
http://researchrepository.murdoch.edu.au/19175/
Access to academic curriculum in Australian secondary schools: a case study of a highly marketised education system

Laura B. Perry* and Leonie Southwell

School of Education, Murdoch University, Murdoch, Australia

(Received 5 December 2012; final version received 14 September 2013)

This study examines how access to academic curriculum differs between secondary schools in Australia, a country whose education system is marked by high levels of choice, privatisation and competition. Equitable access to academic curriculum is important for both individual students and their families as well as the larger society. Previous research has shown that students from lower socio-economic backgrounds are less likely to study academic curriculum than their more advantaged peers. Less is known, however, about the extent to which this pattern is related to differential provision of curriculum between schools. We found that low socio-economic schools offer students less access to the core academic curriculum subjects that are important for university entry. We also found that the breadth and depth of courses offered is related to school sector (private or public) and socio-economic context. Previous research has shown that choice and competition are inequitable because they frequently increase school social segregation and ‘cream-skimming’. Our findings show another inequitable consequence, namely that choice and competition limit access to high-status academic curriculum in working-class communities.

Keywords: academic curriculum; educational inequalities; Australia; marketisation; private schools; school socio-economic context

Introduction

This study is based on the belief that all students should have an equal opportunity to study academic curriculum in upper secondary school regardless of their social background. While we recognise that not all students have the desire or ability to succeed in academic curriculum such as calculus, physics, literature or foreign languages, we agree with Dewey (1944), Oakes (1990) and Lee et al. (2000) that a student’s social background or place of residence should not limit their ability to choose such subjects. Equitable access to academic curriculum is important for both economic and social justice reasons, and for both individuals and the larger society. Academic curriculum provides a solid foundation for social, economic and physical well-being (McMahon 2002), provides pathways to further study and high-status professions (Teese and Polesel 2003), and develops critical reflection, ethics and active citizenship (Kronman 2007). Moreover, as a form of abstract knowledge, academic curriculum develops students’ ability to transform and create new knowledge, and to transcend the world of the ‘mundane’ to the world of the

*Corresponding author. Email: l.perry@murdoch.edu.au

© 2013 Taylor & Francis
‘unthinkable’ (Bernstein 2000). For all of these reasons, Bernstein (2000), Oakes (1990) and Teese and Polesel (2003), among many others, have argued that equitable access to academic curriculum is a matter of social justice.

We define academic curriculum as the disciplinary-based knowledge that is taught in schools. It includes the traditional academic disciplines from the humanities (e.g. literature, history, foreign languages), mathematics, natural sciences (e.g. biology, chemistry and physics) and social sciences (e.g. sociology, economics, psychology). Because most schools in comprehensive education systems do not academically select students, ability grouping is common within schools, especially in academic curriculum subjects. Thus, secondary schools typically offer academic subjects (e.g. math) at varying levels of difficulty. In Australia, academic curriculum subjects are offered in two or even three ‘levels’ or ‘stages’; this feature is described in more detail later in the paper.

Previous research from Australia has shown that students from higher socio-economic backgrounds and students who attend non-government (private) schools are more likely to study academic curriculum compared to other students (Lamb, Hogan, and Johnson 2001; Teese 2007). This is likely due in part to differential access to academic curriculum within schools (for example through tracking, the process by which students are assigned to classrooms based on curriculum offering and ability grouping) as well as between schools. While it is plausible that some Australian secondary schools do not offer all of the traditional academic curriculum subjects such as calculus or physics, limited empirical evidence is available to substantiate this claim. It is also likely that access to academic curriculum in Australia is patterned by school type (private or public) and school socio-economic composition as has been found in the USA (see, for example, Dalton et al. 2007 and Lee et al. 1998), but detailed empirical evidence for Australia is also lacking.

For readers outside of Australia, this study provides a theoretically interesting case study of curriculum access in (a) a prosperous country with a high growth economy; and (b) a highly marketised comprehensive education system. The Australian education system is characterised by high levels of school choice, privatisation and competition. These features are promoted by the public dissemination of school performance on standardised national assessments via a website funded and managed by the federal government. Most of the research literature about access to academic curriculum comes from the USA, whose education system is marked by relatively low levels of choice and privatisation but large inequities in school funding and chronic underfunding of schools in high poverty communities. Examining the Australian case allows us to examine whether curriculum access is also related to marketisation trends rather than severe underfunding. It also allows us to assess another potential negative consequence of choice and competition that has been under researched, namely equal access to academic curriculum.

