that the socioeconomic composition of fully selective schools differs from that of non-selective schools (Kenway, 2013).

Ho (2018) draws on an administrative index of school socioeconomic advantage, the Index of Community Socio-Educational Advantage¹ (ICSEA) to explore the social profiles of fully selective schools compared to private and non-selective government schools in Australia, but focussing particularly on New South Wales. Ho (2018) highlights that selective schools comprise six out of the ten most socio-educationally advantaged secondary schools in New South Wales. This is more than high-fee private schools, with four in the top ten. The report also showed that fully selective schools have high ICSEA values than non-selective schools in their local area. Drawing on socio-educational advantage (SEA) data, Ho's (2018) report also highlighted that 73 per cent of students enrolled in New South Wales selective schools are from the top quartile of socioeconomic advantage and only two per cent are from the lowest quartile. The report also shows similar patterns in selective schools' socioeconomic profiles in Victoria, Queensland and Western Australia. The case of partially selective schools however, has received very little analytical attention from researchers in Australia (Hunt & Merrotsy, 2010).

In terms of academic performance, it is well documented that selective schools are overall high-performing, but the degree of academic stratification between different types of selective and non-selective selective schools is not consistently demonstrated in the literature. Unsurprisingly, studies also show that selective schools are high-performing compared to non-selective schools, but the degree to which they stretch the abilities of selective students is relatively inconclusive (Christie & Griffin, 1970; Crook, Power, & Whitty, 1999; Jesson, 2000; Jesson & Taylor, 2001; Prais, 2001; Yang & Woodhouse, 2001). Comparing the achievement of students as they enter selective schools to their final year outcomes through 'value-added' paradigms is a common approach to evaluating the effectiveness of selective schools (Abdulkadiroğlu et al., 2014; Clark, 2010; Coe et al., 2008). Such research indicates that selective schools contribute towards small increases in students' outcomes on final year secondary exams

¹ The ICSEA is school-level indicator, constructed by incorporating in a multitude of school and parental factors such as parental education, earnings, occupational status, school location and the proportion of Indigenous students attending the school. The average ICSEA for Australian schools is 1000, with a standard deviation of 100.

(Coe et al., 2008; Glaeser & Cooper, 2012). Similarly, a recent study of three of the four fully selective schools in Victoria (Houng & Ryan, 2018) finds that selective school students obtain final year exam scores which are two and a half percentile points higher than non-selective school students who narrowly miss out on entry into selective schools.

The school choice literature helps to understand and conceptualise some of the underlying factors which may give rise to socioeconomic and academic stratification as it relates to school selectivity. Parents in general seek high performing schools for their children (Burgess, Greaves, Vignoles, & Wilson, 2009). Parents often make decisions about their child's school based on academic outcomes as well as the socioeconomic composition of schools (Campbell et al., 2009; Rowe & Lubienski, 2017). Those who have attended university themselves are often drawn to selective schools for their academic reputations (Stacey, 2015), which they see as important for university enrolment, occupational attainment and financial security (Ho, 2019).

Windle (2015) conceptualises the processes and outcomes of parental politics around school access as 'socially restrictive' since parents who are able to choose and are often successful in gaining a place for their children in high performing and high-demand schools, such as private, selective and high-performing government schools, are usually relatively socially and economically advantaged. His research and that of others (Campbell et al., 2009), highlights that high SES families with the financial capacity to afford high school fees and private tutoring are better positioned to enrol their children into high-demand 'schools of choice' compared to low SES families. Croxford and Raffe (2007) refer to socioeconomically segregated schools as forms of 'social closure', whereby within the enclosed sites schools effectively 'sequester resources, talent or advantage' (Teese, 2013, p. 32). The corollary of these processes is that non-selective schools become the default option for low SES parents without the means to participate and compete with high SES parents for high-demand and high-performing schools. In effect, these non-selective or low-performing schools become 'socially exposed' (Windle, 2015) to greater social and academic challenges which stem from disadvantage.

This research aims to contribute new and nuanced insights to the scholarship of selective schools and the impacts upon socioeconomic stratification in three key ways:

- 1) by considering both fully and partially selective schools as well as 'schools of choice' such as private and high-demand government schools within local markets or geographical clusters;
- 2) by mapping how socioeconomic stratification may change over time; and
- 3) by comparing and contrasting schools' socioeconomic profiles in the inner and outer regions of two cities, Sydney and Melbourne.

Methodology

School sample

Eighty schools were investigated for this research: 64 in Sydney and 16 in Melbourne. School clusters were constructed by identifying a fully selective school in metropolitan Sydney or Melbourne and selecting the most proximal partially selective, non-selective government and private schools. Each cluster comprised one each of these school types. To ensure fair comparisons between schools, they were matched, where possible, according to school sex and the year during which schools were either established or became selective. For example, if a fully selective school was single sex, then single-sex partially selective, public and private schools were selected where possible to make up the cluster. Further, newly established fully selective

schools, such as those in the outer metropolitan areas of Melbourne, were matched with schools which relatively recently became SEAL accredited. Overall, there were 20 clusters in total, 16 in Sydney and four in Melbourne.

