Australian Secondary Principals' Association (ASPA) and Pivot Professional Learning

Submission – Education in Rural and Complex Environments – COVID-19

Submission Date: 15th June 2020
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[redacted]

A thriving public school system is essential to nation-building. Australian Government schools cater for the majority of students including those students who experience disadvantage. At a time when the myriad of socioeconomic and related health impacts on children are being discovered, and uncovered, the Australian government has an opportunity to lead and support their communities by setting and maintaining funding levels that facilitate a thriving public education system filled with excited children at the heart of families proud to send their children to government schools.

Equity of educational outcomes

Universal access to education does not currently translate to a nationally consistent minimum standard of education provision for all students. The national goal that all students achieve their potential requires a powerful funding response that closes the gaps that exist in the universal, yet imbalanced education provision that prevails today. There is also evidence from across the nation, that the proportion of students with higher and more complex learning and social needs is growing in government secondary schools compared to other sectors.

In a country where the government has a public, moral and human rights obligation to every child, any funding model must have social justice and equity as a foundation. Our current system is high quality but low equity.

This disparity in income distribution is acknowledged internationally (OECD reports) as an indicator of student performance on any measure - that is, that students from families with higher income are more likely to achieve at higher levels than students whose families' incomes are lower. Low income is not a guarantee of low levels of achievement, but the data comparisons are compelling and deeply concerning.

The emergence of the COVID-19 virus and the ensuing pandemic have caused the significant inequities in the Australian education system to be magnified. The required alternative education modes provided by schools and consequential effect on modes of 'traditional learning' have caused very significant challenges for students, their families and educators alike. The notion of the development of the ability of the student has been pushed further into the background – dictated by access to IT devices, access to connectivity and appropriate parental/carer supervision. It is this changed framework that this submission addresses. A recent study of 2500 teachers (Appendices 1 and 2) found that teachers in low ICSEA schools were three (3) times more likely to say that access to internet and technology was a major concern for teachers. High ICSEA schools were three (3) times more likely to feel confident in their ability to communicate with students and parents. Low ICSEA schools were three (3) times more likely to have teachers with under five

(5) years teaching (Educator Perspectives on the Impact of COVID-19 on Teaching and Learning, Appendix 1). COVID-19 and the rapid shift of most Australian students to a period of distance learning has exacerbated and exposed existing inequities in the Australian education system.

As a Nation, for what purpose do we provide education for young Australians?

It is the position of the Australian Secondary Principals' Association that the Federal Government has an obligation to ensure that high quality public secondary education is provided to every young person no matter what their geographic, social or personal circumstances.

Education in our Nation is a democratic and human right. In contemporary Australia, the provision of education also comes with an expectation of a minimum standard that ranks highly when international comparisons are made. Australia has slipped in this area in recent years. For more than a decade funding models for school education have not targeted school performance and need, but relied on a distribution of resources that did not best nurture the future prospects of the young in Australian communities - Australia's future.

The adolescent years are **high stakes years** as they are significant predictors for life success and wellbeing. It is during these years that exposure to adult and community problems have the potential to change the lives of young people. The opportunity to fund and support the needs of each adolescent is essential. The inclusive priorities of our national secondary school system should be the centerpiece of a fair and productive school-funding model. Further, there must be recognition that the core purpose of all secondary schools is education and that funding and additional resources should be targeted to ensure that all secondary schools can focus on the key work of teaching and learning.

Only government can ensure that there is a quality secondary schooling option for everyone and only government, working with the profession, can require achievement benchmarks that reflect the quality of that schooling. Transparent, consistent and equitable funding of national secondary education will be the measure by which the young people of this nation, their parents, teachers and principals will judge the commitment of governments to the education of all Australians.

Australia's challenge is to redress disadvantage through investment in government education, where the greatest challenges demonstrably lie. The review of Funding for Schooling Final Report (2011) provided more than sufficient evidence to suggest that Australian education was not meeting the needs of the most vulnerable. The Report outlines the findings by a highly credentialed independent review body. This was the most comprehensive review undertaken and it has not been fully implemented.

The Australian Secondary Principals' Association advocates for the full implementation of the needs-based funding model to enable school leaders to put in place sustainable interventions and staffing to address the needs of students in their communities.