We examined access to academic curriculum in the final year of schooling (Year 12) in metropolitan Perth, the capital city of the state of Western Australia. More than three-quarters of the state’s two million residents live in the Perth metropolitan area (hereafter referred to simply as Perth). Limiting the study to Perth allowed us to minimise possible confounding factors related to curriculum access, such as geographic isolation. Previous research has shown that the marketisation features of choice and competition often create a process of residualisation whereby low socio-economic status (SES) schools experience increased proportion of students
from disadvantaged backgrounds and reduced overall enrolments (Carlson, Lavery, and Witte 2011; Lamb 2007; Waslander and Thrupp 1995). We hypothesise that these negative consequences of marketisation can limit access to academic curriculum. We therefore chose to examine how access to academic curriculum is patterned by school social composition and sector. The study was guided by three research questions:

1. How does the breadth of academic curriculum differ by school socio-economic composition and school sector? On average, how many academic curriculum subjects are taught in secondary schools?
2. How does the depth of academic curriculum differ by school socio-economic composition and school sector? Are academic curriculum subjects at the advanced level more likely to be offered in some school contexts and sectors than others?
3. How does the provision of five core academic curriculum subjects (university-preparatory maths, sciences and English literature) differ by school socio-economic composition and sector?

**Theory and evidence about the marketisation of education**

Marketisation is the process by which a publicly provided service is subjected to market mechanisms for the purpose of increasing quality, innovation, effectiveness and efficiency (Whitty and Power 2000). It is related to the neoliberal ideologies that began to take hold in the 1980s that saw the state as an inefficient and ineffective provider of public services (Ball and Youdell 2008). In terms of education, marketisation has been seen by some analysts such as Chubb and Moe (1990) as a way to foster innovation and improve the quality of education. It is beyond the scope of this paper to provide a detailed overview of the aims, mechanisms and outcomes of educational marketisation. We therefore will limit the discussion to the two main mechanisms of educational marketisation, namely choice and competition (Chubb and Moe 1990).

Choice and competition are seen by proponents of marketisation such as Chubb and Moe (1990) as the main mechanisms for promoting innovation and quality in education. The basic idea is that giving parents the ability to choose a school will increase competition between schools for students, which in turn will increase schools’ productivity, quality and relevance (Chubb and Moe 1990). Choice is fostered in a variety of ways, for example by allowing open-district enrolment (i.e. the ability to choose a non-local public school) and promoting private schooling (Walford 2003). To help parents make informed choices, detailed information about school profiles, goals and performance are provided by schools and/or governments via websites and the public reporting of school performance league tables.

Researchers in a range of international settings have found that marketisation often has a negative impact on educational opportunities, experiences and outcomes. In particular, researchers have found that choice and competition have fostered the following: conformity rather than innovation in the classroom (Lubienski 2003, 2005), school selection processes that discriminate against socially disadvantaged students (Lubienski, Gordon, and Lee 2012), vocationalisation of public schooling in low-income communities (Edwards 2006), socio-economic segregation between...
schools (Alegre and Ferrer 2010; Carlson, Lavery, and Witte 2011; Goldstein and Noden 2003; Lamb 2007; Rothman 2003), ethnic segregation between schools (Karsten et al. 2006; Lauder and Hughes 1999; OECD 2004), an inequitable distribution of educational resources and learning opportunities between children from different social classes (Gewirtz, Ball, and Bowe 1995), and an individualistic vs. collective orientation among parents (Ball 2003). While some researchers have found that the negative consequences of marketisation do not occur in all contexts (see, for example, Bunar 2010), the consensus among most marketisation researchers is that the disadvantages outweigh the positives (Whitty and Power 2000). It is likely that choice and competition are especially damaging when the differences between schools’ resources, socio-economic profiles and performance are large.

**The Australian education system**

Australia has a comprehensive education system that is characterised by high levels of privatisation, choice and competition. Data from the Organisation for Economic Cooperation and Development (OECD 2007, 2010a) show that Australia has much higher levels of privatisation and choice than other countries with comprehensive education systems (which includes most English-speaking countries). For example, almost 40% of all secondary students in Australia attend a private school that charges fees (ABS 2011; Watson and Ryan 2010), compared to less than 10% in Canada, the USA or the UK (OECD 2010a).

Private schools have a long tradition in Australia (Boyd 1987). The long history of Catholic and Anglican provision of education has led to widespread acceptance among policy-makers and the public of the merits of private schooling (Berman 1999). Private schooling is widely considered by many parents and the lay public to be of better quality than public schooling in Australia (Beavis 2004). Private schools, also called non-government schools, are divided into two categories, Catholic and independent. Catholic schools are managed by the Catholic Education Office, and they typically charge low to moderate fees. Independent schools comprise non-denominational schools, Anglican and other Protestant schools (as well as a few Islamic schools), and a few non-affiliated (i.e. independent) Catholic schools. Fees at independent schools vary, but on average they are higher than in Catholic schools. The most prestigious schools in Australia are typically long-established, high-fee Anglican/Protestant independent schools. Many of the independent Catholic schools are also prestigious and charge higher fees than regular Catholic schools.