Guided by the Australian Bureau of Statistics maps for ‘inner city’ regions (ABS, 2017), each cluster was allocated to a code based on the location of the fully selective school relative to the city centres of Sydney and Melbourne. Fully selective schools located in the inner metropolitan regions were some of the oldest selective schools in both cities. Inner city schools were usually relatively high performing and high-demand or ‘schools of choice’. Inner city selective schools, due to their central position and accessibility, are attended by some students who travel large distances (Smith & Gladstone, 2018). Hence, location in this research also acted as a proxy for school prestige and status.

The table below shows the clusters within each city. Clusters with a location and number indicated more than one cluster in the same area.

Table 1 School clusters in Sydney and Melbourne by location

Cluster region	Sydney (16)	Melbourne (4)
<i>Inner (9)</i>	Inner 1 to Inner 3 Inner North 1 and 2 Inner South 1 and 2	Inner 1 and 2
<i>Outer (11)</i>	Outer North Outer North West 1 to Outer North West 5 Outer West Outer South West Outer South	Outer 1 and 2

Sydney’s school clusters concentrate in the outer suburbs compared to the inner suburbs, especially in the Outer North West, with five clusters in this area. Melbourne’s school clusters are equally spread between the inner and outer metropolitan regions.

Data, measures and analysis

Socioeconomic stratification

The data used for this research were school-level data provided by the Australian Curriculum Assessment and Reporting Authority (ACARA). Data included enrolment information, socioeconomic data, National Assessment Program - Literacy and Numeracy (NAPLAN) outcomes data.

The measure for school socioeconomic profile was the Socio-Educational Advantage (SEA) index. SEA quarters represent a ‘scale of relative disadvantage through to relative advantage’ (ACARA, 2020a, p. 2). A school’s SEA profile shows the percentage of the school population associated with each quarter of socioeconomic advantage. Previous research (Ho, 2018) uses the proportion of students from the top quartile to compare socioeconomic advantage between selective and non-selective schools, however studies overseas show that partially selective schools are attended by aspirational and high-achieving students from a range of socioeconomic backgrounds (Yoon, 2016). Since fully and partially selective schools feature in this research,

therefore, students from the top two SEA quartiles are taken into account when calculating school socioeconomic profiles. Accordingly, this research refers to students within the top two quartiles of socioeconomic advantage as ‘advantaged’ or ‘high SES’ students.

The middle years, Years Seven to Nine, constitutes the main focus for investigating academic stratification in this research. Year Nine students were chosen as the reference year for analysing students’ socioeconomic profile since this is the year level for which data were available for selective schools from both Sydney and Melbourne.

The average proportions of students in the top two quartiles of advantage were weighted to school size based on Year Nine enrolments and compared across school types and location. Schools were compared along the following dimensions:

- 1) Between the four school types in the total school sample of Sydney and Melbourne schools;
- 2) Between the four school types in Sydney versus Melbourne;
- 3) Between inner and outer located school clusters within each city; and
- 4) Over time from 2014 to 2019.

The analytical steps to calculate weighted socioeconomic averages were as follows. Firstly, the number of Year Nines enrolled in a particular school was divided by the total number of Year Nine students for a school type within a given location to calculate the weight of the school. This figure was multiplied by the proportion of students in the top half of the SEA distribution for the school. Finally, the figures for school weight by SEA were added together to calculate the weighted average for school type within a particular location. The following table highlights how administrative data were translated into socioeconomic averages in more detail, using the example of Melbourne’s clusters for the third type of comparison listed above.

Table 2 Example of approach used for calculating SEA profiles for Melbourne’s inner clusters by school type

Type	School	Top half of SEA (%)	Year Nine students 2016	School weight	Weight by SEA	Weighted average SEA
Fully selective (students=556)	A	86	224	0.40	34.6	87.2
	B	88	332	0.60	52.5	
Partially selective (students=549)	A	83	358	0.65	17.1	83.0
	B	83	191	0.35	9.13	
Private (students=299)	A	92	105	0.35	32.3	95.2
	B	97	194	0.65	62.9	
Public (students=331)	A	76	95	0.29	21.8	80.9
	B	83	236	0.71	59.2	

Academic stratification

NAPLAN is a standardised academic test of student performance. Students sit NAPLAN tests in Years Three, Five, Seven and Nine in all Australian schools. NAPLAN measures achievement in five domains: numeracy, reading, writing, grammar and punctuation and spelling. Analyses of school outcomes were based on the former three achievement domains.

School NAPLAN performance is reported as percentages, showing the proportion of student performance across ten bands of achievement in Years Seven and Nine. To investigate the degree to which academic stratification varied in relation to school selectivity and address the research questions, the total percentage of students in the top two bands were combined and compared across school types, clusters and cities.

