Australian Institute for Teaching and School Leadership Limited

The Impact of COVID-19 on Teaching in Australia

A literature synthesis

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ORIMA RESEARCH

Contents

Background

The COVID-19 Pandemic

In December 2019, the World Health Organisation learned of a highly infectious form of coronavirus emerging from the People's Republic of China's Wuhan province. By March 2020, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) – by then coined COVID-19 – had infected at least 118,000 people across 114 countries, and was declared a global pandemic by the World Health Organisation (WHO, 2020).

Although COVID-19 in children is generally mild or symptomless, and children under ten years old are understood to transmit the virus less than adolescents and adults, concerns emerged early in the pandemic about the potential for schools to become significant sites of transmission and infection (Russell et al, 2020). As a result, schools in 190 different school systems around the world moved to periods of remote learning due to attempts to 'flatten the curve' (Dabrowski, 2020). This represented an unprecedented level of disruption to the learning of an estimated 1.5 billion students (UNESCO, 2021) – including Australia's 4 million primary and secondary students (ABS, 2021).

Early in the pandemic, organisations rushed to provide best practice evidence (e.g. AITSL, 2020) and guidance for the education sector about how to respond. The OECD, for example, provided a 25-point checklist which recognised the potential impacts on schools, teachers, students and families (Reimers & Schleicher, 2020). Suggestions included:

- Reprioritise curricular goals and define what should be learned during a period of social distancing;
- Identify options to 'recover learning time' once social distancing is over;
- Ensure adequate support for the most vulnerable students and families;
- Create a mechanism for 'just in time' professional development for teachers; and
- Provide online tools to preserve student wellbeing.

Looking back, many of these checklist items proved essential during remote learning in Australia and internationally. However, the speed at which schools and families needed to adapt, and the system-wide inequities and complexities already entrenched within education, meant these tasks were far from straightforward.

There were also expert predictions about the impacts of the pandemic on education (Selwyn et al, 2020), which the evidence is now starting to support. As this literature synthesis will show, these supported predictions include mental health repercussions, exacerbation of existing social inequalities, a need for educational technology training, and an increase in workload and stress for teachers.

School closures in Australia

In Australia, K-12 schools in every state and territory have experienced disruptions to learning due to the pandemic, though the length and extent of disruption has varied greatly. Despite the Federal Government broadly opposing school closures – citing inequity, mental health and learning loss[1] concerns (Dabrowski, 2020) – many students in Australia were taught remotely in the second term of 2020 from April to June during the 'first wave' of COVID-19 (Ewing & Cooper, 2021). Victoria, New

[1] Learning loss was also anticipated internationally, with flow on economic impacts (Hanushek & Woessmann, 2020).

South Wales and Queensland experienced higher numbers of COVID-19 infections, and as such, the respective State Governments mandated compulsory periods of remote learning and took a more cautious, staggered approach to returning to classrooms (Sacks et al, 2020).

In states and territories with lower levels of COVID-19 infections, students either only experienced a brief period of remote learning, or were able to learn remotely or attend school on-site at their parents' discretion (Sacks et al, 2020). All jurisdictions allowed exemptions for students to continue attending school onsite if their parents or carers were frontline or essential workers, if they had chronic illnesses or disabilities, or were otherwise vulnerable (ABC, 2020a).

Following the 'first wave' of coronavirus in Australia, the experiences of students across states and territories diverged. Victoria experienced a significant 'second wave' of the virus during which Victorian students undertook the longest continuous period of remote learning in Australia – a total of 30-35 school days of remote learning for regional Victorian students, and 50-60 school days for students in metropolitan Melbourne (Ewing & Cooper, 2021).

Victorian students returned briefly to remote learning during two shorter lockdowns in early 2021. South Australia, Western Australia and Queensland have also implemented short lockdowns in responses to outbreaks of the virus but closed their schools entirely rather than moving to remote learning (See Table 1).

Table 1: Overview of remote learning timeline

State	Remote learning key dates	Days of remote learning (approx.)
VIC[2]	**First lockdown:** - **15 April** – **26 May 2020:** staged return begins for prep, senior secondary and all special schools - **9 June 2020**: grade 3 to 10 students return to onsite learning	28 school days
	Second lockdown – metropolitan Melbourne[3] - **20 July 2020**: prep to year 10 students in metropolitan Melbourne and Mitchell Shire move to remote learning - **5 August 2020:** all metropolitan Melbourne students move to remote learning - **12 October 2020:** primary school, year 7, VCE and VCAL, and specialist school students return to on-site learning - **26 October 2020**: all remaining students return **Second lockdown – regional Victoria** - **5 August 2020**: all regional students move to remote learning - **5 October 2020**: primary school students in standalone schools return - **8 October:** primary school students in P-12 schools return - **12 October 2020**: all remaining students return	50 – 60 school days (metropolitan Melbourne) 30 – 35 school days (regional Victoria)
	Third lockdown - **15** – **17 February 2021**: all students in Victoria move to remote learning[4]	3 school days
	Fourth lockdown – regional Victoria - **28 May** – **3 June 2021**[5] **Fourth lockdown – metropolitan Melbourne** - **28 May** – **10 June 2021**	5 school days (regional Victoria) Minimum 10 school days (Melbourne secondary students returned 1 week sooner)
NSW[6]	- **23 March 2020**: families encouraged to keep children home, but schools remain open - **11 May:** public students return to on-site learning 1 day a week - **25 May:** students return to on-site learning full time	22 school days + 10 days of partial remote learning

[2] Parliament of Victoria, 2021
[3] ABC, 2020b; Opray, 2020
[4] ABC, 2021b
[5] Victorian Government, 2021
[6] ABC, 2020a; NSW Government, 2020a,b,c

State	Remote learning key dates	Days of remote learning (approx.)
QLD	- **20 April** – **11 May 2020**: Years 11 and 12, prep and year 1 students return to on-site learning - **25 May:** remaining students years 2 to 10 return to on-site learning[7]	15 – 25 school days
	- **30 March** – **1 April 2021:** schools in Brisbane close for three days due to snap lockdown[8]	3 school days (schools shut, no remote learning)
SA[9]	- **27 April 2020**: families given choice to have children learn remotely or attend school on site	0
TAS	- **25 March 2020**: families are given the option of remote learning[10] - **27 April** – **4 May 2020**: schools in north-west Tasmania close in response to local outbreak[11]	0
WA	- **26 March** – **18 May 2020**: optional remote learning for all students - **30 March 2020**: public schools encouraged to keep children home - **30 March 2020:** Catholic schools commenced remote learning - **29 April 2020:** all students return to on-site learning. Independent schools down to individual school discretion[12]	20 school days (optional)
	- **31 January – 5 February 2021**: commencement of term 1 delayed as part of snap lockdown[13]	Term start delayed for a week, no remote learning.
NT[14]	- **23 March** –**3 April 2020**: school attendance made optional - **6 April** – **9 April 2020:** schools student-free for last week of term	10 school days of optional attendance, no remote learning.
ACT[15]	- **18 April** – **18 May 2020:** preschool, kindergarten, years 1, 2 and 7 students return to on-site learning, Year 11 and 12 students move to combination of on-site and remote learning - **25 May**: year 3, 4 and 10 students return to onsite learning - **2 June:** years 5, 6, 8 and 9 return to schools	14 – 24 school days

Purpose of this literature synthesis

The purpose of this synthesis is to identify and summarise research findings on the impact of COVID-19 on teaching in Australian schools. The review examines impacts on teachers and teaching practice, and students and learning, focusing on the lessons learned from these periods of remote learning, and the practices that are likely to continue.