The Australian Commonwealth has been promoting choice and competition through the promotion of private schooling for decades. This federal promotion of private schooling has been mainly accomplished by providing federal funding to private schools (Angus 2003). All private schools, including denominational schools, receive federal funding as well as charge student fees. The federal government began recurrent per-pupil funding of private (non-government) schools with the *States Grants (Independent Schools) Act 1969* (Harrington 2011). Recurrent grant funding for non-government schools has continued since then, authorised by a series of Commonwealth acts including the *Schools Assistance (Learning Together – Achievement Through Choice and Opportunity) Act 2004*. As suggested by the title of the 2004 act, a primary rationale for federal funding of non-government schools is to support *choice*. Specifically, the Commonwealth argued:
General recurrent grants assist government and non-government schools with the recurrent costs of school education so that they can offer programs directed towards the achievement of the Australian Government’s priorities for schooling. Those priorities include support for the principles of access, choice, equity and excellence in schooling by encouraging the provision of a strong, viable and diverse selection of government and non-government schools from which parents can choose. (Australian National Audit Office 2004)

Non-government schools receive substantial amounts of public (mainly Commonwealth but also state and territory) funds. In 2008, for example, the proportion of school income from public sources was 72% for Catholic schools and 38% for independent schools (Ministerial Council on Education 2008). Commonwealth school funding policy has led to large inequalities between schools, with high-status independent schools having substantially more per-pupil funding than most government schools (Watson and Ryan 2010). In an attempt to make Commonwealth school funding was less complicated and opaque as well as more equitable, the federal government commissioned a major review in 2011, the so-called Gonski Review (Gonski et al. 2011). The aim of the review was to recommend a school funding policy for improving equity and excellence in the Australian education system in a way that was fair and transparent, while also respecting the Labor government’s pledge to not decrease federal funding to any school, including private schools (Gillard 2010).

School choice in Australia exists in the public (government) sector as well. Students are guaranteed a place at their local school but may apply for admission to any school of their choice. Students residing within the school’s catchment area have priority. In communities that have high-performing schools, places for students residing outside the catchment area are non-existent, or in some cases are limited to a small number of students with exceptional academic or sporting talent. In addition, secondary schools typically review an applicant’s previous academic and behavioural record before accepting an out-of-area student.

Rothman (2003) has shown that social segregation between Australian schools has been growing since the 1970s, and argues that it is due to school choice and the federal government’s policies for funding private schools. These policies have resulted in patterns between socio-economic status and school sector. Most students from lower socio-economic backgrounds attend public (government) schools, while students at private schools are more likely to come from middle- and upper-class families (Watson and Ryan 2010). There is even a distinction between the type of non-government school, with Catholic schools drawing primarily from the middle class, and Anglican or other independent schools drawing from wealthier families (Watson and Ryan 2010). Social segregation between schools is much higher in Australian than in comparable countries. According to data from the OECD, the proportion of students that attend a socially average or mixed school is 38% in Australia and the USA but 63% in Finland, 56% in Canada, and 50% in New Zealand and the UK (OECD 2010a, 196).

**Equal opportunity to access academic curriculum**

The Australian educational system has been characterised as less equitable than many other developed countries (Thomson et al. 2011). Compared to their more privileged peers, Australian students from lower socio-economic backgrounds are
less likely to attend university or complete Year 12 (James 2001; Teese 2007). In 2005, only 34% of graduates from the lowest socio-economic decile accessed university studies compared to 77% of graduates in the highest SES decile (Teese 2007). Australian students from lower socio-economic backgrounds are also less likely to study advanced academic subjects in secondary school than their peers from more privileged backgrounds (Lamb, Hogan, and Johnson 2001; Stewart 2008; Teese 2007; Teese and Polesel 2003). These inequitable outcomes persist despite a near universal expansion of the education system to 12 years of schooling (Teese 2007).

International research, most of which comes from the USA, has shown that access to academic curriculum is often related to school socio-economic composition (also known as school SES). In the USA, Monk and Haller (1993) found that academic curriculum offerings vary substantially across secondary schools with different socio-economic compositions. Even after controlling for the size of the school, they found that students who attend high-SES schools have a larger number of academic subjects available to them than did peers at low-SES schools. Ross (2008) found that students in the USA who attend low-SES schools are more likely to undertake vocational courses and less likely to have access to challenging academic courses. Similarly, Spade, Columba, and Vanfossen (1997), Rumberger and Thomas (2000), and Mehan and Grime (1999) found that higher SES schools offer more advanced academic curriculum subjects compared to other schools. In their study of high schools in California, Mehan and Grime (1999) found that the four high schools in the poorest communities offered a total of 17 ‘Advanced Placement’ courses compared to a total of 57 such courses at the four high schools in the wealthiest communities. In Ireland, Smyth and Hannan (2006) found that students in low-SES schools have less access to physics and chemistry than do students in other schools.

