

June 2020

## COVID catch-up

Helping disadvantaged students  
close the equity gap

Julie Sonnemann and Peter Goss



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## Grattan Institute Report No. 2020-08, June 2020

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## Overview

There is good reason to send children to school. Students tend to learn less when they are not in regular class, and new data from Australian teachers show this is likely to have been the case during the COVID-19 lockdowns. In one survey of more than 5,000 teachers in NSW, only 35 per cent were confident their students were learning well in remote learning. In disadvantaged schools, only 15 per cent of teachers felt assured of student progress.

Many disadvantaged students, who were already falling behind before the crisis, will have slipped further back. We find the achievement gap widens at triple the rate in remote schooling compared to regular class. Even if remote learning was working well, disadvantaged students are likely to have learnt at about 50 per cent of their regular rate, losing about a month of learning over a two-month lockdown.

As schools reopen, most students will recover quickly, but disadvantaged students will need extra support to catch up. Governments are spending big to stimulate the economy, and some stimulus money should go to help disadvantaged students. Teachers will be swamped for the remainder of 2020, and extra support will go a long way.

We recommend a recovery package of \$1.25 billion targeted at 1 million disadvantaged students for the next six months. One-off, extra 'catch-up' funding should go directly to schools to spend in the remainder of 2020, with government guidelines on high-priority initiatives.

To spend the money well, schools will need to closely assess the learning needs of their students when they return to school. If student needs are not pinpointed, the right supports will not follow. We suggest the national assessment body, ACARA, be responsible for creating a \$20 million package of suitable in-class assessment tools, so that teachers can readily identify and monitor student progress.

We recommend governments promote two high-priority initiatives for schools to take up where relevant. These initiatives are proven to be effective across many schools, they can be implemented quickly, and they would also help stimulate the economy. They are not necessarily the cheapest options, but they have the highest chance of success.

First, we recommend big investments of \$1.13 billion in small-group tuition programs. Disadvantaged students would receive regular short sessions in reading and maths, three or four times a week over a 12-week period. Tuition is expensive, but it can increase student learning by an additional five months over one or two terms of schooling. Young university graduates and pre-service teachers should be hired as tutors where possible, because they will be hit harder by the recession than older Australians and are likely to spend the extra income quickly, stimulating the economy.

Second, we recommend expanding successful literacy and numeracy programs, especially for students in the early years.

Governments should also conduct trials of 'targeted teaching' and extra student well-being supports, but on a smaller scale. Evaluating what works should inform longer-term efforts to close the bigger existing equity gap between disadvantaged students and the rest. The economic benefits of our reform package vastly outweigh the costs; we estimate it would deliver \$3.5 billion in extra future earnings for disadvantaged students.

The COVID-19 lockdowns have given many Australians a new appreciation of their children's schooling, and how hard teaching and learning can be. The achievement gap for disadvantaged students is unfair, costly, and widening. Australia should now seize the opportunity to narrow it.

## Recommendations

Australian governments should:

1. Invest in a \$1.25 billion national catch-up strategy over six months for disadvantaged students hardest hit by the shift to remote schooling during the COVID-19 crisis.
2. Provide the one-off 'catch-up' funding to schools to spend in the remainder of 2020, so that it helps stimulate the economy as Australia battles recession.
3. Provide \$20 million to the Australian Curriculum, Assessment and Reporting Authority (ACARA) to create a package of suitable in-class assessment tools, so that teachers can identify and monitor struggling students.

State and territory governments should:

1. Give the catch-up funding to schools with clear guidelines about high-priority initiatives to consider.
2. Encourage schools to focus on assessment of disadvantaged students' learning on return to school, so that the right supports can follow.
3. Promote two high-priority initiatives; small-group tuition (up to \$1.1 billion), and successful literacy and numeracy instruction programs (\$70 million), especially for students in the early years of their schooling.
4. Invest \$30 million in small-scale trials of three promising initiatives: 'targeted teaching'; teacher training in developing students' social and emotional skills; and targeted behaviour supports.
5. Promote small-group tuition programs that employ university graduates (from a range of fields) as well as pre-service teachers, because they are likely to spend the extra income which will help stimulate the economy.
6. Give schools a list of 'quality assured' program providers, and subsidise partners where appropriate.
7. Direct \$95 million of the funds (about 10 per cent) to rigorous evaluations of the initiatives to identify what works and how best to implement it.
8. Invest in longer-term strategies to help close the existing equity gap in education, which is much greater than the gap caused by learning losses from the COVID-19 disruptions.

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## 1 Students learnt less during the COVID-19 disruptions, especially disadvantaged students

Students tend to learn less when their schooling is done remotely rather than in the classroom. The longer they are away from regular classes, the worse the damage can be.

Australian teachers believe students learnt at only about 50-to-75 per cent of their usual pace during the COVID-19 lockdowns. Disadvantaged students, who were already falling behind before the crisis, will have slipped further back.

### 1.1 COVID-19 forced schools to quickly switch to remote learning

Many Australian schools shifted to 'remote schooling' for parts of Terms 1 and 2 in response to the COVID-19 lockdowns. It was not easy. Teachers were forced into new ways of working at short notice, with little technical training or time to develop remote lesson plans. Parents were also caught off guard, having to juggle work and other commitments with children learning at home.

State governments stepped up by developing template lesson plans and web platforms of teaching resources. Many teachers went above and beyond, delivering hardcopy learning packs to children with limited or no internet access, and making follow-up phone-calls to check on their progress.

But despite best efforts, most students are likely to have learnt less. For a start, teachers switched to remote schooling without a solid evidence base for how to teach well online, an area that is still emerging.<sup>1</sup> Fortunately many students will catch-up on the learning lost without too much trouble. But for some, especially disadvantaged students, the learning losses will be bigger and harder to overcome.

1. See Evidence for Learning (2020a).

### 1.2 Teachers believe their students learnt less, especially disadvantaged students

Some students will have thrived while learning remotely, and some will have cruised. But on the whole, Australian teachers believe students are likely to have learnt less during remote schooling than regular class.

A national survey by *Pivot* of 320 teachers in May showed that most teachers believed students learnt at about 50-to-75 per cent of their regular pace during remote schooling.<sup>2</sup> Teachers in disadvantaged schools were more pessimistic, with most reporting that their students learnt only 25-to-50 per cent of what they would normally learn in class (see Figure 1.1 on the following page).

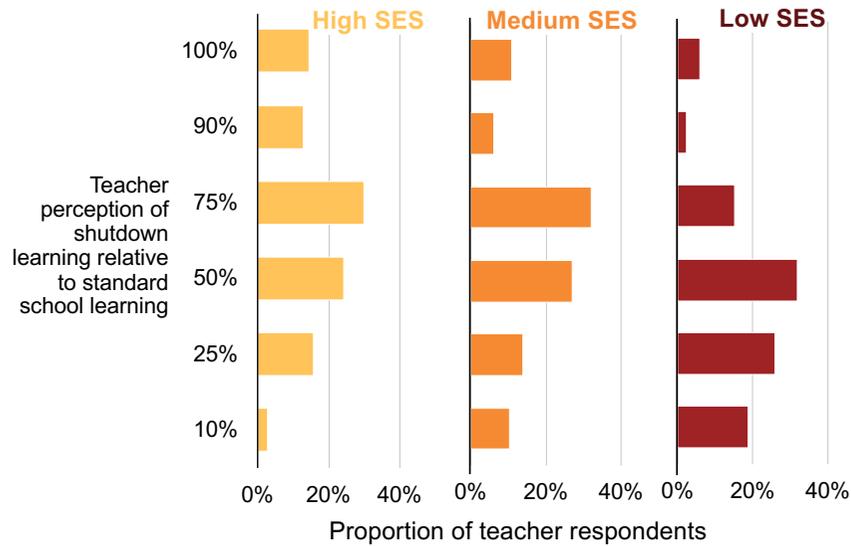
Another survey of more than 5,000 NSW teachers had similar findings.<sup>3</sup> In high-SES schools, only 35 per cent of teachers were confident that students were learning well during remote schooling. In low-SES schools, only 18 per cent of teachers shared that confidence.<sup>4</sup>

2. See *Pivot* (forthcoming). The Survey included respondents from Victoria, NSW, Queensland, Western Australia, South Australia, and the ACT.

3. The NSW survey was conducted from 17 April to 10 May 2020, by Rachel Wilson and Susan McGrath-Champ from the University of Sydney and William Mude from Central Queensland University. See Wilson et al (forthcoming).

4. 2,755 teachers answered this question.

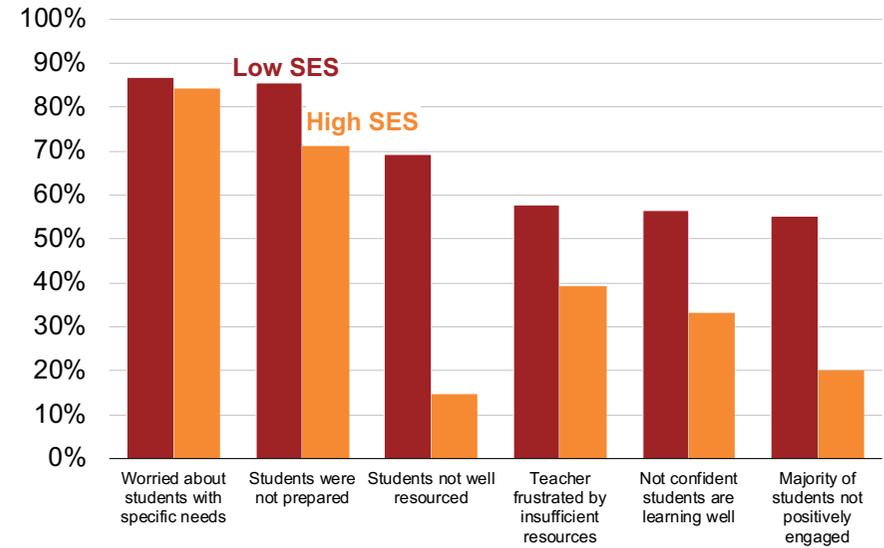
**Figure 1.1: Most teachers in low-SES schools believe students learnt only 25-to-50 per cent of what they would normally learn in class**



Source: Grattan analysis of Pivot (forthcoming).

**Figure 1.2: Many teachers believe students were not well prepared for remote learning, especially students in low-SES schools**

Percentage of teachers who agree or agree strongly with the following propositions to describe the experience of teaching and learning at home



Source: Grattan analysis of Wilson et al (forthcoming).

Teachers' concerns were not due to a lack of support from schools; 70 per cent of NSW teachers surveyed felt the arrangements were an adequate substitute given the circumstances. Remote schooling was simply a challenging task. More than 70 per cent of teachers in all schools felt their students were not prepared to learn at home. About half of teachers were frustrated by insufficient resources and daily technical difficulties. Again, these challenges were exacerbated in low-SES schools (see Figure 1.2 on the previous page).

The NSW teachers surveyed also reported being very stretched in the lead up to, and during, remote learning. Most teachers said their work became more complex, with longer working hours and longer preparation time.<sup>5</sup>

These survey results confirm what we have known for a long time – there is good reason to send children to school. Studies of even brief disruptions to school show they hurt children's education (see Box 1).

### Box 1: Even short school disruptions cause learning losses

Students whose regular schooling is disrupted tend to learn less. In America and Canada, students affected by weather-related closures do less well in exams.<sup>a</sup> A 2014 study of pupils from Massachusetts in the US found that in years where there were higher snow falls, students did less well.<sup>b</sup>

Over the US summer break, young children are estimated to lose up to three months of learning from the previous school year.<sup>c</sup> Studies in France and Argentina show teacher strikes result in students achieving less and fewer students completing school.<sup>d</sup> Studies of fully online schools in the US consistently show that students learn much less than their peers in traditional face-to-face classes.<sup>e</sup>

Digital learning is more effective when it is a supplement to, rather than a significant replacement for, classroom teaching.<sup>f</sup>

- a. Marcotte and Hemelt (2008), J. Goodman (2014).
- b. J. Goodman (ibid).
- c. Burkam et al (2004), Quinn et al (2016).
- d. Jaume and Willén (2019), Belot and Webbink (2010).
- e. Woodworth et al (2015), Fitzpatrick et al (2020), Heppen et al (2017), Zimmer et al (2009) and Ahn and McEachin (2017).
- f. Evidence for Learning (2020b).

5. 92 per cent said their work became more complex, 85 per cent spent more time on administrative tasks, 80 per cent spent more time preparing lessons, and 74 per cent reported an overall increase in working hours. Teachers also reported an increase in their work hours, and in the complexity of tasks, over the last five years before the shift to remote schooling. See Wilson et al (forthcoming) and McGrath-Champ et al (2018).

### 1.3 Disadvantaged students face major barriers when learning remotely

Remote learning requires students to be motivated and to work through large parts of the curriculum independently. Most students struggle to pace themselves, but it is especially hard for disadvantaged students who are already behind and who are often less motivated to learn (see Figure 1.4 on the next page).<sup>6</sup>

Disadvantaged students often have a home environment that is not conducive to learning, and get less help from parents compared to their advantaged peers (see Figure 1.3 on the following page). They often have poorer internet access and fewer technological devices, and are less likely to have a desk or quiet place to study.