At the time of writing, Victoria had recently experienced a fourth snap lockdown requiring schools to return to remote schooling at short notice. Timely research and reviews provide important evidence to assist schools to adapt to any further lockdowns or future emergencies in a more streamlined manner. Research will also reveal disparities to highlight where extra support is needed to help those most affected by the pandemic. Lastly, it may catalyse school and system leaders to reflect on practices that have aided teaching, that may be sustained in the post-COVID future.

[7] ABC, 2021a; Queensland Government, 2020; Zillman, 2020
[8] ABC, 2021a
[9] ABC, 2020a
[10] Tasmanian Government, 2020.
[11] ABC, 2020a; The New Daily, 2020
[12] Education and Health Standing Committee, 2020
[13] Laschon, 2021
[14] Roberts, 2020; Zwartz, 2020
[15] ABC, 2020a; ACT Government, 2020a,b

Summary of findings

There is universal agreement that the COVID-19 pandemic presented significant challenges for teachers and students in both primary and secondary settings in Australia. Some locations – particularly Victoria, where remote schooling was especially lengthy – and disadvantaged cohorts of students were differentially affected and this is reflected in the relatively large amount of research that has focused on these areas.

Teachers were negatively impacted through an increase in work demands, including work complexity and hours. Most teachers needed to rapidly upskill in technology, juggle multiple modes of work, trial numerous digital tools and platforms and adapt their teaching approaches to find something that worked for their students. Most importantly, teacher wellbeing took a significant hit, as teachers needed to continue working and supporting their students during a time of significant community anxiety while they themselves reckoned with the risks of contracting COVID-19.

Impacts on vulnerable students were anticipated as the pandemic struck, and the evidence does suggest that there were issues with digital access and attendance – however, a clear picture about the extent of learning loss for these students and at the system level, given the difficulties with student assessment during this period, has not yet emerged. Student wellbeing was of paramount concern for educators, with a 'Maslow before Bloom' approach[16] evident in how schools and teachers adjusted their curriculum, teaching and assessment approaches. Nevertheless, available data suggests that student wellbeing was significantly negatively affected.

As schooling has largely returned to normal, there are increasing reflections on the positive impacts of the pandemic, including improved digital skills, more teacher collaboration, greater respect for the work of teachers, and the potential for longer term changes in the school system. Broadly, the narrative around these changes has so far focused on new or adapted pedagogies that would be required if digital technology is relied on more heavily for teaching and learning. The experiences of the distance and remote learning sector, evidence from education in emergency situations, and models for blended learning are likely to be referenced here. The use of educational technology (EdTech) will need to be evaluated for efficacy, teacher and school flexibility and equity to ensure that digital tools are used to support, rather than replace, the work of teachers, and above all meet the needs of students.

This synthesis is a snapshot of the available evidence on the impact of COVID-19 on teaching in Australia, focusing on those themes most consistent in the literature at the time of writing. Due to the differential effect of the pandemic on schooling across Australia, much of the available evidence centres on Victoria and New South Wales. Given the recency of extended remote schooling in Australia, we expect a significant amount of additional research will be published in the near future to document in greater detail the experiences of teachers and students during the pandemic, examine ongoing impacts, and formulate how teaching may evolve as a result.

[16] Maslow's Hierarchy of Needs, and Bloom's Taxonomy of learning.

Methodology

Scope of the review

This review describes the impact of COVID-19 on Australian schools, particularly the lessons learned and practices that are likely to endure once normalcy returns – based as far as possible on sources of primary evidence. It will also outline the findings from the Australian Institute of Teaching and School Leadership's (AITSL's) 2021 Stakeholder Survey where they relate to the literature.[17]

AITSL provides national leadership for the Australian, State and Territory Governments in promoting excellence so that teachers and school leaders can have the maximum impact on student learning in all Australian schools. Every two to three years, AITSL conducts a stakeholder survey to measure the impact of its policies, standards, tools, resources and initiatives, as well as its organisational impact through its reach among, and engagement with, stakeholders.

The 2021 AITSL Stakeholder Survey was conducted between 22 February and 9 April, with a total of n=2,592 responses received across the following stakeholder groups:

- AITSL expert / steering / focus groups
- Early childhood settings
- Education sector organisations (e.g. Departments of Education, Independent Schools Association, Catholic Education)
- Education unions
- Higher education institutes / providers
- Peak / representative bodies
- Professional associations
- Professional learning providers
- Schools (principals, deputy / assistant principals, staff in other leadership roles and teachers)
- Pre-service teachers
- Teacher regulatory authorities

In response to the COVID-19 pandemic, AITSL added an additional question to the survey to measure the impact of the pandemic on educators and students. Stakeholders were asked the following open-ended question:

> We know that the last 12 months have been difficult on educators and students. How has COVID-19 impacted you as an educator or your students?

A total of n=1,014 stakeholders provided a response to this question which were analysed by ORIMA Research according to themes.

The focus of this literature synthesis is on the impact on teaching. The review begins by examining teacher workload pre- and post-pandemic, before describing key drivers of the evident workload increase. Following this, the impact of increased workload on teacher wellbeing, and the added anxieties and stresses will be outlined. The review then looks at teaching practices, and how curriculum and assessments may have changed.

Information about the impact on students has also been included. Specifically, this review explores access and equity, including the digital divide, remote learning for vulnerable students, and

[17] Proportions of stakeholders providing comments against different themes will not be included in this review, as only one free-text question about COVID-19 was included in the survey. The top of mind, unprompted responses from stakeholders are unlikely to fully reflect their views.

attendance. It will examine learning loss anticipated as a result of remote learning, the role parents play in providing support, and the psychological wellbeing of students.