There is some evidence from Australia that lower SES schools provide limited access to academic curriculum. Edwards (2006) and Lamb (2007) found that increasing levels of educational marketisation and competition in Melbourne have reduced enrolments in low SES government schools. The reduced enrolments have led to diminished funding and resources, with the consequence that schools are forced to narrow their curriculum offerings. Stewart (2008) noted that rural and disadvantaged schools are unable to offer a wide enough range of academic subjects and thus tend to focus more on vocational courses. In their study of Tasmanian schools, Lamb and colleagues (2001) found that school-level variables explain a statistically significant portion of the variance in individual student enrolment in academic curriculum. None of these Australian studies show, however, detailed evidence about the degree to which access to academic curriculum differs between schools, or the degree to which it is related to school sector or social composition.

As suggested by the studies cited above, the size of the school is related to the breadth of academic curriculum offerings. Elsworth (1998) in Australia and Monk and Haller (1993) in the USA both found that school size is related to the number of curriculum offerings. Large schools have more resources and are therefore better placed to offer a large range of curriculum, often including both academic and vocational subjects. Offering a large range of subjects is a luxury that many small schools cannot afford, however. When funding is constrained, schools must often reduce the number of subjects on offer.
Constrained resources force a school to decide which courses it will offer and which ones it will not. Research shows that the relationship between school size and type of curriculum offered is moderated by school socio-economic composition and sector. In the USA, Lee et al. (1998, 2000) and Dalton et al. (2007) found that Catholic high schools, both small and large, offered a mostly academic curriculum. Curriculum offerings were influenced by a school’s resource base and the interests of their ‘clients’ (Lee et al. 2000, 165). Similarly, Monk and Haller (1993, 18) conclude from their study that ‘the impact of school size on academic curricular offerings is highly differentiated’, varying across different curriculum areas and different types of high schools. Small schools are frequently forced to limit their curriculum offerings, and they do so based on the perceived needs and desires of their students and the community. In a low-SES community, the need and desire for vocational curriculum is often strong, which is the reason why many schools in these communities focus on vocational education (Darling-Hammond 2008; Edwards 2006; Jones, Vanfossen, and Ensminger 1995). It is likely that a small school in an affluent community, however, would choose to focus on academic education.

While these above-mentioned studies illustrate relationships between school-level variables on curriculum access for individual students, we lack detailed data about the ways in which access to academic curriculum differs between schools in Australia. We have anecdotal and lay understandings that government schools typically offer fewer academic curriculum subjects than do private schools, as do schools in lower socio-economic communities compared to schools in higher SES communities. We do not, however, have detailed and systematic studies that say what proportion of schools offer advanced mathematics, for example. Research about the relationship between access to academic curriculum, school socio-economic composition, and school sector is also lacking.

Examining how the provision of academic curriculum is patterned across schools in Australia can deepen our understanding about the impact of marketisation on learning opportunities. Since most of the literature about access to academic curriculum comes from the USA, where school choice is less common than in many other countries, the impact of choice and competition is not well understood. Moreover, the USA is a unique case because of its reliance on local funding and administration, a practice which is not common in most parts of the world. It is plausible that access to academic curriculum is more equitable in countries (such as Australia) that have small funding disparities across public schools or that have more centralised educational systems.

The educational marketisation literature has shown how choice and competition have led to increased social segregation and cream-skimming in a range of countries, including Australia (Lamb 2007), Chile (Matear 2006), New Zealand (Waslander and Thrupp 1995), the UK (Goldstein and Noden 2003) and the USA (Carlson, Lavery, and Witte 2011), as well as cross-nationally (Alegre & Ferrer 2010). All of these studies have shown that choice and competition lead to declining enrolments for schools in low socio-economic communities, and that this downward spiral facilitates a transfer of resources from students with the most need to those with the least (Gewirtz, Ball, and Bowe 1995). While many researchers have noted the negative impact of choice and competition for low socio-economic schools and the students that they serve, very little if any of the marketisation research has examined in detail the impact on access to academic curriculum. Our study aims to address this gap in the literature.
Method

Our sample included all secondary schools in greater metropolitan Perth, the capital city of Western Australia. Our sample includes the outlying communities of Armadale, Kwinana and Rockingham. Perth is a prosperous and fast growing city of approximately 1.5 million residents. Labour shortages are pronounced in many fields that require university degrees, such as engineering and healthcare (Australian Government 2010).