Limitations

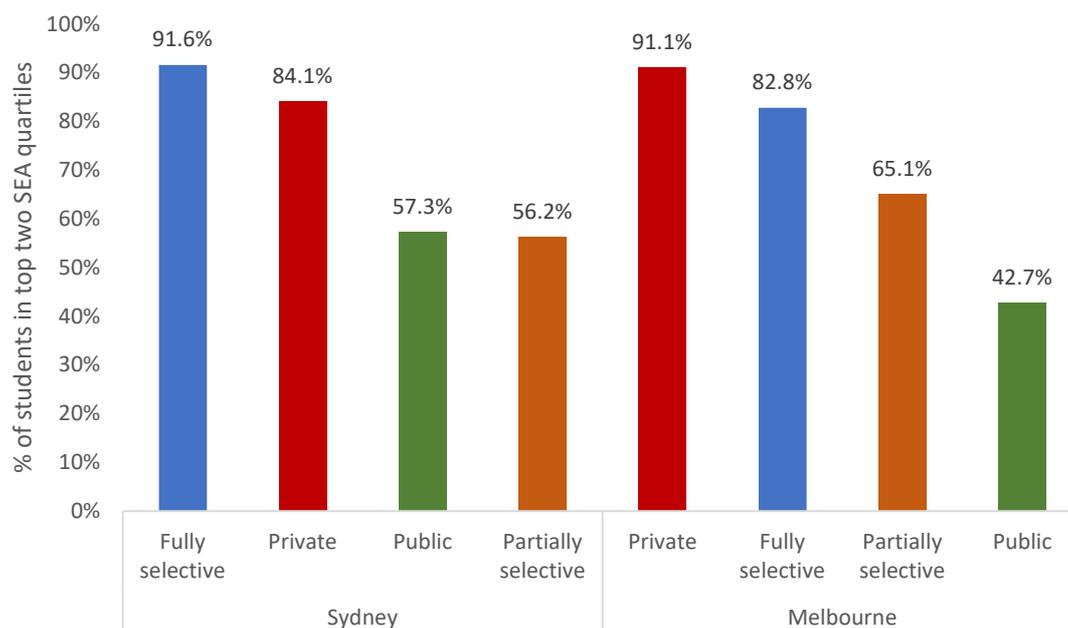
NAPLAN is designed by a panel of educationalists, teachers and federal department staff (ACARA, 2020b); however, researchers have argued that standardised tests can often have 'ceiling effects', or limitations around the measurement of high performing students (Ladwig, 2010). For selective school students whose entry into school is determined primarily by academic performance, NAPLAN as a measure of academic stratification may be limited.

Practices around standardised testing can also vary from school to school. For instance, studies highlight that NAPLAN improvement can be a key target for some schools, such that teachers are positioned to explicitly teach exam techniques to their students, as well as undertake NAPLAN practice tests during school to boost school performance (Klenowski, 2015). Controlling for individual school practices was not possible with the available administrative data and may be a confounding variable.

Despite these two limitations, NAPLAN is a national measure for school performance and fits the purpose of this research. It is the best available source of data to provide a broad overview of academic stratification as it relates to school selectivity in Melbourne and Sydney.

Comparing the socioeconomic composition of selective and non-selective schools

The analyses highlight that socioeconomic distribution varies according to school selectivity across the total school sample in Sydney and Melbourne. Fully selective schools have the highest proportions of high SES students, 89 per cent. Private schools follow, with 81 per cent. For partially selective schools, advantaged students make up 57 per cent of enrolments. Public schools have the lowest attendance of high SES students, at just over half, or 50.4 per cent. Further, public schools have the lowest share of high SES students in 70 per cent of the total 20 school clusters. This trend, however, is not consistent across the socioeconomic profiles of Sydney and Melbourne. The figure below highlights key differences between the two cities based on the weighted average of advantaged students.

Figure 1 The socioeconomic profiles of schools in Sydney and Melbourne by type (2016)

Sydney's fully selective schools have a higher concentration of advantaged students compared to fully selective schools in Melbourne, with 91.6 per cent compared to 82.8 per cent, respectively. Partially selective schools appear less competitive for high SES students in Sydney compared to Melbourne. In Sydney for example, partially selective and public schools enrol a similar proportion of high SES students, with only 0.9 per cent difference between the two. In contrast, Melbourne's partially selective schools enrol 65.1 per cent of their students from advantaged backgrounds, whilst Melbourne public non-selective schools enrol the lowest proportion of high SES students in either city and across all school types, only 42.7 per cent. Private schools in Melbourne have higher average proportions of high SES students, 91.1 per cent compared to Sydney, 84.1 per cent. The following sections explore the socioeconomic profiles of school types within each city context, taking into consideration inner and outer located schools.

Sydney

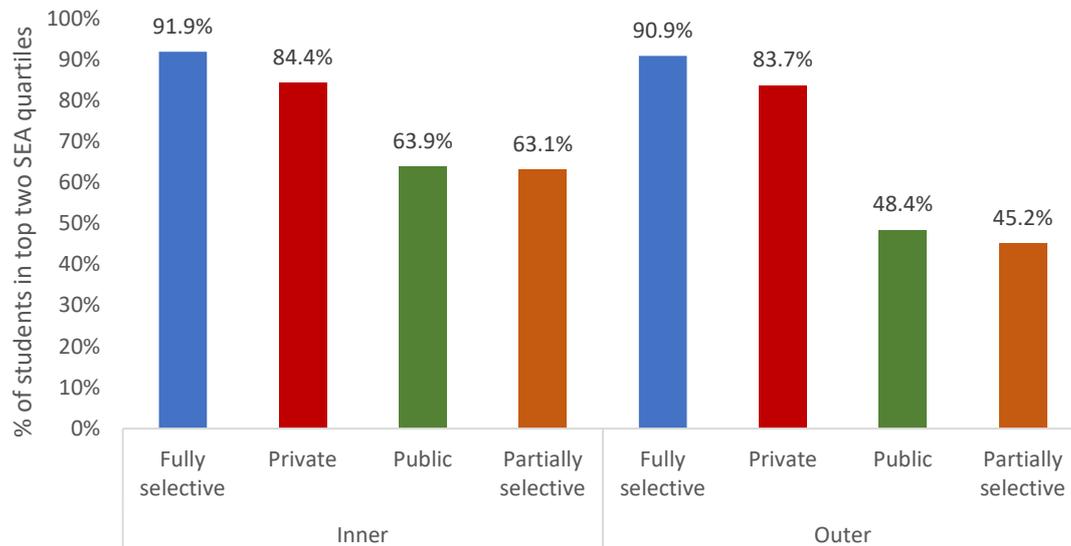
Schools in Sydney comprised 10 inner metropolitan clusters and 6 outer clusters. The figure below shows the social profiles of Sydney's inner clusters compared to outer clusters.