Finally, the review will look to the appetite for change in education, based on the emerging narrative from researchers and policy makers. This includes a brief overview of existing models and frameworks that could be leveraged going forward, including those of distance learning models, education in an emergency, and blended or flipped learning. Finally, a number of education technology considerations will be outlined.

Search strategy

Due to the time sensitivity of the topic, this synthesis has adapted a rapid systematic review approach to quickly search for, appraise and synthesise the evidence for the given research question. It aims for exhaustive, comprehensive searching, including of grey literature, to identify what is known as well as research limitations and gaps. Rapid reviews are a streamlined approach to synthesising evidence in a timely manner. They adopt the systematic review method, however the research question may be broader and the evidence synthesis is largely descriptive, with limited and cautious interpretation of the findings (Khangura et al, 2012).

Table 2 outlines the databases and search tools utilised for the review. Relevant articles provided directly by AITSL or referenced in identified literature were included as part of the search results.

Table 2: List of databases used in the search

Primary databases	Grey literature databases and search tools
Academic Search Complete	APA PsycEXTRA
CINAHL Complete	Social Science Research Network
Education Source	ResearchGate
Psychology and Behavioural Sciences Collection	EThOS
APA PsycInfo	RAND Publication Database
ERIC	Google Scholar
Open Dissertations	Australian State and Territory education department websites
Global Health	Federal education department website
Coronavirus Research Database	Australian Council for Educational Research

A comprehensive search of these databases was conducted, using a carefully developed strategy, designed in conjunction with the AITSL project team, that identified the underlying concepts and search terms. Concepts and terms included: COVID OR coronavirus OR SARS CoV-2 OR pandemic; AND primary school OR secondary school OR high school OR elementary school OR middle school; AND education* OR teach* or lesson* OR classroom OR instruction.

A clear list of inclusion and exclusion criteria was established prior to the search to ensure a focused approach. Criteria were reviewed by the project team at AITSL prior to commencement, and shown in Table 3.

Table 3: Inclusion criteria

Inclusion criteria	
Date	From January 2020
Source type	Primary research articles, literature reviews, expert opinion
Peer reviewed	Both peer reviewed and non-peer reviewed
Language	English
Focus	K-12 schooling, Australia

The PRISMA model (Moher et al, 2021) was used to evaluate studies found via the search to assess their applicability to the literature review focus according to the given criteria. This tool is based on a checklist of 27 items that pertain to a literature review, including objectives, eligibility criteria, study characteristics and summary of evidence. Records of the screening process were kept, and relevant data was extracted from the studies included in the synthesis. In total, out of over 4,000 initial records found, 18 primary research articles and literature reviews have been included in this synthesis (see Appendix).

Impact on teachers

Work demands

Pre-pandemic, data from the Organisation for Economic Co-operation and Development's (OECD's) Teaching and Learning International Survey (TALIS) found that Australian teachers' hours of work per week had both increased and exceeded the OECD average (Thomson & Hillman, 2019). As summarised by Wilson et al, 2020, Australian research from individual States and Territories also confirms an ongoing pattern of long work hours for the profession – for example, for teachers in Victoria (Weldon & Ingvarson, 2016), New South Wales (McGrath-Champ et al, 2018), and Western Australia (Fitzgerald et al, 2019). High workload also has a flow-on effect in terms of wellbeing (discussed further below) and teacher efficacy: 64% of Australian principals in TALIS felt that their high workload limits their effectiveness as a school leader.

Post-pandemic, evidence points to significant further increases in work demands, including complexity, for teachers across Australia, especially in states most affected by COVID-19. A large-scale survey of approximately 12,000 NSW public school teachers (Wilson et al, 2020) found that after the shift to remote learning, teachers experienced an increase in:

- Complexity of their work (for 92%)
- Administrative tasks (84%)
- Lesson preparation time (81%)
- Hours (74%)
- School meetings (58%)
- Student welfare issues (54%)
- Collection, analysis and reporting of data (54%)[18]

At the peak of the COVID-19 restrictions, a national survey of almost 1,000 teachers found that 68% of primary and 75% of secondary teachers reported working more hours per week (Ziebell et al, 2020) – almost half of all teachers reported working 6 extra hours per week, and some reported working more than 20 extra hours per week. In another survey of around 3,000 educators from Australia and New Zealand (Flack et al, 2020a), over half of Australian educators indicated that their planning time had increased significantly.

Drivers of workload increase

Dramatic increases in workload were attributed to several factors. Notably, the speed with which teachers needed to shift to online learning necessitated rapid re-organisation and lesson planning (Norman, 2020) and navigating the steep learning curve of information technology access and online learning tools.

While in many cases dedicated training – including webinars and on-demand professional learning courses (e.g. NSW Department of Education, 2020; Victorian Department of Education and Training, 2020, Education and Health Standing Committee, 2020) – was provided to teaching and non-teaching staff, in one study only 50% of teachers at least somewhat agreed that they had been provided with

[18] This result is interesting given NAPLAN, the largest school-based collection in the country, was cancelled for all Years 3, 5, 7 and 9 students (National Assessment Program, 2021).

professional development to help them move to remote learning (Ziebell et al, 2020). It may be that this result relates to the quality and sufficiency of the professional development provided, or lack of time to undertake the training, rather than indicating no training was offered to teachers. Other studies (cited in Rapid Research Information Forum, 2020) found that 30% of teachers had been given training relevant to remote learning prior to the pandemic, and international research presents a similar picture (Espino-Dias et al, 2020; Jain et al, 2021; Lepp et al, 2021).

Together, this data suggests that a significant proportion of educators have been required to 'learn as they go' – "we are building the plane whilst it is in the air" (Flack et al, 2020a, p.16). The number of technological options available to schools and educators added to this challenge. Flack et al (2020a) found that the majority of educators were using a mix of between two to five different technologies, with over 140 digital platforms, tools and applications identified.

An additional contributor to increased workload was mode and/or location of teaching. Many teachers were required to juggle some level of face-to-face teaching for those students attending school premises, synchronous and asynchronous remote teaching from school or their homes (blended learning), and preparation of hard copy lesson materials for students without computer or internet access (Flack et al, 2020a; Gore et al, 2020; Wilson et al, 2020; Ziebell et al, 2020). Teachers with their own children also faced significant difficulties balancing home life with work – in one study, 37% felt this had an impact on their teaching (Flack et al, 2020a).

What do AITSL stakeholders say?