The Perth metropolitan area has 130 schools that provide education to Year 12 students (the final year of secondary school in Australia). All schools in the Perth metropolitan area were included in the sample, except for very small schools (Kindergarten-Year 12 schools with less than 500 students) or schools catering solely for children at risk or with special needs. The total sample included 121 schools, which represents almost all Perth metropolitan schools that provide education to students in Year 12. The sample included both government and non-government schools. The non-government sector included Catholic schools, independent Catholic schools (Catholic schools that are not associated with the Catholic Education Office) and independent schools. The sample included 58 government schools and 63 non-government schools, comprised of 15 Catholic schools, 11 independent-Catholic schools and 37 independent schools.

Secondary schools in Western Australia offer academic and vocational education courses. The academic education courses are called ‘Western Australian Courses of Education’ (hereafter called WACE courses) and include around 100 subjects across all the major academic disciplines (e.g. literature, foreign languages, history, maths, sciences). WACE courses are offered at three different levels, with Stage 1 the most basic offering and Stage 3 the most advanced offering. Stage 1 is designed for students who are aiming to enter the workforce or study a skilled trade at a post-secondary vocational education institute. Stages 2 and 3 are geared for secondary students who are planning to study at university. Stage 3 is more difficult and provides students with a stronger weighting on their tertiary entrance score. This study has limited access to academic education (WACE courses).

Our data comes from two government bodies. Data about WACE provision in schools was provided by the Curriculum Council, the state governing body responsible for setting curriculum policy in Western Australia. This data comprises all secondary schools’ curriculum offerings in 2011. We used the My School website (www.myschool.edu.au) to collect contextual information about participating schools, including their size, sector, and socio-economic composition. The My School website is a commonwealth initiative provided by the Australian Curriculum, Assessment and Reporting Authority (ACARA). The website provides statistical and contextual information for all schools in Australia, including the socio-economic composition of the students who attend the school.

My School reports a value for the socio-economic composition of the school, which it calls the Index of Community Socio-Educational Advantage (ICSEA). The mean ICSEA value for all schools in Australia is 1000, with a standard deviation of 100. The average ICSEA value for our Perth sample is higher than the national average, at 1044. This is not surprising since ICSEA values are typically higher in capital cities compared to the national average, which includes rural and regional areas as well. ICSEA values in the national population range from a low of 500
(schools with a very high concentration of students from impoverished backgrounds) to a high of about 1300 (schools with a very high concentration of students from privileged backgrounds). The ICSEA values in our sample range from a low of 814 to 1198. To remain consistent with the academic literature, we will refer to ICSEA as school socio-economic status (SES).

The aim of this study is to analyse how access to academic curriculum is patterned by school sector and socio-economic composition, for the purpose of understanding access to academic curriculum in an education system with high levels of choice and competition. To facilitate the analysis, we divided the sample into quintiles by school SES (ICSEA score). Each quintile has 24 or 25 schools. Table 1 provides summary statistics for our sample.

We then compared schools’ offerings of academic (WACE) subjects across the four main school sectors (government, Catholic, independent-Catholic and independent), as well as across the school SES quintiles. Most school sector studies in Australia use the three main sectors of government, Catholic and independent. Many Catholic schools in WA are from the independent school sector, however. This can make sector comparisons confusing – for example, which Catholic schools are we talking about? Catholic schools, Catholic independent schools or both? We therefore separated independent schools into Catholic and non-Catholic categories to generate more nuanced findings. We made this distinction because we thought it was likely that significant differences existed between Catholic, independent-Catholic, and independent schools.

We compared the number of all academic subjects (WACE courses) that are offered in Perth metropolitan schools by level (Stage 1, 2 or 3). We also compared access to five core academic subjects in literature, science and maths at the advanced level (Stage 3). These are the main subjects that university bound students in Australia would study, and are typically considered the traditional high status curriculum subjects (Teese and Polesel 2003). As mentioned earlier, these subjects are also required for most of the professions that are experiencing labour shortages in WA. We chose the WACE courses that are either prerequisites or recommended for entry into a number of undergraduate degrees: English Literature, Mathematics¹, Mathematics Specialist², Chemistry and Physics. We included both the Mathematics and Mathematics Specialist courses since many students study them in conjunction and because both are required or recommended by universities (School Curriculum and Standards Authority 2012). For our third research question, we only included the Stage 3 offerings of these subjects since this is the stage that is required or highly recommended by universities. Stage 3 offerings also receive additional weighting in tertiary entrance rankings. This means that students who attend schools that do not offer Stage 3 courses are disadvantaged compared to their peers at other schools.