Fully selective schools in Sydney have the highest proportion of socially advantaged students regardless of location, around 91 per cent in both inner and outer regions. Partially selective schools enrol similar proportions of high SES students to public schools, but inner located schools are higher in social advantage compared to the outer clusters, about 63 per cent compared to 48 per cent, respectively.

Looking across the different clusters located in Sydney, there are some instances where public schools are more residualised than others. Given that the average proportion of high SES students in the inner city schools is 63.0 per cent compared with 45.2 per cent for outer schools, there are five clusters in which public schools are residualised, with less than 40 per cent or less of high SES students. These include Inner 3, Inner South 2, Outer North West 4, Outer South

West and Outer West. Lastly, the social profiles of Sydney schools have stayed very stable over the past six years, with very little change observed at the cluster level (see Appendix A for full details).

Figure 2 Percentage of socioeconomically advantaged Year Nine students in inner and outer metropolitan schools by school type in Sydney (2016)



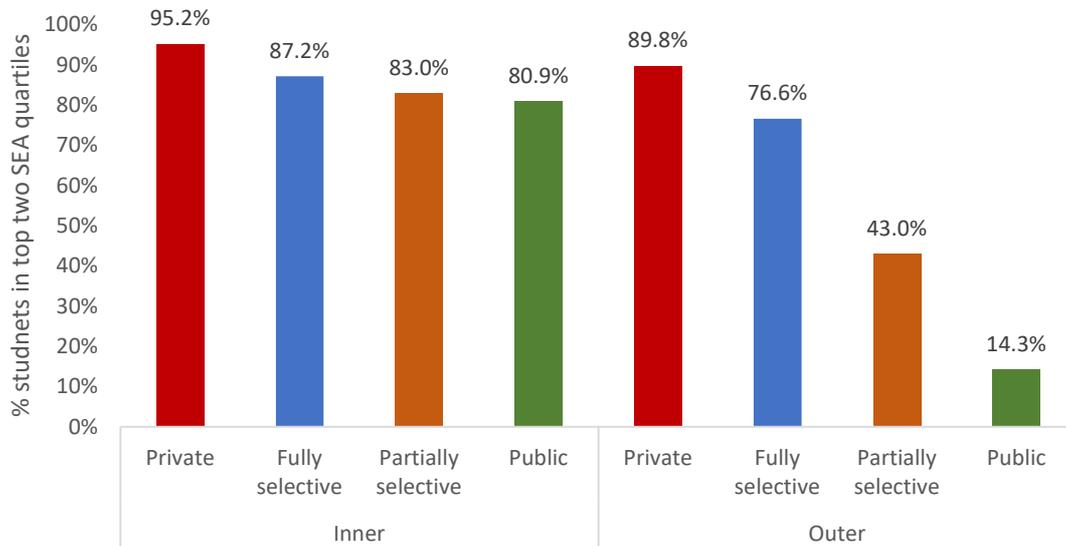
Melbourne

Compared to Sydney schools’ socioeconomic profiles, the distribution of socioeconomic advantage is more differentiated between Melbourne’s inner and outer located school clusters as outlined in the figure below.

In the inner region, all school types enrol a relatively high proportion of advantaged students. Private schools have the highest proportion of advantaged students of all types in this location, with almost all, 95.2 per cent from the top two quartiles of advantage. Following closely behind are fully selective schools, with 87.2 per cent of advantaged students. The partially selective and public schools in the inner region have a lower proportion of high SES students, but still have 83 and 80.9 per cent, respectively.