Economic downturns can disproportionately harm disadvantaged students. They tend to have greater financial stress in the home, which can make learning harder.<sup>7</sup> During the COVID-19 crisis, where parents may have lost jobs or income, the student's home environment is likely to have suffered.

Remote schooling is hard for teachers too. It's harder to oversee students' work, and there is less opportunity to give face-to-face feedback. Where teachers are not well trained in ICT, or in how to teach remote lessons to a high quality, students are likely to learn less.<sup>8</sup>

Remote learning *can* produce positive results. But success depends on a good home learning environment, high levels of student motivation and capability, and high-quality teaching.<sup>9</sup> This is unlikely to have been the experience of many disadvantaged students during the COVID-19 disruptions.

Disadvantaged students had the opportunity to attend physical school campuses during remote schooling, but there is little publicly-available data on the extent to which this occurred.

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6. Azevedo (2005).

7. Ananat et al (2011) found an 8 per cent of a standard deviation decrease for every 1 per cent of job losses across the state, while Ruiz-Valenzuela (2015) found 13 per cent of a standard deviation decline for students whose father lost their job during recession. Learning losses are particularly concentrated among children in already disadvantaged families. Hill et al (2011) and Rege et al (2011) suggest effects on children whose parents did not lose their job are 30-to-56 per cent the size of the effects on children who have one or both parents lose their job: Ananat et al (2011).

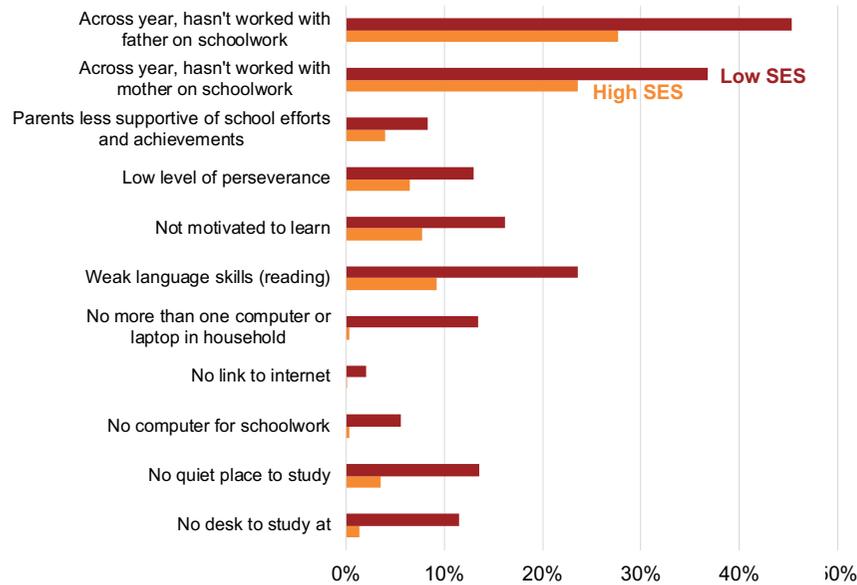
8. OECD data shows that only 39 per cent of teachers feel well prepared or very well prepared in how they use ICT for teaching: OECD (2019).

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9. Successful remote learning approaches are described in Evidence for Learning (2020a).

**Figure 1.3: Disadvantaged students have fewer resources and less support at home**

Estimated differences by social background for Australian 15-year-olds (%)



Notes: Derived by CIRES and Mitchell Institute (2020) from PISA 2018. 'Low SES' is bottom 20 per cent and 'High SES' is top 20 per cent. Socioeconomic status (SES) is measured by the OECD's index of economic, social, and cultural status (ESCS). The ESCS index is created from measures of parental occupational status, parental education, and family wealth.

Source: CIRES and Mitchell Institute (ibid).

**Figure 1.4: Problems for disadvantaged students when learning from home**

|          | Effective remote learning requires...                             | Disadvantaged students typically have? |
|----------|---|--|
| Home     | Home environment conducive to learning                            | Low                                    |
|          | Access to digital devices and internet connectivity               | Low                                    |
|          | Parental / other support for learning at home                     | Low                                    |
| Student  | Capabilities and motivation for independent learning              | Low                                    |
|          | Adapting to new routines for learning                             | Low                                    |
|          | Coping with fewer social interactions with peers                  | Low                                    |
|          | Well-being and good health  | Low                                    |
| Teaching | High-quality instruction e.g. online feedback                     | ?                                      |
|          | High-quality materials and lesson plans                           | ?                                      |
|          | Adequate time on task, practice                                   | ?                                      |
| School   | Supplementary school support e.g. breakfast programs, counselling | ?                                      |

Source: Grattan analysis.

#### 1.4 The most vulnerable students

We identify four groups of students who are especially vulnerable during remote learning. The first comprises students from typically low-achieving education groups, for whom the extra challenges of remote schooling are likely to compound existing inequalities. This includes students from low socio-economic families, indigenous backgrounds, and remote communities (see Box 2).<sup>10</sup>

The second group is a sub-set of the first: disadvantaged children in the early years and at other vital transition points. Young children are especially vulnerable because they are still developing key foundational skills such as reading and writing. Students at vital transition points – in Years 6, 11, and 12 – are also more vulnerable. ‘At risk’ teenage students already disengaged with school may see the remote learning period as the final straw.

The third comprises students with poor mental health or existing social or behavioural problems. The increased isolation and anxiety brought about by COVID-19 may exacerbate existing problems, making it harder for students to learn when they return to school.<sup>11</sup>

The fourth group comprises students with special learning needs. Such students often rely on specialist support and are likely to have slipped back without it (these students are not directly considered in this report).

#### Box 2: Disadvantaged students are a long way behind

Students from low socio-economic families start school behind their peers, and continue to fall further behind over time.<sup>a</sup> Grattan Institute analysis of 2019 NAPLAN data shows that by Year 9, in numeracy, students whose parents have low levels of education are more than three years behind students with highly educated parents.<sup>b</sup> Indigenous students are about three years behind non-Indigenous students in Year 9. Remote students are typically more than two years behind their metro peers.

At age 15, about 20 per cent of Australian students do not meet minimum proficiency standards, according to international benchmarks (see Figure 1.5 on the following page).

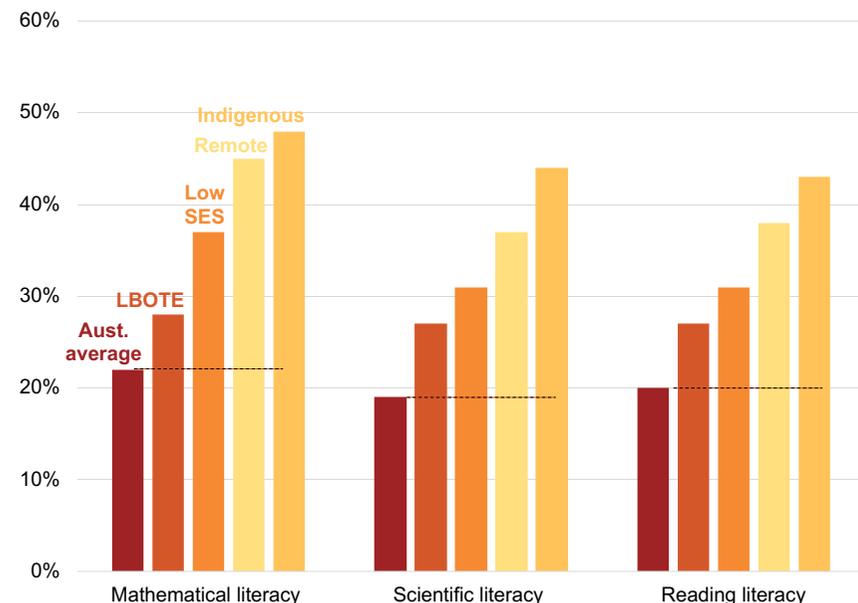
- a. According to CIRES and Mitchell Institute (2020, p. 1), when they start school, about 23 per cent of disadvantaged children are not yet ready for school compared to 7 per cent of advantaged children, based on teacher assessment of their language and cognitive skills.
- b. This analysis uses the methodology employed in Goss and Sonnemann (2016). ‘Low educated’ parents are those whose highest education level is no higher than a certificate; ‘high educated’ parents are those with a bachelor degree or above.

10. Student family background is associated with academic achievement, see OECD PISA Equity in Education, OECD 2018, Goss and Sonnemann (2016).

11. Even in ‘usual’ schooling circumstances, these students are typically more than a year behind: Goss (2019).

**Figure 1.5: Many vulnerable students fail to meet minimum proficiency standards by age 15**

Percentage failing to meet basic proficiency, age 15, PISA 2018



Notes: LBOTE = language background other than English. Low-SES students are in the lowest 25 per cent. Thomson et al (2019, xxxi and 11).

Source: OECD PISA (2018) summarised in Thomson et al (ibid, pp. xxi–xxvi).

### 1.5 Once behind, it is hard to catch-up

Disadvantaged students who fell further behind during the COVID-19 crisis will find it hard to catch-up. If concepts are missed in learning, it can be hard to develop new skills down the track. The ‘Matthew effect’ shows that missing concepts or skills can impede the take-up of new skills.<sup>12</sup> Struggling students can become less motivated, and the problems compound.

For example, students who struggle to master ‘decoding’ (spelling-to-sound) early on tend to read fewer words than their peers.<sup>13</sup> With limited vocabulary, these students don’t enjoy reading as much as their peers, and they spend less time practising. This can then affect their participation in other subjects that depend on reading, and they can fall further behind in other subjects as well.

If students do not catch-up, there are real, life-long consequences. Low achievement at school can limit options for further study and work later on.<sup>14</sup> People with poorer educational results are more likely to be unemployed and to have lower lifetime earnings.<sup>15</sup>

12. Masters (2005, p. 17), Allington (2008), Dougherty and Fleming (2012) and Hanson and Farrell (1995).

13. Cunningham and Stanovich (1997).

14. OECD (2014, p. 252).

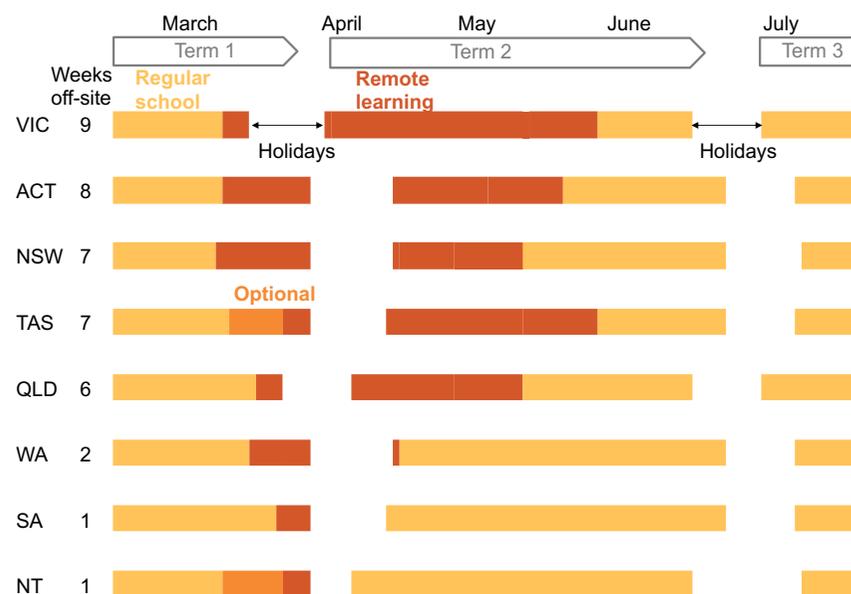
15. Leigh (2010), Cassells et al (2012) and ABS (2014).

### 1.6 Students in the five states and territories that had the longest periods of remote schooling will have lost the most

The learning losses will be largest in the states and territories with the longest periods of remote schooling and student-free days. Victoria (nine weeks) and the ACT (eight) had the longest periods of remote schooling, followed by NSW (seven), Tasmania (seven), and Queensland (six). Western Australia had two weeks, and South Australia and the Northern Territory each had only one week of remote learning (see Figure 1.6).

For some students remote learning continued for longer if their parents kept them at home outside the official periods.

Figure 1.6: Remote schooling lasted up to nine weeks



Notes: Weeks off-site include: student-free days; periods of remote learning; and partial return to school, where students either returned to school for a reduced number of days or there was a staggered return of different grade levels. 'Optional' includes periods where governments gave parents the choice as to whether their children attended school.

Source: Grattan analysis, based on state/territory media releases, Feb-May 2020.

## 2 The achievement gap widened during the COVID-19 disruptions

Remote schooling widens the achievement gap between disadvantaged students and their more advantaged peers. We estimate the equity gap grows at triple the rate during remote schooling. Even where remote schooling has worked well, our projections suggest that many disadvantaged students are likely to have learnt at about 50 per cent of their regular rate, losing four weeks compared to what they would normally learn over a two-month period.