Results

First, we divided schools into school SES quintiles based on each school’s ICSEA value. Table 1 below shows the ICSEA range of each quintile group, as well as the number of schools from each sector in each school SES quintile. As described in the previous section, we refer to ICSEA values in this paper as school SES values. Quintile 1 contains schools with the lowest ICSEA values, and Quintile 5 contains schools with the highest ICSEA values. The schools in the ‘Gov’ column are
Table 1. Summary statistics of sample.

<table>
<thead>
<tr>
<th>School SES quintile</th>
<th>ICSEA range</th>
<th>Average ICSESA score</th>
<th>Average number students</th>
<th>N (and %)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Gov</td>
</tr>
<tr>
<td>1</td>
<td>814–975</td>
<td>927</td>
<td>705</td>
<td>23</td>
</tr>
<tr>
<td>2</td>
<td>976–1018</td>
<td>998</td>
<td>852</td>
<td>17</td>
</tr>
<tr>
<td>3</td>
<td>1023–1070</td>
<td>1044</td>
<td>919</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>1071–1114</td>
<td>1090</td>
<td>1097</td>
<td>8</td>
</tr>
<tr>
<td>5</td>
<td>1118–1198</td>
<td>1160</td>
<td>1209</td>
<td>3</td>
</tr>
<tr>
<td>Total # schools</td>
<td></td>
<td></td>
<td></td>
<td>58</td>
</tr>
</tbody>
</table>

Notes: Percentages denote proportion of schools per quintile group; percentages may exceed 100 due to rounding.
public and schools in the remaining three school sector columns (Catholic, Independent-Catholic and Independent) are all private (non-government).

As shown in Table 1, clear patterns exist between school sector and school SES. All but one school in Quintile 1 is from the government sector, as are 71% of schools in Quintile 2. The proportion of private schools starts to increase in Quintile 3, with the great majority of schools in Quintile 5 coming from the independent sector. In terms of sector, most Catholic schools are in the middle quintile, most independent (both Catholic and non-Catholic) schools are in the two upper quintiles, and most government schools (almost 70%) are in Quintiles 1 and 2. Table 1 also shows that average school SES and average school size are positively related. Schools in Quintile 1 have the smallest enrolment size (on average 705 students), while schools in Quintile 5 have the largest enrolments (on average 1209 students).

We then calculated the average number of courses and Stages offered by schools in each school SES quintile group (Table 2) and sector (Table 3). As discussed earlier, Stage 1 does not provide sufficient preparation for university study, while Stage 3 provides students with the best preparation and opportunity for university study.

As shown in Table 2, schools in Quintile 1 offer, on average, more Stage 1 courses than do schools in Quintile 5; however, the difference in numbers of Stage 1 courses between the lowest and highest quintiles is not large (18 vs. 12). In contrast, the number of Stage 2 courses offered increases as the quintile increases and the difference between the number offered by the first quintile and the fifth is substantial. Schools in Quintile 5 offer, on average, almost twice the number of Stage 2 courses to students compared to schools in Quintile 1 (22 vs. 13). This trend is repeated for Stage 3 subjects; however, schools in Quintile 5 offer, on average, two and a half times the number of Stage 3 courses than schools in Quintile 1 (23 vs. 9). Table 2 also shows that the mean number of Stage 3 courses is positively related to school socio-economic composition; as the SES of the school increases, so does the average number of Stage 3 courses on offer. Finally, Table 2 shows that the proportion of Stage 1, 2 and 3 courses varies substantially by school socio-economic composition. Students who attend a school in Quintile 1 are offered twice as many Stage 1 courses as Stage 3 courses (18 vs. 9). Conversely, students in Quintile 5 schools are offered nearly twice as many Stage 3 courses as Stage 1 courses (23 vs. 12). Schools in Quintile 3 provide equal offerings of Stage 1, 2 and 3 courses (16 respectively).

We also compared the number of WACE offerings at each stage across the four school sectors (Table 3). Catholic schools on average have the most even offering

<table>
<thead>
<tr>
<th>School SES quintile</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>18</td>
<td>13</td>
<td>9</td>
</tr>
<tr>
<td>2</td>
<td>18</td>
<td>16</td>
<td>14</td>
</tr>
<tr>
<td>3</td>
<td>16</td>
<td>16</td>
<td>16</td>
</tr>
<tr>
<td>4</td>
<td>15</td>
<td>21</td>
<td>21</td>
</tr>
<tr>
<td>5</td>
<td>12</td>
<td>22</td>
<td>23</td>
</tr>
</tbody>
</table>
of stages while government schools, on average, offered the least Stage 3 courses and independent Catholic schools offered the most.

Having considered the total number of academic course offerings across all three levels of difficulty, we then analysed the provision of Stage 3 courses by both sector and school SES. The results of this analysis are presented in Table 4.