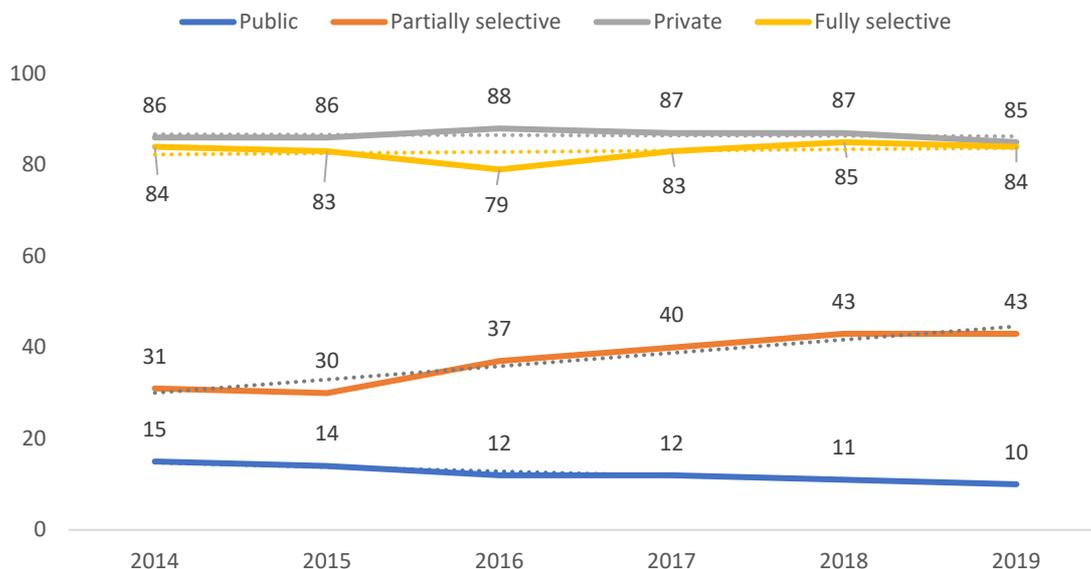
In comparison, high SES students in the outer metropolitan regions are more stratified across school types in Melbourne, with social profiles resembling four distinct strata. In the two outer clusters, fully selective schools have on average, three quarters of pupils from high SES backgrounds, 76.6 per cent. Partially selective schools enrol on average, 43 per cent of advantaged students. Lastly, public schools in Melbourne’s outer suburbs are the most residualised of any school type in both cities, with only 14.3 per cent of high SES students, on average.

Figure 3 Percentage of socioeconomically advantaged Year Nine students of inner and outer metropolitan schools by school type in Melbourne (2016)



Similar to Sydney, the social profiles of schools have stayed relatively constant over the past six years in Melbourne two inner school clusters. The biggest cluster-level changes were observed in Melbourne’s Outer 1 cluster, outlined in the figure below. This cluster is unique as it comprises relatively new fully and partially selective schools.

Figure 4 Trend in percentage of socioeconomically advantaged students across school types in Melbourne Outer 1 cluster from 2014 to 2019 (%)



Considering the local market of Melbourne’s Outer 1 cluster, the fully selective and private schools have maintained high levels of attendance by advantaged students during this six-year period. The newly established partially selective school has increased its proportion of high SES

students from 31 to 43 per cent. Correspondingly, the nearby public school shows a decline in high SES students from 15 to 10 per cent. High SES students from outside the local area may be enrolling into the partially selective school to account for the school's social profile; however, the associated decline in high SES students in the nearby public school indicates that high-achieving and high SES students may be choosing to attend the partially selective school instead of their non-selective public school.

In sum, comparing and contrasting the two cities in terms of socioeconomic profiles according to school location and type highlights the following aspects. Fully selective schools enrol very high proportions of advantaged students regardless of city and location, on average. On the other hand, the socioeconomic composition of partially selective schools is more location-specific. Partially selective schools in Sydney for instance, have similar socioeconomic profiles to public schools, whilst Melbourne's partially selective schools appear more socioeconomically elite than public schools, especially in the outer city clusters. The social profiles of schools in Sydney portray more consistent patterns in stratification, whereas Melbourne's school social profiles are different when considering inner versus outer clusters.

Academic achievement across school types

The NAPLAN performance of Year Seven and Nine students across school types varies in relation to school selectivity. The following table outlines the proportions of students performing in the two top bands of academic achievement in the NAPLAN domains of numeracy, reading and writing in all schools. Note, selective school Year Seven averages are based only on Sydney schools since Melbourne selective schools do not have Year Seven students.

Table 3 Schools' average percentage of Year Seven and Nine students in the top two bands of achievement in NAPLAN domains in 2016, by school type

School type	Numeracy		Reading		Writing	
	Year 7	Year 9	Year 7	Year 9	Year 7	Year 9
Fully selective	92.1	87.7	94.7	83.6	70.7	54.1
Partially selective	49.7	46.4	45.2	40.1	26.2	22.3
Private	47.3	42.1	38.4	32.8	30.4	18.5
Public	30.6	20.4	27.5	17.9	17.3	10

School selectivity and academic selection appear to produce three strata of academic achievement. As expected for academically selected schools, fully selective schools are the highest achieving in both year levels and in all domains. In Year Seven, over 90 per cent of all fully selective schools in Sydney schools are performing in the top two bands for numeracy and reading. A lower proportion of students in fully selective schools are in the top two bands of achievement for writing, 70.7 per cent, although this proportion is still relatively very high compared to other school types.

Partially selective schools and private schools make up the middle strata of academic achievement. Both schools have similar percentages of students in the top two bands across the three achievement domains. Partially selective schools are slightly higher achieving compared to private schools in numeracy and reading, but private schools outperform them in Year Seven writing. Public schools make up the lowest strata of achievement. Public schools have the lowest average achievement across all three domains compared to the other school types, especially

Year Nine writing, with only 10 per cent of students performing in the top two bands. This three tier pattern of academic stratification is fairly consistent when considering the four school types in Sydney and Melbourne (see Appendix C).

Discussion

The evidence suggests that academic selection and selective schools contributes to both social and academic stratification in both city contexts. Similar to previous research (Ho, 2018; Kenway, 2013) the findings reveal acute and pervasive socioeconomic segregation related to fully selective schools. This research adds to the extant literature by highlighting some nuances concerning the degree to which socioeconomic segregation varies between selective and non-selective schools when comparing neighbouring schools within two metropolitan areas.