But the COVID-19 learning losses must be kept in perspective. The existing achievement gap is more than 10 times greater than the gap that will have developed during the COVID-19 disruptions. Governments must tackle deeper long-term problems affecting our most vulnerable students.

### 2.1 A rigorous literature review underpins our modelling

A number of researchers in Australia and around the world have produced quick and useful analyses of the likely impacts of the COVID-19 crisis on student learning.<sup>16</sup> In this report, our new analysis is based on a more systematic review of the literature on school closures led by the UK Education Endowment Foundation (EEF) in 2020.<sup>17</sup>

The EEF review examined whether disadvantaged children fall further behind their peers during schooling disruptions. It searched literature across a variety of scenarios causing school disruptions, including extreme weather, summer holidays, and teacher strikes. Only a small

subset of studies were sufficiently robust and relevant for modelling purposes (see Box 3 on the following page).

The review suggests that school disruptions widen achievement gaps for disadvantaged children. These findings affirm Australian teachers' concerns about the slow progress of students during remote schooling, especially the concerns of teachers in disadvantaged schools (see Chapter 1).

We have applied the review findings to estimate the learning losses during remote learning in Australian states and territories.

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16. Australian studies include CIREs and Mitchell Institute (2020) and Joseph and Fahey (2020). UK papers include Vignoles and Burgess (2020), Burgess and Sievertsen (2020) and Kuhfeld and Tarasawa (2020).

17. See EEF (2020a). Grattan Institute staff contributed to the EEF review in May 2020.

### Box 3: Only a handful of studies were sufficiently robust

The EEF literature review (2020), which underpins our modelling projections, adopted high standards and included only nine quantitatively robust studies<sup>a</sup> (see Appendix B). The nine robust studies are all based on the literature on learning loss during summer holidays. Summer holidays are different to remote schooling, but these studies can isolate the influence of home factors on a student's learning.

Other studies on online schools were not included because they did not meet review inclusion criteria and were not considered a good proxy for remote schooling, where teachers had less training and time to prepare.<sup>b</sup>

Studies on the impact on student learning of hurricanes, earthquakes, and bushfires were also less relevant because affected students were often enrolled in nearby schools rather than remote learning.

- a. The review includes only empirical studies, meta-analyses, or systematic reviews that provide evidence about the impact of school closure or missing school on attainment. See EEF (2020a).
- b. In addition, students in online schools may have unique characteristics not easily disentangled from the student results. By comparison, the summer learning loss literature examines large, representative student populations.

## 2.2 The achievement gap grows three times faster during remote schooling

Figure 2.1 on the next page shows the likely increase in the achievement gap during remote schooling in Australia. We estimate that over two months of remote learning, the achievement gap will widen by 7 per cent, which is about an additional 6 weeks of learning.<sup>18</sup> The gap increases three times as fast as when students are at school.<sup>19</sup> For every day students are not at school, existing inequities are compounded at a faster rate.

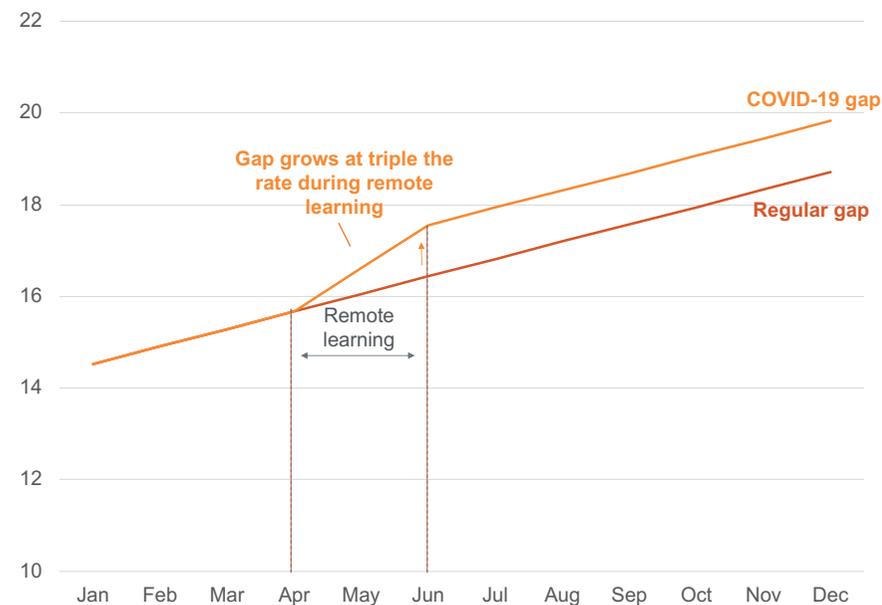
In Table 2.1 on the following page, we show the likely increase in the achievement gap for each state and territory. The gap widened by an extra five-to-seven weeks during the COVID-19 crisis in five states and territories: Victoria, the ACT, NSW, Tasmania, and Queensland.

We do not estimate different impacts for different subjects or age groups, because the EEF systematic literature review did not turn over any evidence of such differential impacts.<sup>20</sup>

18. This estimate includes both the amount that the gap would normally widen as well as the extra COVID-19 induced widening of the gap. Our projections use findings from the EEF rapid literature review, see EEF (2020a), which found a 0.022 Standard Deviation increase in the gap per month of school closure. The estimated rate of gap widening varied substantially between studies, meaning that there is a high level of uncertainty around this average of 7 per cent, ranging from 3.2 per cent to 10.6 per cent. We estimate the gap in the Australian context using historical NAPLAN data, based on the Equivalent Year Level (EYL) metric approach from Goss and Sonnemann (2016). The gap increase is similar for both literacy and numeracy: 7.5 per cent and 6.3 per cent on average respectively.
19. We estimate the 'usual' rate of increase in the achievement gap using NAPLAN data from 2010 to 2019.
20. There were insufficient studies of the association between gap estimates and age, subject, or achievement level to draw any conclusions. These findings are an 'absence of evidence', rather than clear evidence of no difference.

**Figure 2.1: The achievement gap grows three times faster during remote schooling**

Achievement gap between disadvantaged and advantaged students in months, average of reading and numeracy, Year 5 students, 2020 projection



Notes: The 'gap' is defined as the difference in learning between disadvantaged students and all other students. Disadvantaged students are those whose parents (a) completed Year 11 or below, or (b) have a certificate. The proportion of students classified as disadvantaged is 38 per cent. The COVID-19 gap growth rate during remote learning is based on the estimate from EEF (2020a). We estimate the 'gap in months' using the EYL methodology from Grattan's 2016 Widening Gaps report, see Goss and Sonnemann (2016).

Source: Grattan analysis of NAPLAN data 2010 to 2019.

**Table 2.1: The gap will have increased by an extra five-to-seven weeks on average in five states and territories**

|     | Remote learning duration | Widening of the gap during remote learning (percentage) | Widening of the gap during remote learning across literacy and numeracy (weeks) |
|-----|--------------------------|---|---|
| VIC | 9 weeks                  | 8%  | 6.6 weeks   |
| ACT | 8 weeks                  | 7.5%  | 5.9 weeks   |
| NSW | 7 weeks                  | 6%  | 5.1 weeks   |
| TAS | 7 weeks                  | 6%  | 5.4 weeks   |
| QLD | 6 weeks                  | 5%  | 4.4 weeks   |
| WA  | 2 weeks                  | 1%  | Negligible  |
| SA  | 1 week                   | 1%  | Negligible  |
| NT  | 1 week                   | 1%  | Negligible  |

Source: Grattan analysis.

### 2.3 Disadvantaged students may have learnt very little

We have used our projections on the widening of the gap to extrapolate the amount of lost learning for disadvantaged students. Our interpretation is intended as a rough guide only.

Under a variety of scenarios, we find that disadvantaged students are likely to have learnt much less than normal.

First, we assume a ‘good’ scenario of high quality remote learning where advantaged students make 100 per cent of their regular progress in reading and numeracy over two months. Using our gap growth projections, we extrapolate that disadvantaged students would make around 50 per cent, or four weeks less, than their regular learning progress over the two-month period.<sup>21</sup>

Under a ‘bad’ scenario of lower quality remote learning where advantaged students make only 60 per cent of their regular progress, we estimate that disadvantaged students will have made no learning progress at all, and will return to school about 2 months behind where they would usually be at this time in a school year.

If the latter scenario is closer to reality, it is an even bigger challenge to help disadvantaged students catch up in the remainder of 2020.

#### 2.3.1 Our estimates are a rough guide only

Our estimates are a rough indication of likely learning losses, and there are a number of limitations of our modelling. One limitation is that our estimates are based on the literature about learning losses during summer holidays, and do not completely take into account the impact of remote learning programs, including the efforts by schools

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21. We infer this amount by using historical NAPLAN data on typical learning progress of advantaged and disadvantaged students, along with our modelling on the projected increase in the gap by 7 per cent during COVID-19 disruptions.

and teachers to make remote learning work well.<sup>22</sup> This could make our estimates of the how much the gap widens either smaller or larger.<sup>23</sup> Given teacher surveys on the likely low rates of student learning, especially for disadvantaged students (cited in Chapter 1), we do not believe that remote learning will have stemmed the likely learning losses for the most vulnerable children.

A second limitation of our modelling is that it does not take into account possible negative impacts of the economic downturn on student achievement. Downturns can cause extra financial stress in the home, which in turn can affect student learning.<sup>24</sup> If included, the learning losses may have been even greater than we project.

Despite these limitations, our projections should serve as a rough guide to possible learning losses during the COVID-19 shutdowns. They should sound the alarm bell for policy makers on what damage may have been done, and on the extent of catch-up that is required. Australia is lucky that remote learning did not last longer.

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22. The studies on summer holidays were mostly of students in the first two years of school.

23. For example it is possible that the learning gap may have widened faster during the COVID-19 disruptions than during summer holidays, if advantaged students adapted well to the remote learning and made good progress while disadvantaged students struggled much more. On the other hand, remote learning may have provided a more consistent learning program for all children which could have slowed the widening of the learning gap which would normally occur during summer holidays.

24. Ananat et al (2011), Ruiz-Valenzuela (2015), Hill et al (2011) and Rege et al (2011). A recent Mitchell Institute report on the impacts of COVID-19 related unemployment on vulnerable Australian children estimates that children whose parents are experiencing involuntary unemployment can be 15% more likely to repeat a grade at school, more likely to leave school early, and less likely to attend university: Noble et al (2020).

Our findings do not suggest that governments made wrong decisions about moving to remote schooling – that call should always balance the health risks as understood at the time against the education costs.<sup>25</sup>

### 2.4 The COVID-19 crisis draws attention to a bigger existing gap

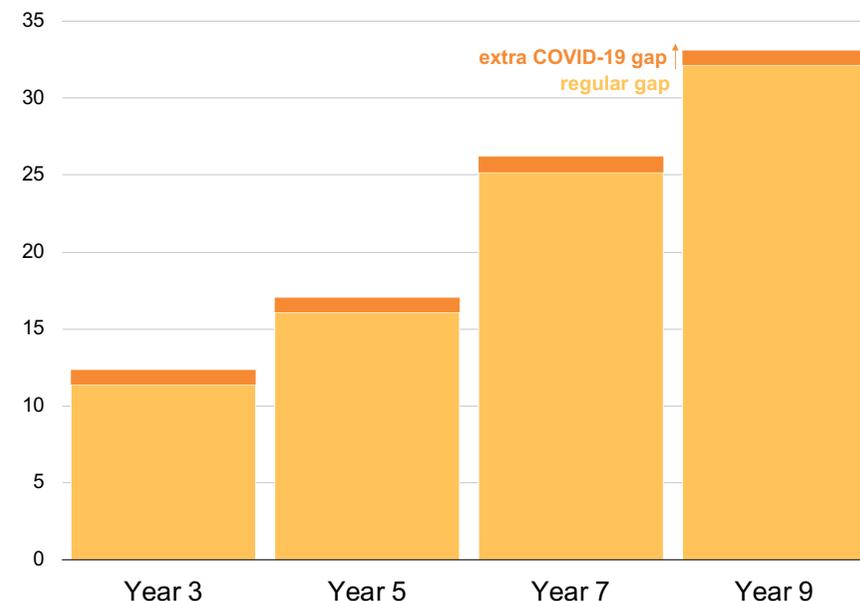
The losses from remote learning during the COVID-19 shutdowns are concerning but should be kept in perspective. The size of the *existing* achievement gap is much, much larger than the learning losses caused by COVID-19. On average, the existing gap is about 10 times larger.

Figure 2.2 shows the COVID-19 losses in the context of the existing gap. For a Year 5 student, COVID-19 will have caused the gap to increase by an extra 1 month, but this is on top of an existing gap of 16 months.

Australia must not take its eye off the bigger equity problem. Big, long-term solutions are needed to tackle the very large achievement gap entrenched in our system.