Table 4 shows that there are very large differences in the provision of advanced (Stage 3) academic courses across schools. Government schools (which comprise all but one school in this school SES group) in Quintile 1 only offer an average of nine Stage 3 courses while schools in Quintile 5, regardless of sector, offer 23 or 24 Stage 3 courses, two and a half times this amount. All schools in Quintile 5, regardless of sector, provide a large number of advanced academic curriculum subjects. Government schools in Quintiles 4 offer more academic curriculum subjects at the advanced level than schools in the three private groups. On average, all sectors offer incrementally fewer academic curriculum subjects at the advanced level as the SES of the school decreases. An exception to this pattern is the Catholic sector, in which the number of advanced academic subjects varies only slightly by school SES quintile group.

We then calculated how many schools within each quintile and sector offered the five core academic curriculum subjects at the advanced level (Stage 3). The subjects are maths, maths specialist, chemistry, physics and literature. As explained earlier, the two maths and two science subjects are those that are most likely to be required by universities. We included English literature as well since literature in the mother tongue is considered a core academic subject in most if not all countries worldwide. These results are presented in Table 5.

As shown in Table 5, all 48 schools except one in Quintiles 4 and 5 offer all five core academic curriculum subjects at the advanced level. There are no sector differences among the two highest school SES groups. As school SES decreases, however, the proportion of schools that offer all five core subjects decreases dramatically in the government and independent sectors. For example, in Quintiles 2 and 3, approximately half of all government schools (8 of 17 schools and 4 of 7...
Table 5. Proportion of schools that offer five core academic curriculum subjects at the advanced level, by school SES and sector.

<table>
<thead>
<tr>
<th>School SES quintile</th>
<th>Gov</th>
<th>Cath</th>
<th>Ind-Cath</th>
<th>Ind</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>9% (2 of 23 schools)</td>
<td>100% (1 of 1 school)</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>2</td>
<td>47% (8 of 17 schools)</td>
<td>100% (5 of 5 schools)</td>
<td>–</td>
<td>50% (1 of 2 schools)</td>
</tr>
<tr>
<td>3</td>
<td>57% (4 of 7 schools)</td>
<td>75% (6 of 8 schools)</td>
<td>–</td>
<td>50% (5 of 10 schools)</td>
</tr>
<tr>
<td>4</td>
<td>100% (8 of 8 schools)</td>
<td>100% (1 of 1 school)</td>
<td>100% (4 of 4 schools)</td>
<td>100% (11 of 11 schools)</td>
</tr>
<tr>
<td>5</td>
<td>100% (3 of 3 schools)</td>
<td>–</td>
<td>100% (7 of 7 schools)</td>
<td>93% (13 of 14 schools)</td>
</tr>
</tbody>
</table>
schools, respectively) and independent schools (1 of 2 schools and 5 of 10 schools, respectively) offer all five core subjects. Most dramatic of all, only 9% of government schools (2 of 23 schools) in the lowest school SES group offer all five key subjects. Another striking result is that almost all (13 of 15) of the Catholic schools offer all five subjects, and that this offering is not patterned by school SES. All of the Catholic schools in Quintiles 1 and 2 offer the five core subjects, compared to 47% of government (8 of 17) and 50% of independent (1 of 2) schools in Quintile 2.

Discussion

Our analysis shows that access to academic curriculum is closely related to school socio-economic composition. Students who attend a middle-high or high SES school (i.e. the two highest school SES quintiles) have the opportunity to study a large range of academic curriculum, especially at the advanced level. For students in middle and middle-low SES schools, however, access to academic curriculum at the advanced level is spotty, and in the lowest school SES quintile (the bottom 20% of schools), this access is severely curtailed. Only 10 per cent of schools in the lowest SES group provide access to core academic curriculum subjects at the advanced level.

Our analysis also shows two main findings regarding sector differences. On the one hand, differences in curriculum access between independent and government schools are not pronounced, contrary to popular opinion in Australia. While government schools on average offer fewer academic curriculum subjects as well as fewer advanced subjects compared to independent schools, these sector differences largely disappear once school socio-economic composition is included in the analysis. On the other hand, however, Catholic (as well as independent Catholic) schools offer a large range of academic curriculum at the advanced level and guaranteed access to the core subjects, regardless of the socio-economic composition of the school. This is contrast to the government and independent school sectors, where access to academic curriculum at the advanced level varies substantially by school socio-economic composition. This finding is in line with research by Dalton et al. (1997) and Lee et al. (1998) that Catholic schools in the USA are more likely to provide core academic curriculum subjects than other schools.