In Sydney, the findings indicate that the socioeconomic profiles of fully selective schools are dissimilar to private, partially selective and non-selective public schools. These findings resonate with those of Drew et al. (2020) who showed that fully selective schools in New South Wales are attended by students who are even more socially advantaged than those whose families pay high fees to attend private schools. In Melbourne, private schools are slightly more socioeconomically elite compared to fully selective schools.

The socioeconomic composition of partially selective schools appears to be more location specific. In Sydney, partially selective schools do not appear to be more socioeconomically elite than nearby public schools in either the inner or outer metropolitan regions. This may be due to Sydney's larger system of fully selective schools, many of which are located in the outer suburban areas, perhaps increasing the attendance of high-achieving students into fully selective rather than partially selective schools. By contrast, Melbourne's inner located partially selective schools have higher concentrations of advantaged students compared to outer located school clusters. Researchers have developed many ways of understanding this outcome.

Higher housing prices in the inner city often translates into higher proportions of high SES students in inner compared to outer suburb schools (Boterman, 2019). Inner city school clusters are 'socially restricted' in this sense, choosing their students from a more socioeconomically advantaged student population than those in the outer suburbs (Windle, 2015). Rowe and Windle (2012) also demonstrate that university educated parents residing in the inner city who could afford private schooling seldom use NAPLAN results as a measure of school quality. Instead, parents can opt for schools which reflect their family values (Taylor & Woollard, 2003), which are secular and are attended by students from similar social backgrounds to their own (Rowe & Lubienski, 2017). Within inner metropolitan areas of Melbourne, parental choice politics may lead to families opting out of fully selective schools in favour of partially selective or non-selective public schools, which may help to boost their attendance by socially advantaged students. Outer metropolitan schools may be more 'exposed' to school socioeconomic segregation brought about by the combined selectivity in the forms of both fully and partially selective schools that socially stratify local markets over time, as highlighted by Melbourne's Outer 1 cluster.

The findings suggest that there is much to be studied in regard to partially selective schooling. Future research could focus on both conceptually framing partially selective schools and exploring the social composition of selected student versus mixed ability streams within partially selective schools. Future research could also explore the parental politics of outer located selective schools in more detail, including by focussing on partially selective schools.

Consistent with the literature (Clark, 2010; Houg & Ryan, 2018) the findings show academic stratification patterns when selective schools are compared to nearby non-selective schools. Academically stratified schools reconfigure the compositions of classrooms, which is important for student learning and performance (Dauber, Alexander, & Entwisle, 1996; Loveless, 2009). Concentrating the highest achieving students into selective schools can reduce the impacts of positive peer effects, or the phenomenon whereby high-achieving students influence the learning outcomes of lower-achieving students (Opdenakker & Van Damme, 2001). When half of low SES Year Seven students are not meeting national benchmarks for literacy and numeracy in Australia (Lamb et al, 2020), promoting student academic and socioeconomic heterogeneity in classrooms may work better towards the achievement of educational opportunities for all students.

Overall, this research contributes to the large volume of published research, highlighting the negative social impacts that flow on from academic selection and selective schools (Gorard & Fitz, 2000; Ho, 2015). For these reasons, researchers have argued that reducing socioeconomic stratification is an effective approach to promoting fairer school systems (Gorard, 2010; Perry, 2018). For some Australian researchers, it is argued that school systems would benefit from the dismantlement of selective schools (Bonnor & Shepherd, 2016; Drew et al., 2020).

To combat some of these issues, the government in New South Wales has undertaken a review of the selective school entrance and selection procedures and is currently implementing practices working towards a more 'equitable' system (NSW government, 2020). Earlier in the paper it was mentioned that there are inequalities embedded 'on the pathway to and through' the processes of academic selection (Posselt and Grodsky, 2017). One strategy to address the stratifying effect of selective schooling is to implement broader recruitment methods aimed at reaching students from more diverse backgrounds, which may help to increase the mix of students who go 'to' selective schools. Further, the measures proposed include re-designing entrance exams for fully selective schools, aiming to increase equity 'through' the selection and admission process. Time will tell if these measures are effective to increase the social mix of fully selective schools. No such changes have been proposed in regard to selective schooling in Victoria so far. The Department of Education has signalled support for comprehensive public schooling by no longer overseeing SEAL schools, emphasising that schools 'must enrol all local students first' (Cook, 2016).

Despite these small developments, the institution of selective schooling in Australia remains part of the government school system and the testing, administration and organisation of fully selective schools remains supported by state governments. Furthermore, the addition of two new fully selective schools in Victoria in the past ten years, the continuing expansion of the SEAL school network and the addition of a virtual selective school in New South Wales, Aurora College, highlight that the selective school system is indeed, expanding.

Tsolidis (2009) elucidates some underlying reasons for why selective schooling and selective practices are sustained. She argues that exceptional academic performance and top university entrance rates render high-performing government schools 'ambivalent' in the minds of governments and the general public (Tsolidis, 2009). Moreover, Francis et al. (2017) argue that selection and ability grouping is a 'signifier' for high standards in education systems. Speaking to notions of academic streaming, or 'setting' in the English secondary school system but arguably relevant to the Australian context, the researchers state that the logic of organising pupils into academic hierarchies premised upon the need for 'stretching the brightest' students has become recognised as a 'natural order' for schooling:

Production of this intelligible, 'natural' order means that these narratives appeal to the desires and fantasies of the middle- class parents interpolated as aspirational, active consumers of education. Against such powerful discursive productions of the 'obvious', 'real', and 'natural', the research evidence on the impact of setting sits blasphemously as a discomfiting, 'impossible' aside, and may be deliberately undermined, or simply ignored (Francis et al., 2017, p. 10).