**Figure 2.2: The existing achievement gap is much larger than the extra gap caused by COVID-19 remote schooling**

Achievement gap between advantaged and disadvantaged in months, average reading and numeracy, 2020 projection



*Notes: The 'gap' is between disadvantaged students and all other students, as described in the notes under Figure 2.1 on page 16. The 'regular' gap is projected using average gaps over 2010 to 2019. The 'extra COVID-19 gap' uses estimate from EEF literature review 2020. The gap in months uses the EYL methodology from Grattan's 2016 Widening gaps report, see Goss and Sonnemann (2016).*

*Source: Grattan analysis of NAPLAN data (2010 to 2019), source estimate from EEF literature review: EEF (2020a).*

25. Duckett and Mackey (2020).

### 3 Our recommended catch-up strategy

Catch-up is hard but possible. We recommend governments adopt a targeted strategy to help disadvantaged students catch-up across Australia. Schools should be given a ‘catch-up’ loading over the next six months, with guidelines on priority initiatives to consider. A condition should be that all students’ learning needs are assessed on return to school.

Catch-up initiatives should have high impact, should be quick to implement, should have a track record of successful implementation, and should help stimulate the economy through a recession. We recommend two initiatives that meet this criteria. First, small-group tuition programs for students who are far behind. Second, successful literacy and numeracy programs. We also recommend governments help with small-scale trials for three high-impact initiatives where implementation is harder, but which might prove valuable in reducing the large existing achievement gap in the longer term. These are: targeted teaching, teacher training in teaching of social and emotional skills, and targeted behaviour support.

#### 3.1 Strategies should target disadvantaged students

Most students will catch up on learning losses from remote schooling without too much trouble, but disadvantaged students are unlikely to get there on their own.

Teachers will have their hands full as schools re-open, and will need extra support to ensure disadvantaged students get the attention they need. In a survey of 300 teachers across Australia, almost all believed extra catch-up support would be needed.<sup>26</sup>

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26. Pivot (forthcoming).

We recommend government catch-up strategies focus intensively on disadvantaged students, rather than being ‘spread thinly’ across many students. We suggest strategies be focused narrowly on about 25 per cent of Australia’s students – the most disadvantaged.<sup>27</sup> This is about 1,000,000 students across Australia.

#### 3.1.1 Give extra ‘catch-up’ funding to schools, with guidance on how to spend it

We recommend a one-off ‘catch-up’ loading for disadvantaged students for the six months to December 2020. Our package costs roughly \$1,262 per disadvantaged student, and would double the funding loading for disadvantaged students (see Chapter 4).

Governments should give the money to schools to spend but with clear guidance on the purpose of the extra catch-up funding, along with a list of high-priority initiatives to be considered. It is unrealistic to expect every school to research high-impact initiatives themselves. Providing spending guidelines will also avoid confusion on how the money should be spent.<sup>28</sup>

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27. Our estimate of 25 per cent is a rough guide intended to cover the vulnerable student populations identified in Chapter 1. It roughly aligns with data that about 20 per cent of Australian students fail to meet basic proficiency tests in PISA by age 15, which has high representations of students from low-SES families, rural locations, and indigenous communities, as well as LBOTE students and students with poor mental health.

28. An April 2020 NSW Auditor-General report showed there was too little guidance to NSW schools on how to spend their (regular) equity funding. As a consequence, in many cases the money was not spent on the disadvantaged students for whom it was intended. See Audit Office of NSW (2020).

### 3.1.2 A funding pre-condition: assess all students to identify struggling learners upfront

Schools should receive the extra funding only if they focus upfront on identifying struggling students.

Many teachers struggle to accurately assess student learning needs, even though they should do it as part of regular teaching. Good assessment is no easy task – it requires high levels of data literacy as well as good diagnostic skills.

Now is an opportune time to improve teachers' assessment skills. We recommend the national body for assessment, ACARA, be responsible for creating a \$20 million package of assessment tools that teachers can use in-class to monitor students progress in the remainder of 2020.<sup>29</sup> This effort will add value to longer-term efforts in developing new national online formative assessment tools – a key initiative for improving teaching and learning in Australia.<sup>30</sup>

### 3.2 How to prioritise catch-up initiatives

In the interest of investing to catch up on COVID-19 learning losses, governments should give priority to initiatives that:

- Have been shown in research studies to significantly improve student learning;<sup>31</sup>
- Have benefits that clearly outweigh the costs;
- Have a track record of successful implementation across many schools, and can be implemented quickly; and

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29. This includes the cost of subsidising assessment tools, quality assurance and creating an online platform.

30. OFAI (n.d.).

31. We use the 'months of learning impact' drawn from the E4L and EEF learning and teaching toolkits.

- Will help stimulate the economy in recession by providing extra income to people likely to spend it.

Obviously programs should only be rolled out at scale if there is good evidence that they will have substantial impact. Given the opportunity cost of setting up a substantial program, there is no point in doing something unless it moves the dial (criterion 1). And obviously a program should only be pursued if its benefits exceed its costs (criterion 2).

It is one thing to have a program that can work when closely supervised in a few sites; it is another to have a program where there is a good chance that it can be successfully implemented across many schools. With pressure for a quick roll out, and therefore limited time to organise implementation, we have prioritised programs where implementation at scale is relatively easy (criterion 3). And given the desire to catch up from COVID-19, this criteria also takes into account programs that can be implemented within a relatively short time period of six months.

In an ideal world, COVID-19 catch-up programs would also have multiplier effects – spending on the program would flow to people who are themselves relatively likely to spend it (criterion 4). The World Bank believes that COVID-19 has sparked the worst global recession since at least the Second World War, which underscores the importance of stimulus.<sup>32</sup>

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32. World Bank (2020).

### 3.3 High-priority initiatives

Because the evidence base is still emerging in education on ‘what works’ and ‘how to implement it’, few initiatives meet the above criteria, as shown in Table 3.1 on page 23.

We identify two initiatives as high priorities:

1. Small-group tuition for students far behind
2. Expanding successful literacy and numeracy programs, especially for students in the early years

Both initiatives have been shown to have high impacts on student learning.<sup>33</sup> If implemented in the remainder of 2020, they would provide disadvantaged students more than three months progress on top of regular learning. Large research studies have also shown these initiatives have a better track record of implementation.<sup>34</sup> Given implementation is often the biggest challenge in education reforms, this criterion is very important. Initiatives need to actually work in practice, otherwise it is money down the drain.

The first high-priority initiative is small-group tuition programs, which can increase student learning by up to five months over a six-month program. These programs are expensive, but have been shown to work in a number of large project trials.<sup>35</sup> And if university graduates or pre-service teachers take up jobs as tutors, these programs would also provide significant fiscal stimulus because those groups are likely to quickly spend the extra income.

A second high-priority initiative is tried and tested literacy and numeracy programs. These involve specific teaching techniques for certain skills, for example using phonics to teach reading. A ‘program’

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33. Evidence for Learning (2020c).

34. See, for example, promising projects identified by EEF (2020b).

35. See, for example, EEF (ibid).

packages up effective technique with structured content, materials, and training for teachers.

We suggest both high priority initiatives are rigorously evaluated in implementation so we can learn more about what works long term.

#### 3.3.1 Initiatives to trial carefully

Table 3.1 on page 23 also includes three initiatives that are high impact but may be harder to implement in six months. We suggest governments conduct small trials of these initiatives, so we can learn more about how to implement these initiatives well.

The first such initiative involves extra support for targeted teaching. The second and third initiatives involve supporting student well-being: training for teachers in teaching social and emotional skills, and targeted behaviour support.

#### 3.3.2 Initiatives to trial later

One initiative not recommended in this report, but which should be tested over the next couple of years, is expanded use of digital technologies.

Teachers and students have enhanced their digital technology skills during remote schooling, and we should build on them. The evidence shows that digital learning can work well when it complements – rather than replaces – face-to-face instruction.<sup>36</sup>

However, it is too early to rapidly expand the use of digital tools in the next six months, because there is still little information on which digital approaches are successful. Over the next two years, Australian governments should fund trials and collect information on what

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36. Evidence for Learning (2020b).

approaches are being used in schools, and which are proving most valuable.

Of course where existing technologies have rigorously been shown to work – for example online tutoring, or literacy and numeracy programs with online components – they should be used.<sup>37</sup>

### 3.3.3 Initiatives to avoid

Governments should tell schools which strategies are likely be less effective and should be avoided. For example, we do not recommend that schools use extra catch-up funding to simply hire more teaching assistants without giving them adequate training.<sup>38</sup>

Nor do we recommend that students repeat a year, or that they be streamed into different classes, because these interventions have been consistently shown to harm students academically.<sup>39</sup>

Schools should avoid initiatives likely to take longer than six months if the funding comes from the stimulus package. Given stimulus funding is designed to provide one-off short-term support, it would make little sense to get part-way through a good initiative that cannot be completed.

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37. For example, see the positive EEF evaluation of the ABRACADABRA online tutoring program by McNally et al (2018).

38. Evidence shows that appropriately-trained teaching assistants can improve student learning, for example by tutoring. See Evidence for Learning (2020d).

39. Evidence for Learning (2020c).

## 3.4 Detailing high-priority initiatives

This section details the features of high-priority initiatives.

### 3.4.1 High priority 1: small-group tuition

Evidence shows small-group tuition quickly boosts student achievement, especially for disadvantaged students.<sup>40</sup>

One-on-one tutoring three times a week over 20 weeks can increase student learning by as much as five months.<sup>41</sup> Four recent evaluations of one-on-one tuition in the UK found average learning improvements of between three and five months.<sup>42</sup> Tuition in groups of two to five is also highly effective, and there is evidence that it can deliver similar benefits as one-on-one tuition at lower cost.<sup>43</sup> For this reason, we recommend small-group rather than one-on-one tutoring, unless there is good reason for the latter.

We recommend short, regular tutorial sessions for groups of about three students, either within or outside regular class, three-to-four times a week, for 10-to-20 weeks.

In rural and remote settings, online tutoring programs can offer significant benefits.<sup>44</sup>

For effective implementation, tutors should be well trained, and should work closely with teachers to ensure their tutoring is closely linked to normal teaching.<sup>45</sup>

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40. See Evidence for Learning (2020e).

41. Evidence for Learning (2020c).

42. EEF trials include ABRACADABRA, Graduate Coaching Programme, Switch-on Reading, and Tutor Trust – Affordable Tutoring. See EEF (2020b).

43. See Evidence for Learning (2020e). Australian studies include Serry and Oberklaid (2015) and Scull and Bianco (2008).

44. Examples of programs that show positive impacts include ABRACADABRA and Educate Online, see McNally et al (2018) and Perry (2014).

45. Evidence for Learning (2020f).

Table 3.1: We identify two high-priority initiatives, and three that should be tested

|  | High priority | Criteria                |   |                          | Cost   |                                |                                  |
|--|---------------|-------------------------|---|--------------------------|--|--------------------------------|----------------------------------|
|  |               | Learning gains (months) | Ease of implementation quickly and at scale (1 hard/5 easy) | Value to fiscal stimulus | Percentage of disadvantaged students who benefit | Learning gain relative to cost | Total cost at scale (\$ million) |
| <b>High priority</b>                             |               |                         |   |                          |  |                                |                                  |
| 1. Small-group tuition                           | Yes           | 4-5                     | 3   | High                     | 100%   | Low                            | \$1,126                          |
| 2. Literacy and numeracy strategies and programs | Yes           | 2-6                     | 3   | Low                      | 25%  | High                           | \$70                             |
| <b>Other initiatives</b>                         |               |                         |   |                          |  |                                |                                  |
| 3. High-impact teaching practices                | Trial         | 3-8                     | 2   | Low                      | 100%   | High                           | \$176                            |
| 4. Social and emotional learning                 | Trial         | 4                       | 2   | Low                      | 100%   | High                           | \$122                            |
| 5. Targeted behaviour support                    | Trial         | 3                       | 3   | Low                      | 5%   | Low                            | \$64                             |
| 6. Digital technology tools                      |               | 4                       | 1   | Low                      | 25%  | Medium                         | \$277                            |
| 7. Outdoor adventure learning                    |               | 4                       | 1   | Medium                   | 40%  | Low                            | \$760                            |
| 8. Parental engagement                           |               | 3                       | 1   | Low                      | 100%   | Low                            | \$1,053                          |
| 9. Reducing class sizes                          |               | 3                       | 1   | Low                      | 100%   | Very Low                       | \$1,776                          |
| 10. School holiday programs                      |               | 2                       | 1   | Low                      | 20%  | Low                            | \$388                            |
| 11. Extending school time                        |               | 2                       | 2   | Low                      | 100%   | Low                            | \$645                            |
| 12. Arts participation                           |               | 2                       | 1   | Medium                   | 100%   | Low                            | \$359                            |
| 13. Sports participation                         |               | 2                       | 1   | Medium                   | 100%   | Low                            | \$667                            |
| 14. Teaching assistants (TAs)                    |               | 1                       | 1   | Low                      | 100%   | Low                            | \$1,579                          |
| 15. Setting or streaming                         |               | -1                      | NA  | NA                       | NA   | NA                             | Negative                         |
| 16. Repeating a year                             |               | -4                      | NA  | NA                       | NA   | NA                             | Negative                         |

Notes: ‘Learning gains’ is from Evidence for Learning (2020c) and Evidence for Learning (2020c). ‘Ease of implementation’ considers speed of delivery and evidence of effectiveness across many schools at a large-scale. ‘Value to fiscal stimulus’ considers additional economic benefits, i.e. income for young or underemployed people who are more likely to spend it. All costs include an additional 10 per cent (of total costs) for evaluation and 20 per cent for governments to offer a discount to schools selecting a recommended provider. Item 1 assumes delivery by university graduates. Item 2 includes phonics, reading comprehension strategies, and oral-language interventions from Evidence for Learning (2020c) as well as five programs from WWC (2020). Items 7, 12, and 13 assume delivery by young people or low-income earners e.g. artists, youth workers, sports trainers. Items 1, 2, 6, 10, and 11 have been costed for two content areas (reading and mathematics). Costs would be halved if delivering only one content area. Items 9 and 11-13 are costed for a duration of 12 months. Items 15 and 16 have a negative impact on learning so other criteria do not apply.