- Many indicated an increase in workload and time requirements for educators
- Some reported difficulties learning and using technology
- Some also reported a negative impact on their professional development

Wellbeing

Over a decade of research has suggested that teaching is one of the most stressful professions in which to work (Dabrowski, 2020). Data suggests that teacher wellbeing – both physical and mental health – was also already poor pre-pandemic. For example, in a NSW Public Service Commission report (2017), 60% of teachers reported 'unacceptable' levels of work stress, compared to the public sector average of 41%. The pandemic has contributed to teacher workload and pressure, which has impacted teacher morale and wellbeing (Gore et al, 2020).

As the pandemic reached Australia, educators shared the broad community anxiety relating to the personal risk of contracting COVID-19: 25% of teachers in one study (Wilson et al, 2020) reported being in a 'high risk' category. Teachers were also concerned about their family members and students contracting COVID-19, especially as the narrative shifted from a focus on risk among the elderly to the potential for transmission in children (Dabrowski, 2020).

Teachers who became 'front line workers' and were required to continue teaching face to face felt particularly exposed. Data indicates that educators at Victorian schools, which had higher proportions of on-site students, were more likely to indicate they were struggling (Learning First, 2020). At least 1,635 COVID-19 infections were linked with early childhood education settings or schools in Victoria (Russell et al, 2020). Finally, some teachers felt unsupported by their school, parents and the community, with unrealistic expectations around learning continuity and communication that added pressure to an already challenging situation (Heffernan et al, 2021).

Drawing on the work of Lortie (1975), Hargreaves and Fullan (2020) also detail how the pandemic has fundamentally undermined foundational aspects of a teacher's work: as teachers derive satisfaction from the 'psychic rewards' of interaction with and feedback from students, remote learning has eroded this intrinsic reward.

Whilst teacher wellbeing was not ignored by departments and school leaders, Dabrowski (2020) criticises many of the existing teacher wellbeing initiatives as being tokenistic, reactive, or blind to the complex community context in which schools operate. As improving teacher wellbeing has long been known to improve student outcomes (Briner & Dewberry, 2007; Cowden et al, 2020), researchers have called for post-pandemic reflections to include a focus on supporting our critical teaching workforce as individuals (as reviewed by Bond, 2020b), and building collective efficacy and social capital within schools (Dabrowski, 2020).

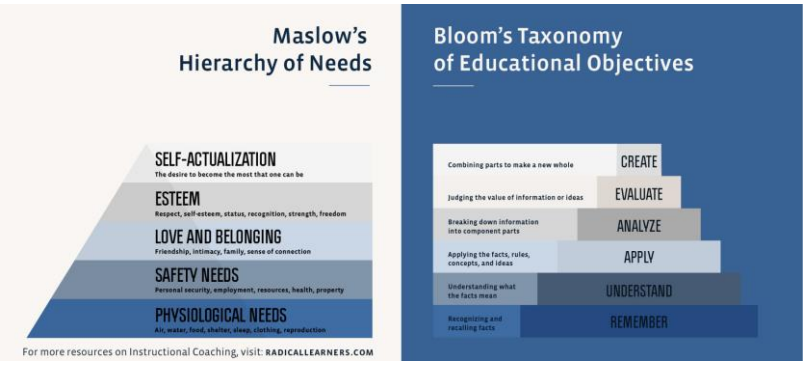
Emerging evidence from AITSL's 2021 Stakeholder Survey already suggests that some educators have or will leave the profession as a direct result of the pandemic – the full toll on the teaching workforce is yet to be seen.

What do AITSL stakeholders say?

- Many reported an increase in fatigue or stress/ a decrease in their wellbeing
- Some experienced reduced hours or loss of work, or were planning to leave the profession
- Some also indicated a lack of support from their school or their Department, and less commonly, from parents and the community.

Teaching practices

In March 2020, a report written to inform the work of UNESCO[19] called for 'Maslow before Bloom' as a stop gap approach for pandemic education planning – in other words, health, safety and wellbeing should be prioritised above formal education (Doucet et al, 2020). This approach has been evident in the research that has emerged since (Cowden et al, 2020; Flack et al, 2020a; Lepp et al, 2021; Pokhrel & Chhetri, 2021).



Source: https://www.instructionalcoaching.com/meeting-teachers-where-they-are-maslow-before-bloom/

Flack et al (2020a) found that teachers' primary concerns about the impact of COVID-19 on their teaching were related to the disruption of social connections with their students (77% cited this as a concern) followed by a decrease in the effectiveness of their teaching (63%). Of note, educators were particularly divided about the efficacy of online learning compared to in-classroom learning (Flack et al 2020a), and some struggled to adapt their teaching methods, content and communication to an online mode. Others, however, felt re-energised and focused their efforts on how to deliver the best learning experience for students (Learning First, 2020).

Importantly, Bond (2020b) found that pre-pandemic, collaborative tools like Google Classroom and Edmodo were linked to student engagement, while content created by external third parties was likely to lead to disengagement. Bond (2020b) also highlights that teaching quality, appropriate scaffolding, clear explanations and student feedback is more important than whether teaching is synchronous or asynchronous.

[19] United Nations Educational, Scientific and Cultural Organisation

Curriculum

A number of decisions around curriculum needed to be made early on in 2020 as schools determined what short term remote learning might look like. Further decisions were required as repeated and extended lockdowns became a reality. The literature suggests that 'trimming' the curriculum was the primary approach in both cases. Trimming the curriculum generally focused on reducing content and the number of student tasks (Learning First, 2020), and for early primary or students with additional needs, 'sticking to the basics' of letters and numbers (Armitage & Loukomitis, 2020). Some teachers moved in part to a broad, activity-based approach to learning that engaged students and their parents together (cooking, outdoor activities) while others prioritised health and wellbeing over the curriculum (Victorian Department of Education and Training, 2020).

More significant trimming was also undertaken by some schools. While a survey by Sandvik (2020) found that English, Maths, Humanities, and computer-based subjects were well suited to online learning, practical subjects did not easily translate online and content was harder to deliver. As such, some schools sought and were granted exemptions by the Victorian Registration and Qualifications Authority to not teach subjects including physical education and arts (Learning First, 2020).

Curriculum delivery modes were varied. For example, the Victorian Learning and Support Continuity survey found that 72% of schools utilised live online chat sessions or video conferencing, 67% used online formats with hard-copy or content on USBs for students without online access, 62% made recorded lessons available, and 54% provided material for self-directed study (Learning First, 2020).

In NSW, the experience of, and resources from, distance learning educators were directly leveraged. Within a short period of time, NSW was able to launch the Learning from Home hub which contained over 400 teaching and learning resources as well as information and support for wellbeing for schools, students and families (NSW Department of Education, 2020).