The status of selective schools at the top of the supposed 'natural' order may be traced back to their historical roots as some of the first Australian secondary schools, where they were positioned as institutions as part of a broader pathway for the privileged and elite towards university and high-status occupations (Campbell, 2019). Nowadays, the increase in the number of selective schools, alongside the number of selective school applicants (Baker & Smith, 2019) suggests that the 'natural order' continues to be institutionalised through government policies and upheld by public support and participation.

This research highlights that selection and academic stratification can reconfigure the distribution of advantaged students within local markets and across schools more broadly, such that the population of fully selective school pupils resembles anything but a 'natural' socioeconomic profile. Rather than operating as a vehicle for merit as part of their stated purpose, selective schools in conjunction with broader mechanisms of school selectivity that flow across government and private school systems, can reproduce and sustain socioeconomic inequalities.

Conclusion

This research has explored the relationships between school selectivity and socioeconomic and academic stratification. It has outlined the extensive and pervasive socioeconomic stratification associated with selective schooling in both metropolitan Sydney and Melbourne. Despite some differences in how students are selected in each state, the patterns of socioeconomic stratification across both metropolitan contexts suggest that the equity measures in place, for example the 'five per cent rule' in Melbourne, do not go far enough to reduce the social selection effects produced as an outcome of academic selection. The concentration of socioeconomic advantage associated with selective schooling represents a contradiction to the goals of 'equity and excellence' which underpin the policy framework for Australia's education system (Education Council, 2019). It is acknowledged that selective practices are not unique to selective schools and that various forms of selection operate across school types and sectors; however, it is argued that continuing support and expansion of the selective school system through fully and partially selective schools will result in sustaining school and social inequalities, reducing the capacity for developing social cohesion in society.

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Appendix A. Socioeconomic profiles of Sydney schools by cluster (2014-2019)

Clusters	% high SES 2014	% high SES 2015	% high SES 2016	% high SES 2017	% high SES 2019	% high SES 2018
Inner 1	80.3	78.0	79.5	79.3	81.3	78.3
Private	94.0	91.0	94.0	95.0	96.0	95.0
Fully selective	92.0	91.0	92.0	92.0	91.0	91.0
Partially selective	79.0	78.0	77.0	77.0	78.0	74.0
Public	56.0	52.0	55.0	53.0	60.0	53.0
Inner 2	78.3	79.0	76.8	78.5	78.3	76.0
Fully selective	92.0	95.0	93.0	94.0	94.0	91.0
Partially selective	79.0	78.0	77.0	77.0	78.0	74.0
Private	77.0	78.0	74.0	77.0	75.0	77.0
Public	65.0	65.0	63.0	66.0	66.0	62.0
Inner 3	64.0	63.5	64.8	67.3	72.0	68.8
Fully selective	90.0	87.0	92.0	90.0	89.0	89.0
Partially selective	76.0	78.0	76.0	76.0	79.0	79.0
Private	54.0	52.0	54.0	58.0	63.0	58.0
Public	36.0	37.0	37.0	45.0	57.0	49.0
Inner north 1	68.3	88.3	89.8	90.0	89.3	89.0
Private	97.0	98.0	97.0	97.0	90.0	92.0
Fully selective	95.0	93.0	97.0	94.0	95.0	97.0
Partially selective	81.0	82.0	80.0	82.0	84.0	81.0
Public	0.0	80.0	85.0	87.0	88.0	86.0
Inner north 2	66.3	86.0	94.0	87.3	88.3	86.8
Private	96.0	94.0	94.0	95.0	94.0	96.0
Fully selective	95.0	95.0	95.0	96.0	96.0	92.0
Partially selective	74.0	75.0	102.0	71.0	75.0	73.0
Public	0.0	80.0	85.0	87.0	88.0	86.0
Inner south 1	73.5	71.8	73.0	72.0	73.8	72.5
Private	89.0	88.0	90.0	89.0	88.0	90.0
Fully selective	88.0	86.0	84.0	82.0	80.0	81.0
Partially selective	61.0	61.0	63.0	64.0	67.0	66.0
Public	56.0	52.0	55.0	53.0	60.0	53.0
Inner south 2	67.3	66.5	64.8	66.0	68.0	66.0
Private	87.0	87.0	88.0	89.0	90.0	88.0
Fully selective	83.0	85.0	84.0	83.0	83.0	84.0
Partially selective	64.0	57.0	54.0	57.0	62.0	57.0
Public	35.0	37.0	33.0	35.0	37.0	35.0
Outer north	81.0	80.0	80.3	80.8	81.0	79.8
Fully selective	97.0	96.0	98.0	98.0	98.0	98.0
Private	85.0	83.0	83.0	86.0	87.0	84.0
Partially selective	82.0	82.0	81.0	81.0	82.0	82.0
Public	60.0	59.0	59.0	58.0	57.0	55.0
Outer north west 1	72.8	71.3	72.8	73.0	74.5	73.8
Fully selective	95.0	95.0	95.0	95.0	96.0	94.0
Private	88.0	87.0	89.0	91.0	89.0	89.0