A non-political approach to Education:

It would be reasonable to assert that our educational leaders are best placed to make strategic decisions about the educational future of schools and systems, but it appears, unfortunately, that many decisions concerning education are made for political reasons and not necessarily sound educational reasons.

Something as important as education should not be dependent upon political funding or election cycles. It is time for agreement from all political parties around education to secure the future for our students. Education needs our political leaders and our education leaders to commit to a long term (10-year plus) plan and a structure for regular review. The further challenge then is to commit to its sustainability by ensuring adequate funding. Finland made a conscious decision in the recent past to adopt a non-political approach to education; making universal decisions about key factors that would not change with election outcomes. Australia **MUST** take this path if we are to achieve the outcomes desired by all Australians.

There is general agreement from all sides of politics on the aims for education and goals for our students. There is much common ground but we get tangled up in political cycles and trying to solve the same problems in different ways.

We have to get commitment from all parties to State initiatives and transparent long-term planning and funding which will enable the systematic achievement of common goals. The education of our children is too important to let politics get in the way.

Following is the ASPA/Pivot response in broad categories of –

1. Valuing staff
2. Enhancing student potential
3. Building positive relationships

Appendices and additional content:

- Appendices:
    - Appendix 1: Educator Perspectives on the Impact of COVID-19 on Teaching and Learning in Australia and New Zealand
    - Appendix 2: Excerpt from the upcoming publication by Pivot, The Disproportionate Impact of COVID-19 on Low Income Schools in Australia
    - Appendix 3: The Australian Technology Ecosystem during COVID-19
- To support our submission as well as provide additional context, we are sharing a webinar based on the Pivot research. This webinar features Australian education experts from ASPA, Evidence for Learning and the Grattan Institute and a recent high school graduate, Pivot's Student Voice Advocate. You can watch a shortened version of the webinar **here** or the full webinar **here.**
- In addition, you can find the referenced Australian Principal Occupational Health, Safety and Wellbeing Survey 2019 can be found **here.**

Valuing staff

Issue/commentary	The way forward
➢ Involvement of Principal Associations in decision making	○ Principal Associations are experts at running schools. ○ Associations must be involved in the development of policies for school and system operations. A scan of the COVID-19 experience effect on School Leader operations, function and wellbeing should be done.
➢ School leader wellbeing	○ Wellbeing is an ongoing matter for school leaders, especially those in lower-income schools (Riley 2020). ○ Establishment of a National Strategy to address School Leader wellbeing drawing heavily on support from Principal Associations, private providers and expert groups e.g. Headspace.
➢ Challenges of various technology platform use	○ Technology platforms for online learning are not a "replacement" for in-classroom learning. ○ Research should be undertaken to determine best practices for schools and develop national recommendations for effective platform use for online/distance learning.
➢ PL for online pedagogy	○ School Leaders and teachers are not trained in the pedagogy required to deliver online curriculum. ○ Programs in teacher training (there is a role for the Regulators to play) and teacher ongoing professional learning should be developed to support online pedagogy. ○ Dedicated professional learning should be developed that addresses the leadership required in schools for our School Leaders to enable distance learning. ○ Systems and tertiary institutions should look to the very successful Schools of Distance Education for case studies of effective pedagogy.
➢ Reporting	○ The reporting process has been disrupted by COVID-19; e.g. what is reported on, over what timeframe, the nature of the

	report – summative or formative, etc. ○ The Commonwealth's student reporting requirements should be reviewed.
➢ Return to school/shift to distance learning – process, procedures	○ Research shows that schools have taken wildly different approaches with different levels of success about online learning and the return to school. ○ Government and systems should provide and explain consistent information to school leaders for community information transmission. The clarity of messaging is paramount.
➢ Role of private providers	○ Private providers possess enormous resources and skill sets that enable quality learning. ○ It is recommended that each jurisdiction collect, store and publish a bank of private providers and the resources/skills they have.