Teaching

Adaptations to teaching varied by subject, year level, and the combination of online tools and platforms being used. Most of the available evidence examines the categories of teaching tools used, such as those described by Flack et al (2020a) and Ziebell et al (2020):

- Student or course management systems (Compass, SEQTA)
- Synchronous collaboration tools (WebEx, Zoom, Microsoft Teams)
- Virtual learning environments with (Education Perfect, Seesaw, Edrolo) or without (Google Classroom, Blackboard Learn, Moodle) integrated learning content.

Internationally, Bond (2020b) summarises adaptations to teaching and learning activities, including asking students to take videos or photos, assigning independent student projects, and rewriting activities to include equipment or ingredients available at home. Similar activities were found by Ziebell et al (2020), as well as pre-recorded teaching videos, provision of existing recorded content, and the use of interactive games and tasks.

In a survey that included 513 teachers, the Engage Victoria study found that teachers needed to break instruction into smaller units, with more explicit instruction and tutorials (Learning First, 2020). This is supported by research into online learning that finds younger students, in particular, require more structure, scaffolding and support (Cowden et al, 2020; Dabrowski et al, 2020).

Some researchers have applauded the "informal, improvised, scrappy digital practices that have helped teachers, students and parents get through schools at home" (Selwyn, 2020). This includes the use of TikTok for sharing 60-second 'chunks' of content or feedback, and WhatsApp for parent communication, which have acted to maintain community, connection and motivation.

Assessment

Both summative assessment (evidence of learning to assess student achievement against outcomes or standards) and formative assessment (evidence of a student's knowledge or understanding to inform teaching practices: Wiliam, 2017) were particularly challenging during periods of remote schooling. Summative assessment was not a focus for some schools (Learning First, 2020), and others expressed concerns with cheating (Flack et al, 2020a) and difficulties authenticating student work remotely (Sandvik, 2020).

Formative, 'in the moment' adjustments to tasks (Ziebell et al), necessitated some quick work arounds online. Some teachers used quiz platforms (like Kahoot) to test understanding, and breakout rooms in Zoom for individual or small group conferencing (Bond, 2020b).

Nationally, NAPLAN was cancelled for all Year 3, 5, 7 ad 9 students (National Assessment Program, 2021), and in Victoria at least there is an absence of system-wide assessment data (against Victorian Curriculum Achievement Standards) over the period of extended remote schooling. One Departmental survey found that up to one third of schools had yet to determine the academic progress of a majority of their students over Term 2 (Learning First, 2020).

Impact on students

Access and equity

In early 2020, a report for UNESCO (Doucet et al, 2020) already anticipated the need to address inequities in education that would be exposed by the pandemic. One key inequity relates to the digital divide, and the evidence presents a consistent story about student access to suitable technology. Ziebell et al's (2020) survey found that for 49% of teachers, *all* students had access to devices for remote learning – most students had access to devices for another 43%. Although large-scale provision of devices and internet access occurred in NSW and Victoria (NSW Department of Education, 2020; Victorian Department of Education and Training, 2020), device availability was found to be problematic where families needed to share devices. It was also difficult for lower socioeconomic status (SES) schools, already under-resourced, who needed to support families with hardware access and then technological support where digital literacy was low (Armitage & Loukomitis, 2020, confirmed in Flack et al, 2020b).

Access to reliable internet was mixed, with only 10% of teachers having stable and reliable internet for their classes all of the time. Sandvik (2020) reported that over 40% of secondary students at a Victorian independent school experienced internet disruptions that affected their ability to engage in learning, and 7% of students in the Victorian Parent and Student Learning from Home Survey noted that issues with technology were the hardest thing about learning from home (Learning First, 2020).

Existing family and student vulnerability was also a concern in terms of technology access, family digital literacy and learning away from school premises. For example, an early Rapid Research Information Forum report (2020) anticipated that Aboriginal and Torres Strait Islander students would miss out on 'culturally responsive pedagogies' and connection with Indigenous educators and other students. Evidence from Victoria suggests that social isolation was evident amongst this cohort (Victorian Department of Education and Training, 2021); however, positive impacts were also apparent, including improved communication with families leading to better parent engagement, and strong stakeholder connections (including with Aboriginal community groups and advocacy organisations) to support students and families.

Data suggests that while already high achieving and motivated students were likely to thrive during remote learning (Pokhrel & Chhetri, 2021; Victorian Department of Education and Training, 2021), negative impacts were felt for specific cohorts. These groups included early years students in the foundational part of their education (up to Year 2), those with a disability, refugee background students who may have had existing trauma, and those families for whom English was not a first language (Learning First, 2020; Victorian Department of Education and Training, 2021).

The literature suggests that teachers, schools and jurisdictions have a strong understanding of the existing vulnerabilities in their student populations, and the ways in which the pandemic may have affected them. For example, both New South Wales (NSW Department of Education, 2020) and Victoria (Victorian Department of Education and Training, 2020) have documented the adaptations and additional supports that were put in place to try to mitigate access and learning issues for vulnerable students. However, these equity issues are entrenched (Eacott et al, 2020) and will require continued intervention.

What do AITSL stakeholders say?

- Some indicated that students faced difficulties accessing online learning
- Some also reported negative impacts on vulnerable and at-risk students or communities.

Attendance

School attendance during remote schooling was affected by a number of factors, including student technology access, family support and student wellbeing (Learning First, 2020).

In Victoria, while the overall absence rate averaged 6% during Term 2 2020, attendance dropped each week as students became less engaged (Learning First, 2020), although this pattern was not atypical pre-pandemic (Victorian Department of Education and Training, 2020). Absence rates increased along with the level of school disadvantage (based on the Student Family Occupation and Education (SFOE) measure), and absences for vulnerable cohorts – especially Aboriginal and Torres Strait Islander and students in out-of-home care – were two to three times higher than the state average by Week 6 of the Term (Learning First, 2020).

Of note, the very nature of remote schooling during the pandemic meant that recording student attendance became problematic and schools used multiple attendance tracking methods, and as noted by the Victorian Department of Education and Training (2020) the data should be treated with caution.

What do AITSL stakeholders say?

- A few reported a decrease in student attendance or other attendance issues
- Some indicated that students were less engaged in learning, or that learning was not being enforced at home

Learning

As an extended period of remote learning became more likely in parts of Australia, concerns about learning loss increased. In an early report for the Australian Government, the Rapid Research Information Forum (2020) chaired by Chief Scientist Dr Alan Finkel anticipated that extended remote learning arrangements could result in poorer educational outcomes for almost half of Australian students. Particular cohorts identified as at risk included students from low SES backgrounds, those with English as a second language, special needs students and those in rural and remote areas. A report released by the Grattan Institute in June 2020 also anticipated that disadvantaged students will have lost up to a month of learning, and recommended a large scale 'tutoring blitz' to help these students recover (Sonneman & Goss, 2020).