Sources: Grattan analysis of Evidence for Learning (2020c) and EEF (2020c) evidence summaries. Data sources for costings include ABS (2019a), ABS (2020) and QILT (2019).

Tutoring should be done by teachers and non-teachers, depending on availability over the next six months. Recent reviews show tutoring by teaching assistants and university graduates can be at least as effective as tutoring by teachers (see Appendix A).<sup>46</sup> One review of programs for struggling elementary readers found that tutoring by teaching assistants was more effective, on the whole, than tutoring by teachers.<sup>47</sup> This applied to both one-on-one and small-group programs.

Some studies show tuition can be especially effective for primary students who are behind their peers, and for subjects such as reading and mathematics.

The benefits from tuition stem from the fact the tutor is able to focus exclusively on a small number of students. The tutor can set work which is more closely matched to students' needs, and give targeted feedback.<sup>48</sup> Of course not all tutoring programs work, and effective implementation is critical.<sup>49</sup>

Most of the evidence on tuition comes from the US and UK. Few rigorous evaluations have been done in Australia.<sup>50</sup> But there are some promising signs about Australian tutoring programs. For example, students in a small South Australian literacy program made greater

gains than peers receiving standard English instruction.<sup>51</sup> Another evaluation of one-on-one numeracy tuition in 10 schools in the ACT with Year 4-8 students showed a modest increase in maths test scores.<sup>52</sup> An evaluation of the ABRACADABRA tutoring program in early literacy in the Northern Territory found positive effects.<sup>53</sup>

### **Australia has the workforce to deliver high-quality tuition**

We estimate that about 100,000 tutors will be needed to help about 1,000,000 disadvantaged students across Australia over the next six months. There would be about three students per group. Each tutor would have about three or four groups over the six months, delivering two 12-week programs. Each tutor would be employed for about 8 hours per week. If some tutors were prepared to work more hours, fewer would be needed. Given the large number of tutors needed, extra staff beyond teachers would be required.

We suggest tutors be drawn from various groups, including teaching staff who have the time, as well as non-teaching staff such as teaching assistants, university graduates, and pre-service teachers. Drawing tutors from various groups would ensure teachers are not over-burdened during the recovery phase.

Australia appears to have sufficient workforce capacity. Some Victorian data suggest about 30 per cent of registered teachers are not working in teaching roles.<sup>54</sup> Across Australia there are a lot of part-time teachers. Some estimates suggest up to one-third of primary teachers are part-time.<sup>55</sup>

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46. Baye et al (2017) and Pellegrini et al (2018).

47. Inns et al (2019). Another promising tutoring project delivered by teaching assistants is ABRACADABRA, a 20-week literacy program in the UK for Grade 1 students. It has produced additional learning gains of five months (see McNally et al (2018)). Earlier tutoring studies suggested that teachers were more effective than teaching assistants, but this is no longer the case.

48. See Evidence for Learning (2020f). Tuition is also thought to deliver social benefits, with students creating a strong bond with their tutor and gaining confidence and support, see Dumenden (2011).

49. See Evidence for Learning (2020g) for guidance on effective implementation.

50. See Evidence for Learning (2020h) and Evidence for Learning (2020f).

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51. Compared to students not receiving the tuition, K-1 students could correctly spell twice as many words on the South Australian Spelling Test and their fluency increased by 50 per cent, see Buckingham et al (2014).

52. Thornton et al (2010).

53. Wolgemuth et al (2013) and Abrami et al (2020).

54. VIT (2019). This includes casual relief teachers, retirees, and those working in other non-school settings.

55. According to the SiAS 2013 survey: Weldon (2015, p. 10).

Australia has about 59,000 teaching assistants, and most of them work part-time.<sup>56</sup> University students and graduates facing a tougher employment market in the economic downturn may be interested in working as tutors in schools.<sup>57</sup>

The private tuition market in Australia has also expanded rapidly in recent years. Governments should advise schools on the quality of providers (see Section 3.5 on page 27).

### Graduates as tutors

Using university graduates or pre-service teachers as tutors would provide multiple benefits. At the same time as it helped disadvantaged students, it would boost the income of university students and graduates at a time when they need it.

Before COVID-19, young Australians already had worse financial prospects than previous generations, with higher rates of unemployment and underemployment.<sup>58</sup> Many recent graduates were unemployed, underemployed or not working in areas that used their skills.<sup>59</sup> The COVID-19 disruptions will make this situation even worse, as COVID-19 is increasing unemployment and underemployment, and more for younger workers than older workers.<sup>60</sup> Companies often respond to economic pressures by freezing the hiring of new recruits.

There is now a good opportunity to use young university graduates or pre-service teachers as tutors. Evidence that this cohort can be effective tutors is shown in Box 4. We recommend governments encourage schools to use high-quality tutoring programs that provide tutoring incomes for young Australians.

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56. DESE (2019a).

57. About 230,000 young people graduate from university in Australia each year, based on 2018 Award Course completions for domestic students: DESE (2019b).

58. Wood and Griffiths (2019, pp. 23–24).

59. Norton and Cherastidtham (2018, pp. 75–78).

60. Borland (2020); and Cowgill and Coates (2020).

Under our proposal, over the next six months each tutor would work about 8 hours a week to help about three or four groups, delivering two 12-week programs. They would earn about \$6,300 dollars over the six months.<sup>61</sup>

#### Box 4: Graduates and university students can be effective tutors

The UK Perry Beeches Coaching Programme was delivered by university graduates over a school year through a mix of one-on-one and small-group tutoring.<sup>a</sup> Disadvantaged students made literacy learning gains of five months.

The UK Tutor Trust program provided maths tutoring using a mix of recent university graduates, undergraduates, teachers, and other professionals. Students made learning gains of three months after completing the 12-week program.<sup>b</sup>

a. Lord et al (2015).

b. Torgerson et al (2018).

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61. We expect tutors to be paid inline with current industrial agreements where applicable. Our estimate of potential income is for costing purposes only and is based on the median graduate salary.

### 3.4.2 High priority 2: expanding successful literacy and numeracy programs

When done well, literacy and numeracy programs can improve student learning by up to 6 months within a six month period. Examples include teaching reading using synthetic phonics, as well as reading comprehension strategies and oral language interventions.<sup>62</sup>

‘Structured programs’ – where effective strategies and techniques are packaged up with relevant content, materials, and training – are also showing good results. For example, a study of the three-term Thinking Maths program in Australia found it improved primary school student learning by two months.<sup>63</sup> It provides teachers with five professional learning days at four-to-five-week intervals to teach high-quality maths tasks and implement proven teaching strategies including meta-cognition.<sup>64</sup>

Unfortunately few literacy and numeracy programs have proved successful in Australia. But where they do exist, they should be expanded as a priority. Where needed, literacy and numeracy specialists should be given extra resources to help teachers embed successful practices in their classrooms.<sup>65</sup>

Given successful literacy and numeracy programs are often tightly targeted to particular year levels and topics, this initiative may only reach a small proportion of disadvantaged students.

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62. Evidence for Learning (2020i); Evidence for Learning (2020j); and Evidence for Learning (2020k).

63. Hollingsworth et al (2018).

64. See also WWC (2007) and Stokes et al (2018) for examples of US- and UK-based programs. There is some evidence that the MiniLit program in NSW and the Corrective Reading program in Victoria have had positive results, see Quach et al (2019) and Hempenstall (2008).

65. In our *Top Teachers* report we argue for an overhaul of current professional learning structures which largely rely on short-term literacy and numeracy programs: Goss and Sonnemann (2020).

We suggest that, where possible, extra focus be given to programs and training which benefit younger students, given the importance for future learning of creating solid foundations in these core areas.

### 3.4.3 A trial in extra targeted teaching supports

Before COVID-19, the spread of student capabilities in Year 9 in a typical Australian school was already about seven years. After COVID-19, the spread will be even larger. Now is an opportune time for governments to expand support for ‘targeted teaching’, where teachers tailor their teaching to meet the variety of student needs in their classroom.<sup>66</sup>

In a 2020 national survey, teachers identified ‘differentiated materials and resources’ as the number one instructional support they wanted to help students to catch up after remote learning.<sup>67</sup>

This is not a surprise. Targeted teaching is not easy; teachers require high levels of data literacy as well as good diagnostic skills to tailor their teaching to student needs. Teachers also require high-quality curriculum materials that help them to teach effectively to the wide spread of abilities in a single classroom.

But fully training teachers in targeted teaching takes much longer than six months.<sup>68</sup> As an interim measure, governments should expand curriculum materials and learning resources for targeted teaching, giving greater guidance to schools and teachers as needed. They should also expand short training courses or coaching in data use.<sup>69</sup>

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66. Goss et al (2015). It builds from the evidence on feedback, formative assessment, and small attainment grouping shown in the Evidence for Learning Toolkit.

67. Grattan analysis of Pivot (forthcoming).

68. For example, the Early Action for Success (EAfS) program in NSW, which funds instructional leaders to equip early primary teachers with targeted teaching in literacy and numeracy, runs for three years.

69. For example, in SA, the Institute of Educational Assessors (IEA) delivers targeted professional learning on how to use assessment data well. IEA (n.d.).

### 3.4.4 Extra support for student well-being

Well-being matters for student learning. To learn academically, students need to feel socially and emotionally supported, with good relationships with teachers and adults. As a result of the COVID-19 lockdowns, some children are likely to be more stressed and anxious.

We recommend testing two initiatives that have been shown to boost student well-being and learning.

The first is teacher training in explicit teaching of social and emotional learning, including teaching broader life skills such as how to self-regulate emotions.<sup>70</sup> We recommend extra training for teachers in incorporating these approaches into regular classroom activities, via activities such as stories and games.<sup>71</sup>

The training should also incorporate mental health literacy to help teachers identify students who have poor mental health and who may need to extra help.<sup>72</sup> Students who already had mental health problems may find they have got worse during remote schooling.<sup>73</sup>

The second initiative is targeted behaviour support. A number of studies show disruptions to schooling can cause student behaviour to deteriorate.<sup>74</sup>

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70. More broadly, schools should be careful about other interventions designed to improve students' social and emotional skills, because such efforts are not always successful. For example, of four trials of social and emotion learning programs by the EEF in the UK, only one project was shown to work. See EEF (2019).

71. See A. Goodman et al (2015) and Jones and Khan (2017). A summary of the evidence is in EEF (2019).

72. Johnson et al (2011), Mumbauer and Kelchner (2018).

73. In late 2019, the Productivity Commission recommended extra training for teachers in student mental health needs: Productivity Commission (2019).

74. See for example Smilde-van den Doel et al (2006), Filiz (2016) and Rubens et al (2018).

Behavioural support works best when interventions are targeted at students who most need the support, rather than across the whole school.<sup>75</sup> It is also most effective when delivered one-to-one by trained specialists over two-to-six months, rather than by teachers.<sup>76</sup>

Schools should identify interventions with a track-record of success and that meet the particular needs of their students.

### 3.5 Governments are key to successful implementation

Schools cannot do it alone. And delivering initiatives within six months will not be easy. We recommend state governments should do five things to ensure successful implementation of catch-up initiatives.

First, they should give schools a list of high-priority programs for schools to spend their extra catch-up funding on, helping to nudge schools toward high-impact programs that have a higher chance of success (as discussed in Section 3.4 on page 22).

Second, governments should give schools a list of 'quality assured' providers for the high-priority programs, and give schools a discount when they buy services from approved providers. This is especially important in the tuition market, which must not become a 'Wild West' for schools. Governments should advise schools on the extent to which tuition providers teach to the curriculum and meet other basic standards such as training of staff.

Third, governments should give larger discounts to schools that use tutoring services that employ university graduates or pre-service teachers as tutors. Employing this cohort of young people has the extra benefit of boosting young people's income during the economic downturn.

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75. Evidence for Learning (2020).

76. For example, a successful program identified by WWC (2012) is delivered by trained behaviour coaches.

Fourth, governments should provide extra delivery support for the 'trial' initiatives involving targeted teaching and student well-being. In particular, governments should point schools to high-quality training courses, materials, and other supports.