Public	56.0	56.0	57.0	57.0	57.0	58.0
Partially selective	52.0	47.0	50.0	49.0	56.0	54.0
Outer north west 2	75.0	75.0	74.0	74.5	74.8	74.5
Fully selective	97.0	97.0	97.0	96.0	96.0	96.0
Private	94.0	94.0	94.0	94.0	92.0	93.0
Public	69.0	68.0	66.0	66.0	64.0	66.0
Partially selective	40.0	41.0	39.0	42.0	47.0	43.0
Outer north west 3	63.8	64.0	64.0	64.8	66.5	65.8
Fully selective	93.0	93.0	94.0	94.0	96.0	92.0
Private	89.0	88.0	88.0	86.0	85.0	89.0
Public	60.0	59.0	60.0	61.0	63.0	61.0
Partially selective	13.0	16.0	14.0	18.0	22.0	21.0
Outer north west 4	45.0	46.5	46.8	46.0	46.5	46.0
Fully selective	93.0	92.0	93.0	94.0	93.0	93.0
Private	57.0	59.0	60.0	60.0	61.0	57.0
Public	20.0	23.0	22.0	18.0	19.0	22.0
Partially selective	10.0	12.0	12.0	12.0	13.0	12.0
Outer north west 5	67.5	71.5	68.5	71.8	78.8	73.8
Partially selective	25.0	51.0	59.0	64.0	76.0	68.0
Fully selective	100.0	100.0	94.0	100.0	100.0	100.0
Private	95.0	86.0	70.0	71.0	84.0	75.0
Public	50.0	49.0	51.0	52.0	55.0	52.0
Outer south	70.8	69.5	70.3	70.8	69.5	69.8
Fully selective	88.0	90.0	91.0	93.0	91.0	90.0
Private	85.0	85.0	87.0	86.0	84.0	85.0
Public	59.0	57.0	57.0	59.0	58.0	58.0
Partially selective	51.0	46.0	46.0	45.0	45.0	46.0
Outer south west	43.0	42.5	41.5	43.8	45.0	43.5
Fully selective	76.0	77.0	76.0	78.0	78.0	76.0
Private	40.0	37.0	38.0	42.0	46.0	43.0
Partially selective	35.0	36.0	34.0	35.0	36.0	36.0
Public	21.0	20.0	18.0	20.0	20.0	19.0
Outer west	47.0	46.8	46.5	47.0	47.5	47.0
Fully selective	89.0	92.0	91.0	91.0	92.0	91.0
Private	50.0	51.0	52.0	49.0	52.0	53.0
Partially selective	30.0	28.0	26.0	30.0	29.0	28.0
Public	19.0	16.0	17.0	18.0	17.0	16.0

Appendix B. Socioeconomic profiles of Melbourne schools by cluster (2014-2019)

Clusters	% high SES					
	2014	2015	2016	2017	2018	2019
Inner 1	85.0	86.8	86.0	85.0	85.8	85.0
Private	96.0	97.0	97.0	96.0	97.0	95.0
Fully selective	88.0	90.0	88.0	89.0	88.0	88.0
Partially selective	81.0	84.0	83.0	82.0	82.0	82.0
Public	75.0	76.0	76.0	73.0	76.0	75.0
Inner 2	85.5	86.0	86.0	85.0	85.0	86.3
Private	89.0	93.0	92.0	89.0	87.0	91.0
Fully selective	86.0	85.0	86.0	87.0	88.0	87.0
Partially selective	86.0	84.0	83.0	83.0	84.0	86.0
Public	81.0	82.0	83.0	81.0	81.0	81.0
Outer 1	54.0	53.3	54.0	55.5	55.5	56.5
Private	86.0	86.0	88.0	87.0	87.0	85.0
Fully selective	84.0	83.0	79.0	83.0	85.0	84.0
Partially selective	31.0	30.0	37.0	40.0	43.0	43.0
Public	15.0	14.0	12.0	12.0	11.0	10.0
Outer 2	56.0	56.3	57.0	58	60.0	61.5
Private	88.0	89.0	90.0	90.0	91.0	90.0
Fully selective	76	75	74	77	81	82
Partially selective	44	45	48	50	51	52
Public	16	16	16	15	17	22

Appendix C. Schools' average academic performance in Years Seven and Nine**Sydney schools**

School type	Numeracy		Reading		Writing	
	Year 7	Year 9	Year 7	Year 9	Year 7	Year 9
Fully selective	92.1	85.1	94.7	86.8	70.7	52.4
Partially selective	49.5	46.9	37.9	32.4	24.8	17.7
Private	42.6	39.3	41.9	36.9	27.9	21
Public	29.1	18.8	25.1	15	14.4	7.5

Melbourne

School type	Numeracy		Reading		Writing	
	Year 7	Year 9	Year 7	Year 9	Year 7	Year 9
Fully selective	N/A	97.3	N/A	71.8	N/A	60.5
Private	66	53.3	58.3	52.8	40.3	27.5
Partially selective	50.7	44	41	35	33.3	22.3
Public	35	23.8	34.2	24.4	25.4	15.6