Evidence about the impact of remote learning, however, has been mixed. For example, a majority of teachers in Flack et al (2020a) felt that additional instruction would be needed for students when they returned to school. However, a NSW study conducted in Term 4, 2020 (Gore et al, 2020), found no significant differences in achievement growth for Years 3 and 4 students between 2019 and 2020 (based on Progressive Achievement Test results in mathematics and reading). For specific subgroups of students, only Year 3 students in the least advantaged schools (based on ICSEA[20] band) recorded significantly less growth (in mathematics) compared to the 2019 cohort. No significant differences in achievement growth were recorded for Aboriginal or Torres Strait Islander students, and middle ICSEA band Year 3 students (for mathematics) actually improved.

A Victorian Departmental survey found that most school leaders felt their students had made the expected level of progress in Term 2, although around one in three judged progress to be below expectations (Learning First, 2020). As noted earlier, significant difficulties with – or even absence of – the normal assessment processes will have made these appraisals difficult.

The full impact of the 2020 school disruptions is not yet clear. Release of the initial results for NAPLAN in August 2021 are likely to be heavily scrutinised for evidence of learning loss.

[20] Index of Community Socio-Educational Advantage

What do AITSL stakeholders say?

- Some stakeholders reported a decrease in academic achievement, or more students 'falling behind'

Importance of parental support

The existing evidence about the importance of parental engagement in, and support of, their children's education is clear (Dabrowski et al, 2020), One of the three factors the Rapid Research Information Forum (2020) report highlighted as likely to moderate the effectiveness of remote schooling was family support and home environment, in addition to device and internet access, and teacher and student capability.

Parent, guardian and carer support and supervision was indeed considered crucial to students' learning and their experience of remote schooling (Armitage & Loukomitis, 2020). The Victorian Department of Education (2020) noted that students who benefited most from remote learning included those who were self-motivated learners and received parent and carer support. This was especially the case for early primary students, but also meant the pressure on these parents was greater as they needed to provide more 'hands on' assistance with technology and routine (Learning First, 2020).

Learning First (2020) notes that remote learning created stronger family-school connections and communication within Victoria, and internationally a similar story has appeared (Pokhrel & Chhetri, 2021). In a national study on perceptions of Australian schooling, 42% of respondents said their perceptions of teachers' work had improved as a result of COVID-19 (10% said their perceptions were more negative: Heffernan et al, 2021).

Wellbeing

As previously discussed, the 'Maslow before Bloom' approach for pandemic education planning recognises the importance of educators taking care of students' physiological needs, safety and sense of belonging (Doucet et al, 2020). During the pandemic, establishing processes for monitoring and supporting student wellbeing became a priority for most schools, particularly for vulnerable children and those with special needs (Armitage & Loukomitis, 2020; Victorian Department of Education and Training, 2020). Reflecting the wellbeing impacts on young people,

These processes in Victoria included:

- a health and wellbeing contact allocated to every government school
- mental health surveys for secondary students, and a colour system for primary students to check how they were feeling
- targeted follow-ups for students identified to be struggling

In NSW, teachers and school leaders reported that student wellbeing was heavily impacted by general community and parental anxiety, as well as challenges associated with adapting to new ways of learning (Gore et al, 2020). Other factors identified as key influences on student mental health and wellbeing included individual learning needs, parent / carer support, and digital access / literacy of both students and their parents / carers (Victorian Department of Education and Training, 2020).

In a Victorian study, students expressed concerns around the impact of decreased social interaction and disrupted routines on their wellbeing (Armitage & Loukomitis, 2020). Results from the Victorian Parent and Student Learning from Home Survey indicated that 18% of primary students, and 12% of secondary students, felt that not seeing their peers in person was the most difficult thing about learning from home (ahead of other issues, Learning First, 2020).

Kids Helpline – a free telephone and online counselling service for 5-25 year olds – recorded a 12% increase in contacts over January to April 2020 (Nicolson et al, 2020). Mental health concerns arising from COVID-19 was the most common issue raised by children and young people accessing the service during this time.

The emotional challenges of remote learning are magnified among vulnerable children in particular, who are already living with great stress or disadvantage (Clinton, 2020). Almost half of Australian children and young people (46%) are vulnerable to adverse effects on their social and emotional wellbeing due to being physically disconnected from school (Brown et al, 2020). Drane et al (2020) highlight the importance of school connectedness and emotional safety in maintaining student wellbeing among vulnerable students, and how the loss of these may lead to increased psychological distress (anxiety and depression).

Upon returning to face-to-face learning in schools, students were found to exhibit both psychological and emotional, as well as social and behavioural, issues (Gore et al, 2020). More specifically, teachers and school leaders reported heightened levels of stress, anxiety, frustration, fatigue and aggression among students, which they associated with a reduced curriculum and poor social interactions with peers. Of note, Dabrowksi et al (2020) point out that social connections and relationships are protective factors against school dropout, and technology can play a role in maintaining these connections. Teachers and school leaders expressed concerns that the impacts of the pandemic on student mental health and wellbeing may be ongoing (Gore et al, 2020).

What do AITSL stakeholders say?

- Some indicated that students experienced increased anxiety or stress/ decreased wellbeing
- Others noted an increase in student behavioural/ social issues

Appetite for change

Broadly, the move to remote schooling in Australia was seen as successful (57% of Australians agreed with this sentiment, 9% disagreed: Heffernan et al, 2021). Despite the significant challenges for teachers, families and students, many feel the pandemic has brought about some positive changes. Wilson et al (2020) posed several potential outcomes to NSW educators and found that a majority agreed they would be positive, including:

- The upskilling of teachers on digital/ online education (91%)
- More teacher collaboration (77%)
- Greater respect for teachers' professional work (68%)
- Disruption to the current school system (67%).

What do AITSL stakeholders say?

- Some reported having improved IT skills and better use of technology
- A few reported the pandemic allowed them to reflect on or change their practice, whilst others indicated that they changed their curriculum or teaching methods.
- Some felt there was better understanding and connection between teachers, parents and the community

The NSW Department of Education (2020) also identified a number of ways in which the experience of remote schooling could be leveraged, including "opportunities to re-imagine the way learning is delivered to meet the contextual and individual needs of student[s] and staff" (p.18). There is a renewed focus on disadvantaged communities and 'wide scale system restarts' (Dabrowski et al, 2020), and Eacott et al (2020) believe that even broader questions need to be asked about school funding and resource distribution, school and system autonomy and the equitable distribution of quality schooling.