Fifth, governments should put aside \$95 million to fund rigorous evaluations of the catch-up initiatives, especially small-group tuition. These findings will help to build the evidence-base for closing the large equity gap long-term.

### **3.6 We should not waste this crisis**

The short-term nature of our proposed reform package has risks. If broader supports aren't in place, then dropping discrete initiatives into any system is challenging. For example, successful implementation often relies on good school leadership and effective professional learning structures, and most states and territories are still improving these aspects of their education system.

Our reform package tries to mitigate these risks by prioritising initiatives which are more likely to be successfully implemented in the given time frame.

## 4 The benefits far outweigh the costs

### 4.1 The costs are material

We estimate that extra funding of about \$1.25 billion will be needed to help about 1,000,000 disadvantaged students catch-up after the COVID-19 remote schooling.<sup>77</sup> This is about \$1,262 per disadvantaged student on average, which is more than double the current funding loading for disadvantaged students.

The \$1.25 billion is made up mostly of a big investment of \$1.13 billion in small-group tutoring. It also includes \$70 million for literacy and numeracy programs, and about \$30 million for three small-scale trials: \$15 million for targeted teaching, \$10 million for social and emotional learning, and \$5 million for targeted behaviour support programs. We also suggest \$20 million be put toward a new package of in-class assessment tools so that teachers can easily track and monitor student progress.

To ensure we learn more about what works, our estimates include \$95 million for rigorous evaluations of all initiatives in the reform package.

### 4.2 The benefits to the economy would be large

The reform package would not only help to stimulate the economy over the next six months, but also produce longer-term economic benefits. We estimate the benefits to the economy would be more than double the costs of the package.

People who do well at school tend to earn more – and pay more taxes – later on.<sup>78</sup> Australian studies estimate that for each additional year of

schooling a person completes, their future income rises by about 9 or 10 per cent.<sup>79</sup>

We use this research to make projections about the extra income generated if disadvantaged students catch-up the learning losses from COVID-19 remote schooling.<sup>80</sup> Our underpinning assumption is that for every year of additional schooling, future earnings rise by 9 per cent.<sup>81</sup> This means that six weeks of lost learning for a disadvantaged student would equate to about \$19,000 of lost income over their lifetime.<sup>82</sup> If our recommended recovery package was implemented across Australia, this would result in a benefit to lifetime earnings of about \$3.5 billion in today's dollars, almost three times the costs.<sup>83</sup>

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77. Our estimates incorporate 10% of total costs for evaluation and 20% of total costs for governments to offer a discount to schools selecting a recommended provider.

78. French et al (2015) and ABS (2014).

79. Leigh and Ryan (2008) and Leigh (2010) estimate future income rises by an average of 10 per cent for each extra year of schooling.

80. We assume six weeks of lost learning is recovered for a disadvantaged student.

81. This assumption is based on a recent study by Psacharopoulos and Patrinos (2018) which uses more than 1,000 micro-studies from around the world to estimate the private returns to schooling.

82. This is based on the assumption that the income gains to learning are linearly distributed across the school year. It should be regarded as a rough estimate only. We estimate the benefits for the bottom 25% of students by SES, using the average income for each of the bottom deciles: ABS (2019b).

83. This estimate is conservative because it does not include extra taxes paid or lower welfare payments received. An alternative way to estimate the economic benefits is to use the link between schooling and GDP growth from cross-country studies, see Jensen (2010, p. 18), as well as OECD et al (2015). Using this approach yields a broadly similar result.

### **4.3 The long-term benefits to education would be larger**

Crises often create opportunities for reform. Implementing this reform package for the next six months will help build up knowledge for tackling the much bigger gap in educational attainment, which has persisted long before the COVID-19 crisis emerged. And this is an even bigger prize than catching up from the learning losses of the COVID-19 disruptions.

## Appendix A: Findings from the systematic review

### Standardised estimates for gap change during school closures<sup>84</sup>

| Study                   | Country | Number of students | Subject | Change in gap per month (%) |
|-------------------------|---------|--------------------|---------|-----------------------------|
| Burkam 2004             | US      | 3,664              | Other   | 4.3%                        |
| Davies 2013             | Canada  | 1,376              | Reading | 1.1%                        |
| Dumont 2020, Quinn 2016 | US      | 3,630              | Reading | -1.8%                       |
| Dumont 2020, Quinn 2016 | US      | 3,630              | Maths   | 0%                          |
| Dumont 2020, Quinn 2016 | US      | 3,750              | Reading | 1.7%                        |
| Dumont 2020, Quinn 2016 | US      | 3,740              | Maths   | 4.1%                        |
| Lindahl 2001            | Sweden  | 556                | Maths   | 1.7%                        |
| Meyer 2017              | Germany | 51                 | Other   | 1.8%                        |
| Meyer 2017              | Germany | 51                 | Reading | 2.8%                        |
| Paechter 2015           | Austria | 180                | Maths   | 5.9%                        |
| Verachtert 2009         | Belgium | 829                | Maths   | 1.9%                        |
| Von Hippel 2019         | US      | 17,779             | Maths   | 1.4%                        |
| Von Hippel 2019         | US      | 17,779             | Reading | 1.5%                        |
| Von Hippel 2019         | US      | 790                | Reading | 3%                          |
| Von Hippel 2019         | US      | 790                | Maths   | 4.1%                        |

84. EEF (2020a).

## Appendix B: Summary of the evidence for tutoring programs

| Program name                   | Study                  | Sample size                | Content area | Year level | Duration/intensity                     | No. of students | Tutored by  | Tutor characteristics                                  | Effect size | Learning gains <sup>85</sup> |
|--------------------------------|------------------------|----------------------------|--------------|------------|--|-----------------|---|--|-------------|------------------------------|
| Reach Tutoring (UK)            | Sibieta (2016)         | 287 students<br>27 schools | Reading      | 7-8        | 20 weeks<br>3 per week<br>35 mins      | 1               | Teaching assistants <sup>86</sup>                 | Experienced TAs, 5 days training                       | +0.33-0.51  | 4-6 months (SS)              |
| Switch-on Reading (UK)         | Gorard et al (2014)    | 308 students<br>15 schools | Reading      | 7-8        | 10 weeks<br>5 per week<br>20 mins      | 1               | Teaching assistants <sup>87</sup>                 | 2 days training  | +0.36 (FSM) | 4 months (FSM)               |
| Numbers Count (UK)             | Torgerson et al (2013) | 418 students               | Maths        | 1          | 12 weeks<br>5 per week<br>30 mins      | 1               | Teachers  | Certified teachers, 7 days training                    | +0.33       | -                            |
| Galaxy Math (US)               | Fuchs et al (2013a)    | 591 students               | Maths        | 3          | 16 weeks<br>3 per week<br>20-30 mins   | 1               | Employees of the research grant funding the study | Some certified teachers, 2 days training               | +0.25       | -                            |
| Reading Recovery (US)          | WWC (2013)             | 227 students               | Reading      | 1          | 12-20 weeks<br>5 per week<br>30 mins   | 1               | Teachers  | Certified teachers, 1 year training                    | -           | +27 percentile points (SS)   |
| Graduate Coaching Program (UK) | Lord et al (2015)      | 373 students<br>4 schools  | Literacy     | 7          | 1 school year<br>3 per week<br>60 mins | 1-2             | University graduates                              | Some with TA/coach experience, 90 mins weekly training | +0.40 (FSM) | 5 months (FSM)               |

85. Where available, learning gains are reported for disadvantaged students.

86. Teaching assistants (TAs) are adults who support teachers in the classroom, also known as classroom support assistants: Evidence for Learning (2020c).

87. Mostly teaching assistants, but also SENCOs (Special Educational Needs Co-ordinators), Librarians, Literacy and School Heads.

|  |                        |                               |                |     |                                   |     |  |   |                    |                             |
|--|------------------------|-------------------------------|----------------|-----|-----------------------------------|-----|--|---|--------------------|-----------------------------|
| QuickSmart Numeracy (Australia)        | Miller et al (2019)    | 287 students<br>23 schools    | Maths          | 4-6 | 30 weeks<br>3 per week<br>30 mins | 2   | Teaching assistants  | Experienced TAs, 6 days training  | +0.08              | 1 month (SS)                |
| Fraction Face-Off! (US)                | Fuchs et al (2013b)    | 1,152 students                | Maths          | 4   | 12 weeks<br>3 per week<br>30 mins | 3   | Employees of the research grant funding the study                    | Some licensed teachers, Masters & PhD students, 2 days training                 | -                  | +24 percentile points (all) |
| Tutor Trust – Affordable Tutoring (UK) | Torgerson et al (2018) | 4,436 students<br>105 schools | Maths, English | 6   | 12 weeks<br>1 per week<br>60 mins | 3   | University students; recent graduates; teachers; other professionals | Rigorous selection process, required an A at GCSE in subject, 2.5 days training | +0.25 (FSM)        | 3 months (FSM)              |
| Abracadabra (ABRA) (UK)                | McNally et al (2018)   | 1,884 students<br>48 schools  | Literacy       | 1   | 20 weeks<br>4 per week<br>15 mins | 3-5 | Teaching assistants  | Experienced TAs, 1.5 days training  | +0.368-0.396 (FSM) | 5 months (SS)               |

Notes: TA = Teaching Assistant, GCSE = General Certificate of Secondary Education, FSM = (students entitled to) Free School Meals, SS = struggling students, Percentile points = the expected change in percentile rank of average student.

## Bibliography

- Abrami et al (2020). Abrami, P. C., Lysenko, L. and Borokhovski, E. "The effects of ABRACADABRA on reading outcomes: An updated meta-analysis and landscape review of applied field research". *Journal of Computer Assisted Learning* 36.3, pp. 260–279. <https://onlinelibrary.wiley.com/doi/abs/10.1111/jcal.12417>.
- ABS (2014). *Educational outcomes, experimental estimates, Tasmania, 2006-2013*. Cat. 4261.6. <https://www.abs.gov.au/ausstats/abs@.nsf/mf/4261.6>.
- \_\_\_\_\_ (2019a). *Employee Earnings and Hours, Australia, May 2018*. Cat. 6306.0. <https://www.abs.gov.au/ausstats/abs@.nsf/lookup/6306.0Media%20Release1May%202018>.
- \_\_\_\_\_ (2019b). *Survey of Income and Housing, 2017-18*. Cat. 6553.0. Australian Bureau of Statistics. <https://www.abs.gov.au/ausstats/abs@.nsf/mf/6553.0>.
- \_\_\_\_\_ (2020). *Schools, Australia, 2019*. Cat. 4221.0. <https://www.abs.gov.au/ausstats/abs@.nsf/mf/4221.0>.
- Ahn, J. and McEachin, A. (2017). "Student Enrollment Patterns and Achievement in Ohio's Online Charter Schools". *Educational Researcher* 46.1. <https://journals.sagepub.com/doi/pdf/10.3102/0013189X17692999>.
- Allington, R. (2008). *What Really Matters in Response to Intervention: Research-based Designs – Chapter 1, Why Struggling Readers Continue to Struggle*. Pearson. <http://ptgmedia.pearsoncmg.com/images/9780205627547/download/s/Allington%20WRM%20RTI%20ch1.pdf>.
- Ananat et al (2011). Ananat, E. O., Gassman-Pines, A., Francis, D. V. and Gibson-Davis, C. M. "Children left behind: the effects of statewide job loss on student achievement". <http://www.nber.org/papers/w17104>.
- Audit Office of NSW (2020). *Local Schools, Local Decisions: needs-based equity funding*. Audit Office of New South Wales. <https://www.audit.nsw.gov.au/our-work/reports/local-schools-local-decisions-needs-based-equity-funding>.
- Azevedo, R. (2005). "Using Hypermedia as a Metacognitive Tool for Enhancing Student Learning? The Role of Self-Regulated Learning". *Educational Psychologist* 40.4, pp. 199–209. [https://doi.org/10.1207/s15326985ep4004\\_2](https://doi.org/10.1207/s15326985ep4004_2).
- Baye et al (2017). Baye, A., Lake, C., Inns, A. and Slavin, R. E. *Effective Reading Programs for Secondary Students*. Baltimore, MD: Best Evidence Encyclopedia. <http://www.bestevidence.org/word/Secondary-Reading-08-03-17.pdf>.
- Belot, M. and Webbink, D. (2010). "Do Teacher Strikes Harm Educational Attainment of Students?" *LABOUR* 24, pp. 391–406. <https://doi.org/10.1111/j.1467-9914.2010.00494.x>.
- Borland, J. (2020). "The next employment challenge from coronavirus: how to help the young". *The Conversation*. <https://theconversation.com/the-next-employment-challenge-from-coronavirus-how-to-help-the-young-135676>.
- Buckingham et al (2014). Buckingham, J., Wheldall, K. and Beaman-Wheldall, R. "Evaluation of a Two-Phase Implementation of a Tier-2 (Small Group) Reading Intervention for Young Low-Progress Readers". *Australasian Journal of Special Education* 38.2, pp. 169–185. <https://doi.org/10.1017/jse.2014.13>.
- Burgess, S. and Sievertsen, H. H. (2020). *Schools, skills, and learning: The impact of COVID-19 on education*. The Centre for Economic Policy Research. <https://voxeu.org/article/impact-covid-19-education>.