Access to academic curriculum at the advanced level is also related to school size. Schools in the lowest SES quintile are on average the smallest of all the schools in our sample. Indeed, our analysis shows that enrolment size is positively related with socio-economic composition, a finding that has been shown elsewhere in Australia by Lamb and colleagues (2001), Lamb (2007). As Lamb (2007) has shown, low-SES schools are smaller than other schools because the dynamics of choice and competition – key features of marketisation – have decreased their enrolments. With declining enrolments comes declining resources. It is likely that the small size of these schools forces principals to make hard decisions about what subjects they choose to offer their students.

We would strongly disagree that limited access to academic curriculum in low-SES schools is a reflection of all students’ abilities and interests. We would also argue that in a comprehensive education system, all students, regardless of their social background or place of residence, should have access to academic curriculum without having to pay school fees. Since our findings show that this is currently not
the case, we recommend that government authorities implement policies that will ensure this access. The current mechanism – allowing students to apply to a non-local government secondary school – is not adequate because admission is not guaranteed. This is especially problematic since many government schools that offer a solid range of academic curriculum, especially at the advanced level, are over-subscribed.

One policy recommendation would be to create upper secondary public schools (for example, for Years 11 and 12) that offer academic curriculum only. These schools would cater to students who are interested in studying academic curriculum, which would ensure enough students to efficiently offer these subjects. In the spirit of comprehensive education, these schools would not be academically selective, and would be required to enrol all students who reside within the catchment area. Every catchment area (and community) would be guaranteed an upper secondary school. Students would also have the opportunity to study at their local regular secondary school instead, many of which offer vocational curriculum and many of which are small. As Leithwood and Jantzi (2009) show, small secondary schools, especially in low SES communities, have many advantages including lower dropout rates and higher levels of student engagement. Another advantage of this approach is that it would free schools to improve their vocational curriculum offerings, which are often low quality (Polesel 2008).

Another policy option would be to leverage the very large private school sector. Students who do not have access to academic curriculum at their local government school would receive a voucher to attend a private school without having to pay school fees. The disadvantage of this approach is that it would contribute to a further erosion of the public education system. We agree with Pasi Sahlberg, the Minister of Education in Finland, that a well-resourced public education system is the best foundation for promoting educational equity and excellence (Sahlberg 2011).

Finally, education authorities could mandate that all schools provide access to academic curriculum, either at their own school or through network of collaborating schools. We are currently collecting data from school principals about the rationales behind their curriculum offerings and the alternatives that they provide. Our preliminary findings show that some Perth metropolitan schools are establishing networks with other schools as a way to increase the range of academic curriculum that can be accessed by students. This is a good short-term solution, but it requires substantial planning and resources; it is also dependent on the good will and commitment of individual principals. As a school-based approach, it is bound to be ad hoc and sporadic. We would therefore argue instead for a system approach, such as our first policy option.

**Conclusion**

Our study has shown that students who attend low-SES schools have substantially less access to academic curriculum than do students in other schools. This inequality of educational opportunity contradicts the Australia national ethos, which is based on the notion of giving everyone a ‘fair go’ regardless of their social background (Commonwealth of Australia 2007). It is also a striking finding given the fact that Australia is a prosperous country that regularly faces labour shortages in professions that require preparation in academic curriculum subjects (Australian
Government 2010). Finally, the lack of opportunity in our study is not associated with the degree of under-resourcing that is common in inner-city school districts in the USA. Rather, it appears to be a consequence of declining enrolments and high levels of social segregation between schools, both of which are the result of choice and competition (Edwards 2006; Lamb 2007; Rothman 2003). We argue that choice and competition have eroded equal opportunities to access academic curriculum for students in working-class communities.

Providing equitable access to educational opportunities is understandably difficult in sparsely populated locations. Failing to provide equitable access in major metropolitan areas in one of the most prosperous countries on the globe, however, is inexcusable. Choice and competition have made the task of providing equal educational opportunity more difficult. The challenge for Australian policymakers and researchers is to find a way to redirect these forces for the good of all students.

Acknowledgements

This study was supported by a grant from the Australian Research Council’s Discovery Projects funding scheme (project number 1097057) awarded to Laura Perry.

Notes

1. The Mathematics course covers the main principles related to number and algebra, space and measurement, and chance and data. The course is offered at three levels, with calculus included at the Stage 3 (advanced) level (School Curriculum and Standards Authority 2012).

2. The Mathematics: Specialist course prepares students for ‘for university entry to specialist courses such as engineering, physical sciences and mathematics and is usually studied in conjunction with the Mathematics course.\[with an\] emphasis on pattern recognition, recursion, mathematical reasoning, modelling, and the use of technology (School Curriculum and Standards Authority 2012). The course is only offered at the advanced (Stage 3) level.

References