Hargreaves and Fullan (2020) also support a 'transformation' post-pandemic and note that COVID-19 may spur a deepening of professional capital as it has "unleashed a wealth of energy in innovative, collaborative and laser-focused problem solving" (p.334). They support a new wave of education that focuses on intrinsic rewards and engagement for both students and teachers, supports the active inclusion of parents, and builds collaborative professionalism. Dabrowski (2020) echoes this sentiment, noting that schools offer communities a space to rebuild and the opportunity to develop new, respectful partnerships between teachers and families that 'share the load' of improving student outcomes.

Finally, Kidson et al (2020) suggest that the pandemic has demonstrated we can now "move beyond the fallacy that change is unlikely because its scale is so great" (p.20), and must focus on the knowledge and experience of educators and school leaders in any national education reform.

New pedagogies, more training

Consistent with prior research (reviewed in Bond, 2020b), many teachers and students have experienced first-hand how EdTech can have a positive impact on student engagement. Some schools have also recorded an increase in parent participation in online parent teacher interviews and information nights compared to face to face participation rates (Armitage & Loukomitis, 2020). A natural question being asked since the intense period of remote schooling in Australia is therefore how EdTech can be leveraged moving forward as a tool for teaching and learning, parent engagement, and communication.

The Rapid Research Information Forum report (2020) notes that learning online involves more than just having teachers skilled in digital technology – that it will require new or adapted pedagogies, careful management of content, support at the institutional level, and adapted ways of engaging with students. Flack et al (2020a) agree that effective teaching online requires both an adaptation of traditional, classroom-based pedagogy and the mastering of a new one. There is broad agreement that dedicated training for pre-service and experienced teachers in digital technology and pedagogy is crucial (Bond 2020a; Espino-Dias et al, 2020; Jain et al, 2021; Pokhrel & Chhetri, 2021).

While there has been little time to establish what a new model of teaching and learning may look like, much work has, in fact, already been done in the academic sphere and in the context of existing distance, remote and online education models and education in emergencies. As noted in the introduction, some of those best practice principles were shared across the sector as the pandemic hit in early 2020. Far from starting from scratch, then, jurisdictions, schools and educators will be able to turn back to these existing frameworks with the benefit of first-hand experience.

The pandemic has demonstrated that how teachers, students and families connect and communicate is vitally important to the experience of teaching and learning. The following section briefly summarises the principles and models that will be especially relevant going forward, and should be carefully considered as technology platforms rush to fill gaps in the market.

Distance and remote learning

Distance learning (often paper-based, correspondence style) and remote learning (mobile or radio broadcasting, streaming) have existed in Australia as early as 1914 – today, distance and remote options are available in every state and territory (Good Schools Guide, 2021). Identified success factors from early distance learning models include cooperation between parents and teachers and cultivating student interest in their own environment (summarised in Cowden et al, 2020). Recent literature (Dabrowski et al, 2020) confirms many of these principles as best practice, highlighting the importance of parental involvement, student engagement, community partnerships, inclusion and equity and support for teachers.

Another relevant model comes from Virtual School Victoria (VSV, 2019), which informs curriculum planning, lesson planning and program development and incorporates multiple elements that include relationship development, information exchange, assessment and reflection. Existing remote and distance models, teacher, family and student experiences with this form of learning (including for vulnerable cohorts), and student outcome data should be a key source of information for educators and policy makers to consider going forward.

Education in emergencies

Emergency teaching focuses on providing temporary access to instruction and support quickly and reliably during a crisis. Given the speed with which it needs to be enacted, it is unable to fully utilise quality online learning approaches (Dabrowski et al, 2020). The research that examines education in emergencies (including natural disasters such as bushfire or flood and conflict) highlights several success factors for re-establishing and continuing education post crisis, and reflects much of the Australian experience during the pandemic. These factors, which stress the importance of student wellbeing, include (Cowden et al, 2020; Dabrowski et al, 2020):

- The cultural and contextual relevance of the response

- An adaptive and collaborative leadership team
- Strong partnerships with agencies, communities, schools, teachers and families
- Flexibility of, and access to, resources based on the existing curriculum
- Appropriate knowledge and skills for teachers, families and students

As crisis situations that necessitate a rapid change in the delivery of schooling will invariably affect other sectors and communities concurrently, research on education in emergencies will be valuable in identifying communication, collaboration and partnership factors that help communities bounce back.

Blended learning

Since the mid-1990s, researchers have thought about what good teaching and learning should look like in an online environment (e.g. Chickering & Ehrmann, 1996). After the peak of the pandemic restrictions in many countries, the foresight of some of these models has become clear. Chickering and Ehrmann (1996) outlined several best practice principles which include faculty-student communication and collaboration; student-student communication and collaboration; active learning techniques; prompt feedback; and respect for diverse learning preferences. Over time, a concept of 'connected learning' has also been developed, which integrates relationships, opportunities and interests, and emphasises context, shared culture and networks (Ito et al, 2020).

These existing conceptualisations are particularly relevant for blended learning. Blended learning combines face to face teaching and learning with online (which may or may not happen 'live', or synchronous, with teaching). Existing evidence suggests this may be as effective as classroom learning for some students (Cowden et al, 2020), and Heffernan et al (2021) found that 77% of the Australian public surveyed supported the creation of a hybrid or more flexible model of schooling in the future, noting it may particularly suit hard-to-staff specialist areas of study.

A 'flipped learning' approach has also been gaining traction in recent years as a way to improve student learning and engagement, and is common in the higher education sector. Bond (2020a) describes flipped learning as an inversion of traditional lessons, whereby content (including video or other computer-based instruction) is provided to students outside of the classroom for learning and review, with (in person) class time used for interactive group activities and feedback. As conceptualised by Bond (2020a), flipped learning can take into account a student's immediate setting – including family support, access to technology, the curriculum, their teachers, school and peers.

As most students in Australia are now back in the classroom, and interest from the community in new ways of teaching is high (Ziebell et al, 2020), blended or flipped learning may be useful models for primary and secondary classroom teaching that naturally dovetail with the new-found digital skills and familiarity of students and educators.

Technology considerations

Much of the focus as education has returned to 'normal' has been on how digital technologies can be used to support teaching and learning in the modern classroom (Norman, 2020). This includes reviewing how different systems and platforms best suit the needs of educators and students – whether they be fully integrated student and course management systems, or learning tools for specific circumstances (such as, for flexibility, to use pre-recorded content and instruction for missed lessons (Armitage & Loukomitis, 2020).There is also likely to be continued focus on efficacy and how to optimise the use of technology for education based on the understandings of neuroscience and how the brain develops (e.g. Espino-Dias et al, 2021).