- Burkam et al (2004). Burkam, D. T., Ready, D. D., Lee, V. E. and LoGerfo, L. F. "Social-Class Differences in Summer Learning Between Kindergarten and First Grade: Model Specification and Estimation". *Sociology of Education* 77.1, pp. 1–31. <https://doi.org/10.1177/003804070407700101>.
- Cassells et al (2012). Cassells, R., Duncan, A., Abello, A., D'Souza, G. and Nepal, B. *Smart Australians: education and innovation in Australia*. AMP.NATSEM Income and Wealth Report, Issue 32. [https://www.researchgate.net/publication/232814798\\_Smart\\_Australians\\_education\\_and\\_innovation\\_in\\_Australia](https://www.researchgate.net/publication/232814798_Smart_Australians_education_and_innovation_in_Australia).
- CIRES and Mitchell Institute (2020). *Impact of learning from home on educational outcomes for disadvantaged children*. <https://www.dese.gov.au/document/professor-stephen-lamb-centre-international-research-education-systems>.
- Cowgill, M. and Coates, B. (2020). "The modest rise in unemployment hides a much grimmer picture". *Grattan Institute blog*. <https://blog.grattan.edu.au/2020/05/the-modest-rise-in-unemployment-hides-a-much-grimmer-picture/>.
- Cunningham, A. E. and Stanovich, K. E. (1997). "Early reading acquisition and its relation to reading experience and ability 10 years later." *Developmental psychology* 33.6, pp. 934–945. <https://doi.org/10.1037/0012-1649.33.6.934>.
- DESE (2019a). *Teachers' Aides, ANZSCO ID 422116*. <https://joboutlook.gov.au/Occupation?search=alpha&code=422116>.
- \_\_\_\_\_ (2019b). *Selected Higher Education Statistics - 2018 Student data*. <https://www.education.gov.au/selected-higher-education-statistics-2018-student-data>.
- Dougherty, C. and Fleming, S. (2012). *Getting Students on Track to College and Career Readiness: How Many Catch Up from Far Behind?* ACT Research Report Series. <https://files.eric.ed.gov/fulltext/ED542022.pdf>.
- Duckett, S. and Mackey, W. (2020). *Grattan Institute Blog*. <https://blog.grattan.edu.au/2020/05/how-children-get-and-transmit-covid-19-is-still-a-mystery/>.
- Dumenden, I. E. (2011). "Agency as the Acquisition of Capital: the role of one-on-one tutoring and mentoring in changing a refugee student's educational trajectory". *European Educational Research Journal* 10.4, pp. 472–483. <https://doi.org/10.2304/eeerj.2011.10.4.472>.
- EEF (2019). *Improving Social and Emotional Learning in Primary Schools: Guidance Report*. London: Education Endowment Foundation. [https://educationendowmentfoundation.org.uk/public/files/Publications/SEL/EEF\\_Social\\_and\\_Emotional\\_Learning.pdf](https://educationendowmentfoundation.org.uk/public/files/Publications/SEL/EEF_Social_and_Emotional_Learning.pdf).
- \_\_\_\_\_ (2020a). *Impact of school closures on the attainment gap: Rapid Evidence Assessment*. London: Education Endowment Fund. [https://educationendowmentfoundation.org.uk/public/files/EEF\\_\(2020\)\\_-\\_Impact\\_of\\_School\\_Closures\\_on\\_the\\_Attainment\\_Gap.pdf](https://educationendowmentfoundation.org.uk/public/files/EEF_(2020)_-_Impact_of_School_Closures_on_the_Attainment_Gap.pdf).
- \_\_\_\_\_ (2020b). *Promising projects*. London: Education Endowment Fund. <https://educationendowmentfoundation.org.uk/tools/promising/>.
- \_\_\_\_\_ (2020c). *Teaching and Learning Toolkit*. Education Endowment Fund. <https://educationendowmentfoundation.org.uk/evidence-summaries/teaching-learning-toolkit/>.
- Evidence for Learning (2020a). *COVID-19 home-supported learning: Global evidence review*. <https://www.evidenceforlearning.org.au/covid-19-home-supported-learning/global-evidence-review/>.
- \_\_\_\_\_ (2020b). *Digital technology*. <https://evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/all-approaches/digital-technology/>.
- \_\_\_\_\_ (2020c). *Teaching and Learning Toolkit*. Evidence for Learning. <https://evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/full-toolkit/>.

- Evidence for Learning (2020d). *Teaching Assistants*.  
<https://www.evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/australasian-research-summaries/teaching-assistants/>.
- \_\_\_\_\_ (2020e). *One to one tuition - References*.  
<https://www.evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/all-approaches/one-to-one-tuition/technical-appendix/>.
- \_\_\_\_\_ (2020f). *One to one tuition*.  
<https://www.evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/all-approaches/one-to-one-tuition/>.
- \_\_\_\_\_ (2020g). *Putting evidence to work: a school's guide to implementation*.  
<https://www.evidenceforlearning.org.au/guidance-reports/putting-evidence-to-work-a-schools-guide-to-implementation/>.
- \_\_\_\_\_ (2020h). *Small group tuition*.  
<https://evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/all-approaches/small-group-tuition/>.
- \_\_\_\_\_ (2020i). *Phonics*. <https://evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/all-approaches/phonics/>.
- \_\_\_\_\_ (2020j). *Oral language interventions*.  
<https://evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/all-approaches/oral-language-interventions/>.
- \_\_\_\_\_ (2020k). *Reading comprehension strategies*.  
<https://evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/all-approaches/reading-comprehension-strategies/>.
- \_\_\_\_\_ (2020l). *Behaviour interventions*.  
<https://evidenceforlearning.org.au/the-toolkits/the-teaching-and-learning-toolkit/all-approaches/behaviour-interventions/>.
- Filiz, S. E. (2016). "Mothers' Involuntary Job Loss and Children's Academic Achievement". *Journal of Labor Research* 37.1, pp. 98–127.  
<https://doi.org/10.1007/s12122-015-9218-8>.
- Fitzpatrick et al (2020). Fitzpatrick, B. R., Berends, M., Ferrare, J. J. and Waddington, R. J. "Virtual Illusion: Comparing Student Achievement and Teacher and Classroom Characteristics in Online and Brick-and-Mortar Charter Schools". *Educational Researcher* 49.3, pp. 161–175. <https://doi.org/10.3102/0013189X20909814>.
- French et al (2015). French, M. T., Homer, J. F., Popovici, I. and Robins, P. K. "What You Do in High School Matters: High School GPA, Educational Attainment, and Labor Market Earnings as a Young Adult". *Eastern Economic Journal* 41.3, pp. 370–386.  
<https://doi.org/10.1057/eej.2014.22>.
- Fuchs et al (2013a). Fuchs, L. S. et al. "Effects of First-Grade Number Knowledge Tutoring With Contrasting Forms of Practice". *Journal of Educational Psychology* 105.1, pp. 58–77.  
<http://dx.doi.org/10.1037/a0030127>.
- Fuchs et al (2013b). Fuchs, L. S. et al. "Improving At-Risk Learners' Understanding of Fractions". *Journal of Educational Psychology* 105.3, pp. 683–700.
- Goodman, J. (2014). "Flaking Out: student absences and snow days as disruptions of instructional time". Cambridge, Massachusetts.  
<http://www.nber.org/papers/w20221>.
- A. Goodman et al (2015). Goodman, A., Joshi, H., Nasim, B. and Tyler, C. "Social and emotional skills in childhood and their long-term effects on adult life". <https://www.eif.org.uk/report/social-and-emotional-skills-in-childhood-and-their-long-term-effects-on-adult-life>.
- Gorard et al (2014). Gorard, S., See, B. H. and Siddiqui, N. *Switch-on Reading: Evaluation Report and Executive Summary*. Education Endowment Foundation.  
[https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation\\_Reports/EEF\\_Project\\_Report\\_SwitchOnReading.pdf](https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation_Reports/EEF_Project_Report_SwitchOnReading.pdf).
- Goss, P. (2019). *Student mental health and wellbeing matters*. Grattan Institute.  
<https://grattan.edu.au/news/mental-health-and-wellbeing-matters/>.

- Goss et al (2015). Goss, P., Hunter, J., Romanes, D. and Parsonage, H. *Targeted Teaching: How Better Use of Data can Improve Student Learning*. Grattan Institute. <https://grattan.edu.au/report/targeted-teaching-how-better-use-of-data-can-improve-student-learning/>.
- Goss, P. and Sonnemann, J. (2016). *Widening gaps: what NAPLAN tells us about student progress*. Report No. 2016-3. Grattan Institute. <http://grattan.edu.au/report/widening-gaps/>.
- (2020). *Top teachers: sharing expertise to improve teaching*. Grattan Institute. <https://grattan.edu.au/report/top-teachers/>.
- Hanson, R. A. and Farrell, D. (1995). “The Long-Term Effects on High School Seniors of Learning to Read in Kindergarten”. *Reading Research Quarterly* 30.4, pp. 908–933. <http://www.jstor.org/stable/748204>.
- Hempenstall, K. (2008). “Corrective Reading: An Evidence-Based Remedial Reading Intervention”. *Australasian Journal of Special Education* 32.1, pp. 23–54. <https://doi.org/10.1017/S1030011200025744>.
- Heppen et al (2017). Heppen, J. B., Sorensen, N., Allensworth, E., Walters, K., Rickles, J., Taylor, S. S. and Michelman, V. “The Struggle to Pass Algebra: Online vs. Face-to-Face Credit Recovery for At-Risk Urban Students”. *Journal of Research on Educational Effectiveness* 10.2, pp. 272–296. <https://doi.org/10.1080/19345747.2016.1168500>.
- Hill et al (2011). Hill, H. D., Morris, P. A., Castells, N. and Walker, J. T. “Getting a Job is Only Half the Battle: Maternal Job Loss and Child Classroom Behavior in Low-Income Families.” *Journal of policy analysis and management : [the journal of the Association for Public Policy Analysis and Management]* 30.2, pp. 310–333. <https://doi.org/10.1002/pam.20565>.
- Hollingsworth et al (2018). Hollingsworth, H., Dix, K. and Carlsake, T. *Thinking Maths: Learning Impact Fund Evaluation Report*. Melbourne: Evidence for Learning. <https://evidenceforlearning.org.au/assets/Thinking-Maths/E4L-Thinking-Maths-Evaluation-Report.pdf>.
- IEA (n.d.). *Certified Educational Assessors*. Institute of Educational Assessors. <https://www.sace.sa.edu.au/web/iea/certified-educational-assessors>.
- Inns et al (2019). Inns, A. J., Lake, C. and Pellegrini, M. *A Synthesis of Quantitative Research in Programs for Struggling Readers in Elementary School*. Baltimore, MD: Best Evidence Encyclopedia. <https://eric.ed.gov/?id=ED597166>.
- Jaume, D. and Willén, A. (2019). “The Long-Run Effects of Teacher Strikes: Evidence from Argentina”. *Journal of Labor Economics* 37.4, pp. 1097–1139. <https://doi.org/10.1086/703134>.
- Jensen, B. (2010). *Investing in our teachers, investing in our economy*. Grattan Institute. <https://grattan.edu.au/report/investing-in-our-teachers-investing-in-our-economy/>.
- Johnson et al (2011). Johnson, C., Eva, A., Johnson, L. and Walker, B. “Don’t turn away: Empowering teachers to support students’ mental health”. *Clearing House: A Journal of Educational Strategies, Issues and Ideas* 84.1, pp. 9–14. <https://doi.org/10.1080/00098655.2010.484441>.
- Jones, S. M. and Khan, J. (2017). *The Evidence Base for How We Learn: Supporting Students’ Social, Emotional, and Academic Development*. The Aspen Institute: National Commission on Social, Emotional, and Academic Development. <https://www.aspeninstitute.org/publications/evidence-base-learn/>.
- Joseph, B. and Fahey, G. (2020). *Pain without gain: Why school closures are bad policy: Policy Paper 28*. The Centre for Independent Studies. <https://www.cis.org.au/publications/policy-papers/pain-without-gain-why-school-closures-are-bad-policy/>.
- Kuhfeld, M. and Tarasawa, B. (2020). *The COVID-19 slide: What summer learning loss can tell us about the potential impact of school closures on student academic achievement*. Portland: NWEA. [https://www.nwea.org/content/uploads/2020/05/Collaborative-Brief\\_Covid19-Slide-APR20.pdf](https://www.nwea.org/content/uploads/2020/05/Collaborative-Brief_Covid19-Slide-APR20.pdf).