Teachers have noted that a quality technology platform (72%) along with resources for distance teaching pedagogy (66%) are crucial for high quality distance instruction (Flack et al, 2020a). However, there is also mixed satisfaction with current EdTech tools, concerns around data and privacy (Selwyn, 2020), and fears that teaching and learning may be negatively affected by unsuitable products (Cowden et al, 2020).

One overarching consideration is the role of EdTech companies as schooling returns to normal and the interest in technology in education is high. Warnings against companies trying to replace teachers rather than assisting them have already emerged (Dabrowski et al, 2020; Jain et al, 2021). Further, much pandemic research has recommended that device access and the needs of vulnerable cohorts, including digital literacy skill development for families, be a priority moving forward (as reviewed in Bond, 2020b). If EdTech is only really a solution for the privileged (Jain et al, 2021), then it should not be at the centre of an evolving education model – as Bond (2020b) suggests, students must be in the centre of thinking going forward.

Conclusion

"This is an enormous experiment, executed at very short notice."

(Secondary teacher, quoted in Flack et at, 2020a)

This literature synthesis aimed to describe the impact of COVID-19 on Australian schools, particularly the lessons learned and practices that are likely to endure once normalcy returns, based on sources of primary evidence. It also outlined the findings from the Australian Institute of Teaching and School Leadership's (AITSL's) 2021 Stakeholder Survey that are consistent with the literature. The synthesis utilised 18 primary research articles and literature reviews and numerous supporting sources from Australian and international researchers to paint this picture.

Clearly, the disruption COVID-19 caused in the education sector, particularly during the extended period of remote schooling in 2020, was significant. The pandemic is also far from over, with a fourth lockdown coming to an end in Victoria at the time of writing. However, teachers, schools and policy makers arguably now have space to more deeply engage with the evidence with the benefit of significant experience and reflection.

NAPLAN results for 2021, student outcome and school-based assessment data, and system-level data collections will be crucial for gauging which student cohorts require additional, ongoing learning and wellbeing support. For example, the Victorian Student Attitudes to School Survey included the collection of student wellbeing data in 2020, and this was expanded in 2021 with schools able to add the Depression, Anxiety and Stress Scale (DASS 21) and other wellbeing metrics to their survey. Surveys of teachers, school staff and teachers and other workforce data (including entries and exits) will also be valuable in assessing ongoing wellbeing impacts. Each jurisdiction will need to triangulate across data sources to identify how their student cohort and teacher workforce have been most affected and prioritise responses accordingly.

Despite the broad interest in leveraging educational technology, teacher and student wellbeing and the access and education gaps for vulnerable students will need to be addressed before any large-scale investment in digital solutions. The pandemic has shown that existing technology platforms and tools, at least in combination, were largely sufficient for remote schooling and there is a risk that EdTech will be put at the centre of reform dialogue. Any change must put students at the centre, taking account of their individual and family circumstances, learning needs, and educational goals. We must preference the knowledge and experience of schools and teachers, and any changes must be flexible, co-designed and evidence-based. Evaluation frameworks for new programs, tools and models should be established alongside the necessary data collection mechanisms to support them.

Finally, the teacher workforce has rapidly upskilled in the use of technology for teaching and learning, but gaps remain. Continued education and training, including for initial teacher education students, will stand the workforce in good stead as the nature of schooling and its relationship with technology inevitably evolves.

Appendix

Citation	Method	Sample	Location	Timing
Armitage & Loukomitis, 2020	Focus groups	9 groups with secondary school students, parents and carers of primary and secondary school students, primary and secondary school teachers and primary and secondary school principals across mainstream schools, 2 groups with principals of special schools and parents of children with special needs (n numbers not given)	Victoria	June and July 2020
Bond, 2020b	Systematic review	A synthesis of 89 studies in K-12 across 70 different countries	International	2020
Doucet et al, 2020	Crowdsourcing, research and discussions	Teachers, academics and professionals – sample size not specified	International	2020
Drane et al, 2020	Literature review	Various sources	International	2020
Flack et al, 2020a	Survey	n=2,373 teachers in Australia and n=1,183 in New Zealand, across all educational sectors	Australia and New Zealand (national)	April 2020
Flack et al, 2020b	Survey	n=2,171 teachers in Australia, across all educational sectors	Australia (national)	April 2020
Gore et al, 2020	Surveys, Progressive Achievement Tests (PATs), interviews	n=2,156 students and n=123 teachers in public schools	New South Wales	2020
Heffernan et al, 2021	Survey	n=1,012 Australian adults	Australia (national)	December 2020
Jain et al, 2021	Survey	n=288 teachers from private and government schools	Delhi, India	April and May 2020
Learning First, 2020	Surveys, focus groups, interviews	Various data sets including: ♦ Data from over 60 schools that administered their own surveys of teachers, parents and students ♦ *Engage Victoria* survey that collected submissions from n=2,316 parents, n=513 teachers, n=206 school leaders, n=150 students,	Victoria	2020

Citation	Method	Sample	Location	Timing
		n=15 peak association representatives, and a small number of education support and service providers ♦ *Parent and Student Learning from Home Surveys* of n=20,240 students from 188 schools, and n=12,160 parents from 234 schools ♦ Weekly school leader surveys, including the *Learning and Support Continuity Survey* of n=1,033 principals (representing 66% of all government schools) ♦ 28 workshops and focus groups, including 10 with school leaders, 8 with students, 4 with teachers, 3 with Senior Education Improvement Leaders in the Department, and 3 with parents ♦ Administration data sets the Department collects on student absenteeism and other issues such as teacher and school leader wellbeing		
Lepp et al, 2021	Semi-structured interviews	n=16 Estonian basic school science teachers across 18 schools (both public and private)	Estonia	April and May 2020
Nicolson et al, 2020	Thematic analysis	26,709 counselling contacts to Kids Helpline	Australia	Jan-April 2020
Norman, 2020	Not specified	Teachers – sample size not specified	New South Wales	2020
NSW Department of Education, 2020	Stakeholder submissions	Members of the Department's Executive Leadership Group, a cross-sector advisory panel, principals and teachers from both the public and non-government school sectors – sample size not specified	New South Wales	Not specified
Sandvik, 2020	Survey	n=249 Year 7-12 students at an independent school, n=51 teachers across all educational sectors	Victoria	2020
Victorian Department of Education and Training, 2020	Surveys, correspondence, complaints, parent hotline calls, administrative data, intelligence of the Department's regional staff and stakeholders, interviews, focus groups, public submissions	Various groups of the Department's stakeholders including staff, students and parents – sample size not specified	Victoria	2020
Wilson et al, 2020	Survey	n=11,789 public school teachers	New South Wales	April 2020
Ziebell et al, 2020	Survey	n=1,200 teachers across all educational sectors	Australia (national)	2020

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