- Leigh, A. (2010). "Returns to Education in Australia". *Economic Papers* 27.3, pp. 233–249. <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1759-3441.2008.tb01040.x>.
- Leigh, A. and Ryan, C. (2008). "Estimating returns to education using different natural experiment techniques". *Economics of Education Review* 27, pp. 149–160. <https://doi.org/10.1016/j.econedurev.2006.09.004>.
- Lord et al (2015). Lord, P., Bradshaw, S., Stevens, E. and Styles, B. *Perry Beeches Coaching Programme: Evaluation report and Executive summary*. Education Endowment Foundation. [https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation\\_Reports/Perry\\_Beeches.pdf](https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation_Reports/Perry_Beeches.pdf).
- Marcotte, D. E. and Hemelt, S. W. (2008). "Unscheduled School Closings and Student Performance". *Education Finance and Policy* 3.3, pp. 316–338. <https://www.jstor.org/stable/10.2307/educfinapoli.3.3.316>.
- Masters, G. N. (2005). *Against the grade : in search of continuity in schooling and learning*. Australian Council for Educational Research. [https://research.acer.edu.au/monitoring\\_learning/3/](https://research.acer.edu.au/monitoring_learning/3/).
- McGrath-Champ et al (2018). McGrath-Champ, S., Wilson, R., Stacey, M. and Fitzgerald, S. *Understanding work in schools*. Report commissioned by NSW Teachers Federation. [https://www.nswtf.org.au/files/18438\\_uwis\\_digital.pdf](https://www.nswtf.org.au/files/18438_uwis_digital.pdf).
- McNally et al (2018). McNally, S., Ruiz-Valenzuela, J. and Rolfe, H. *ABRA: Online Reading Support: Evaluation report and executive summary*. Education Endowment Foundation. [https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation\\_Reports/ABRA\\_with\\_addendum.pdf](https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation_Reports/ABRA_with_addendum.pdf).
- Miller et al (2019). Miller, A., Gore, J., Harris, J., Prieto-Rodriguez, E., Fray, L., Lloyd, A. and Taggart, W. *QuickSmart Numeracy: Learning Impact Fund Evaluation Report*. Evidence for Learning. <https://evidenceforlearning.org.au/assets/QuickSmart/QuickSmart-Numeracy-Evaluation-Report.pdf>.
- Mumbauer, J. and Kelchner, V. 2. (2018). "Promoting mental health literacy through bibliotherapy in school-based settings". *Professional School Counseling* 21.1, pp. 85–94. <https://eric.ed.gov/?id=EJ1163847>.
- Noble et al (2020). Noble, K., Hurley, P. and Macklin, S. *COVID-19, employment stress and student vulnerability in Australia*. Melbourne: Mitchell Institute for Education and Health Policy, Victoria University. <https://www.vu.edu.au/mitchell-institute/schooling/covid-19-employment-stress-student-vulnerability>.
- Norton, A. and Cherastidtham, I. (2018). *Mapping Australian higher education 2018*. Grattan Institute. <https://grattan.edu.au/report/mapping-australian-higher-education-2018/>.
- OECD (2014). *PISA 2012 Results: What Students Know and Can Do*. Organisation for Economic Co-operation and Development. <http://dx.doi.org/10.1787/9789264208780-en>.
- \_\_\_\_\_ (2019). *TALIS 2018 Results (Volume I): Teachers and Schools Leaders as Lifelong Learners*. Organisation for Economic Co-operation and Development. <https://doi.org/10.1787/1d0bc92a-en>.
- OECD et al (2015). OECD, Hanushek, E. A. and Woessmann, L. *Universal Basic Skills*, p. 112. DOI: <https://doi.org/https://doi.org/10.1787/9789264234833-en>. <https://www.oecd-ilibrary.org/content/publication/9789264234833-en>.
- OFAI (n.d.). *Online Formative Assessment Initiative*. Australian Curriculum, Assessment, Reporting Authority, Assessment Services Australia, Australian Institute for Teaching and School Leadership Limited. <https://www.lpofai.edu.au/>.
- Pellegrini et al (2018). Pellegrini, M., Lake, C., Inns, A. and Slavin, R. E. *Effective programs in elementary mathematics: A best-evidence synthesis*. Baltimore, MD: The Best Evidence Encyclopaedia. [http://www.bestevidence.org/word/elem\\_math\\_Oct\\_8\\_2018.pdf](http://www.bestevidence.org/word/elem_math_Oct_8_2018.pdf).
- Perry, S. M. (2014). "A Delayed Treatment Control Group Design Study of an After-School Online Tutoring Program in Reading", pp. 264–279. <http://services.igi-global.com/resolvedoi/resolve.aspx?doi=10.4018/978-1-4666-5832-5.ch013>.

- Pivot (forthcoming). "Survey data". *Pivot Professional Learning*. [www.pivotpl.com](http://www.pivotpl.com).
- Productivity Commission (2019). *Mental Health: Productivity Commission Draft Report Overview & Recommendations*. Canberra: Productivity Commission. <https://www.pc.gov.au/inquiries/current/mental-health/draft>.
- Psacharopoulos, G. and Patrinos, H. (2018). "Returns to investment in education: a decennial review of the global literature". *Education Economics*. <http://documents.worldbank.org/curated/en/442521523465644318/Returns-to-investment-in-education-a-decennial-review-of-the-global-literature>.
- QILT (2019). *2019 Graduate Outcomes Survey: National Report*. Quality Indicators for Learning and Teaching. <https://www.qilt.edu.au/docs/default-source/gos-reports/2019-gos/2019-gos-national-report.pdf>.
- Quach et al (2019). Quach, J., Goldfeld, S., Clinton, J., Serry, T., Smith, L. and Grobler, A. *MiniLit: Learning Impact Fund Evaluation Report*. Evidence for Learning. <https://evidenceforlearning.org.au/lif/our-projects/minilit>.
- Quinn et al (2016). Quinn, D. M., Cooc, N., McIntyre, J. and Gomez, C. J. "Seasonal Dynamics of Academic Achievement Inequality by Socioeconomic Status and Race/Ethnicity: Updating and Extending Past Research With New National Data". *Educational Researcher* 45.8, pp. 443–453. <https://doi.org/10.3102/0013189X16677965>.
- Rege et al (2011). Rege, M., Telle, K. and Votruba, M. "Parental Job Loss and Children's School Performance". *The Review of Economic Studies* 78.4, pp. 1462–1489. <https://doi.org/10.1093/restud/rdr002>.
- Rubens et al (2018). Rubens, S. L., Felix, E. D. and Hambrick, E. P. "A Meta-Analysis of the Impact of Natural Disasters on Internalizing and Externalizing Problems in Youth." *Journal of traumatic stress* 31.3, pp. 332–341. <https://doi.org/10.1002/jts.22292>.
- Ruiz-Valenzuela, J. (2015). "Job Loss at Home: Children's School Performance during the Great Recession in Spain". London. <http://cep.lse.ac.uk/pubs/download/dp1364.pdf>.
- Scull, J. A. and Bianco, J. L. (2008). "Successful engagement in an early literacy intervention". *Journal of Early Childhood Literacy* 8.2, pp. 123–150. <https://doi.org/10.1177/1468798408091852>.
- Serry, T. A. and Oberklaid, F. (2015). "Children with reading problems: Missed opportunities to make a difference". *Australian Journal of Education* 59.1, pp. 22–34. <https://doi.org/10.1177/0004944114555584>.
- Sibieta, L. (2016). *REACH Evaluation report and executive summary*. Education Endowment Foundation. [https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation\\_Reports/EEF\\_Project\\_Report\\_REACH](https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation_Reports/EEF_Project_Report_REACH).
- Smilde-van den Doel et al (2006). Smilde-van den Doel, D. A., Smit, C. and Wolleswinkel-van den Bosch, J. H. "School performance and social-emotional behavior of primary school children before and after a disaster." *Pediatrics* 118.5, e1311–20. <https://doi.org/10.1542/peds.2005-2781>.
- Stokes et al (2018). Stokes, L., Hudson-Sharp, N., Dorsett, R., Rolfe, H., Anders, J., George, A., Buzzeo, J. and Munro-Lott, N. *Mathematical Reasoning: Evaluation report and executive summary*. Education Endowment Fund. [https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation\\_Reports/Mathematical\\_Reasoning.pdf](https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation_Reports/Mathematical_Reasoning.pdf).
- Thomson et al (2019). Thomson, S., De Bortoli, L., Underwood, C. and Schmid, M. *PISA 2018: Reporting Australia's Results, Volume I Student Performance*. Australian Council for Educational Research. <https://research.acer.edu.au/cgi/viewcontent.cgi?article=1035&context=ozpisa>.
- Thornton et al (2010). Thornton, S., Galluzzo, G., Quinane, M. and Taylor, D. "One on One Numeracy Intervention: A Pilot Project in Low SES Communities". *33rd Annual Meeting of the Mathematics Education Research Group of Australasia*. Mathematics Education Research Group of Australasia. <https://files.eric.ed.gov/fulltext/ED520972.pdf>.

- Torgerson et al (2013). Torgerson, C. J., Wiggins, A., Torgerson, D., Ainsworth, H. and Hewitt, C. "Every Child Counts: testing policy effectiveness using a randomised controlled trial, designed, conducted and reported to CONSORT standards". *Research in Mathematics Education* 15.2, pp. 141–153. <https://doi.org/10.1080/14794802.2013.797746>.
- Torgerson et al (2018). Torgerson, C. J., Bell, K., Coleman, E., Elliott, L., Fairhurst, C., Gascoine, L., Hewitt, C. E. and Torgerson, D. J. *Tutor Trust - Affordable Tutoring: Evaluation report and executive summary*. Education Endowment Foundation. [https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation\\_Reports/Tutor\\_Trust.pdf](https://educationendowmentfoundation.org.uk/public/files/Projects/Evaluation_Reports/Tutor_Trust.pdf).
- Vignoles, A. and Burgess, S. (2020). *The COVID-19 crisis and educational inequality*. Campaign for Social Science. <https://campaignforsocialscience.org.uk/news/the-covid-19-crisis-and-educational-inequality/>.
- VIT (2019). *Annual Report: 1 July 2018 - 30 June 2019*. Melbourne: Victorian Institute of Teaching. [https://www.vit.vic.edu.au/\\_\\_data/assets/pdf\\_file/0018/102195/VIT-Annual-Report-2018-19-web.pdf](https://www.vit.vic.edu.au/__data/assets/pdf_file/0018/102195/VIT-Annual-Report-2018-19-web.pdf).
- Weldon, P. (2015). "The Teacher Workforce in Australia: Supply, Demand and Data Issues". *Policy Insights* 2. <https://research.acer.edu.au/cgi/viewcontent.cgi?article=1001&context=policyinsights>.
- Wilson et al (forthcoming). Wilson, R., McGrath-Champ, S. and Mude, W. *Understanding work in schools*. Report commissioned by NSW Teachers Federation. [https://www.nswtf.org.au/files/18438\\_uwis\\_digital.pdf](https://www.nswtf.org.au/files/18438_uwis_digital.pdf).
- Wolgemuth et al (2013). Wolgemuth, J. R. et al. "ABRACADABRA aids Indigenous and non-Indigenous early literacy in Australia: Evidence from a multisite randomized controlled trial". *Computers & Education* 67, pp. 250–264. <http://www.sciencedirect.com/science/article/pii/S036013151300095X>.
- Wood, D. and Griffiths, K. (2019). *Generation Gap: Ensuring a fair go for younger Australians*. Grattan Institute. <https://grattan.edu.au/wp-content/uploads/2019/08/920-Generation-Gap.pdf>.
- Woodworth et al (2015). Woodworth, J. L., Raymond, M. E., Chirbas, K., Gonzales, M., Negassi, Y., Snow, W. and Van Donge, C. *Online Charter School Study*. Center for Research on Education Outcomes.
- World Bank (2020). *Pandemic, Recession: The Global Economy in Crisis*. <https://www.worldbank.org/en/publication/global-economic-prospects>.
- WWC (2007). *WWC Intervention Report: Ladders to Literacy for Kindergarten Students*. What Works Clearinghouse, Institute of Education Sciences. <https://ies.ed.gov/ncee/wwc/EvidenceSnapshot/259>.
- \_\_\_\_\_ (2012). *What Works Clearinghouse Intervention Report: First Step to Success*. What Works Clearinghouse, Institute of Education Sciences. [https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc\\_firststep\\_030612.pdf](https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_firststep_030612.pdf).
- \_\_\_\_\_ (2013). *What Works Clearinghouse Intervention Report: Reading Recovery*. Institute of Education Sciences. [https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc\\_readrecovery\\_071613.pdf](https://ies.ed.gov/ncee/wwc/Docs/InterventionReports/wwc_readrecovery_071613.pdf).
- \_\_\_\_\_ (2020). *What Works Clearinghouse*. <https://ies.ed.gov/ncee/wwc/>.
- Zimmer et al (2009). Zimmer, R., Gill, B., Booker, K., Lavertu, S., Sass, T. R. and Witte, J. *Charter Schools in Eight States: Effects on Achievement, Attainment, Integration, and Competition*. The RAND Corporation. [https://www.rand.org/content/dam/rand/pubs/monographs/2009/RAND\\_MG869.pdf](https://www.rand.org/content/dam/rand/pubs/monographs/2009/RAND_MG869.pdf).