Enhancing student potential

Issue/commentary	The way forward
➢ Student wellbeing	○ Data clearly shows that student mental wellbeing suffered during separation from their peers (data shows that students prefer the company of their peers in the learning environment, lack of confidence with certain devices). ○ Further research must be done in this area and be provided to schools to improve school and system policies on fostering student wellbeing.
➢ Access to technology	○ Access to technology (appropriate devices and network coverage) are major hurdles. ○ Jurisdictions should work with the Commonwealth to limit this effect.
➢ How does optimal learning occur at home?	○ With the distance learning pedagogies used – what is the optimal style (pedagogy used by Home Tutors in Schools of Distance Education) and how does this affect the learning process. ○ Research must be conducted and results

	provided to schools on best practices and strategies for meeting the needs of all learners. ○ This research should also be used to influence the development of ITE programs to ensure new teachers are able to support distance learning.
➢ Administration e.g. ATAR, assessment	○ A longitudinal study should be conducted to determine effects from COVID-19 on ATAR and other assessments. The notion of tertiary entry is problematic with current school-based assessment. ○ These findings should be made available to school leaders.
➢ Role of private providers – IT, curriculum roll-out	○ Research shows that schools used between 2-5 technologies to support distance learning. ○ Private providers can facilitate the provision of contemporary IT resources for learning that are not normally accessible to schools. ○ Jurisdictions should enable private providers to provide these resources to school leaders.
➢ Use of data – e.g. attendance	○ The use of data is central to creating quality learning environments – because the learning environment has changed – it's important to identify key data sources and benchmarks to help track the impact of the rapid shift to distance learning. ○ The use of these data is critical to subsequent learning programs developed by the school.

Building positive relationships

Issue/commentary	The way forward
➢ Holistic development of self	○ Principals should have access to high quality professional learning/network development that is aimed at understanding leadership skills as they pertain to student needs given the changing learning environment. ○ In times of disruption and stress (as in the reaction to COVID-19), this understanding

	can be drawn upon to lead groups of people effectively (students, staff and community). ○ This professional learning will also contribute to school leader wellbeing.
➢ Community development	○ Rural and remote communities are important stakeholders in supporting distance learning. ○ Development of a community engagement plan with schools, local government and regional service providers.
➢ ACSSO involvement	○ Parents were forced to become active partners in distance learning and are engaged at higher rates in their children's education than ever before. ○ There must be greater involvement with parent groups (ACSSO and P&C Associations) – both at the National and jurisdictional level in the decision-making and promotion of these decisions within the community.
➢ Media	○ The media are a powerful tool – all forms of media must be utilised for the positive promotion of education and education reform. ○ Jurisdictions have a significant role to play here in smoothing the way for positive media relationships.
➢ Data gathering and debrief process	○ Data should be gathered by each system that is relevant to the learning agenda of schools in that jurisdiction. ○ This data should be provided to the Principals' Association in that relevant jurisdiction to drive policies and initiatives.

Adam Smith - Education Analyst and Commentator in An Open Letter to Students in Australian Schools 15 / 11 / 2012 http://sheilas.org.au/2012/11/an-open-letter-to-students-in-australian-schools said:

"To the 3,541,809 students in 9435 schools in Australia, I wish I could promise that no matter where you live, no matter which school you go to, you will receive an education that equips and inspires you for the rest of your life. I wish I could promise that no matter how you learn or where you learn, your education will give you the skills you need to succeed. I wish I could promise that at the end of thirteen years of schooling, you will be confident and ready to embark on a combination of work and further learning that will give you the chance to live the life you want to live.

Sadly, I can't promise any of this. Sadly, despite the many billions of dollars spent on school education in Australia, too many of you are missing out on the type of education you deserve".

While the conversation continues about the funding model for education, the gap between those for whom demography determines destiny, and those for whom there is real choice, continues to widen.

ASPA represents some 4000 Principals, Deputy Principals and Heads of Department in Secondary, P-10 and P-12 schools across Australia. We are dedicated to the moral purpose that universal access can serve – an education provision that enables all students to achieve their potential.

Pivot Professional Learning is an Australian education insights organization that works with more than 600 schools and system partners. Pivot is committed to providing insights and evidence to drive educational outcomes at all levels of P-12 education.

Thank you for the opportunity for ASPA and Pivot to contribute to the Education in Rural and Complex Environments Review.

Appendix 1:

Educator Perspectives on the Impact of COVID-19 on Teaching and Learning in Australia and New Zealand

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EDUCATOR PERSPECTIVES ON THE IMPACT OF COVID-19 ON TEACHING AND LEARNING IN AUSTRALIA AND NEW ZEALAND

APRIL 2020

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About Pivot

Pivot Professional Learning (Pivot) is a leading educational company that provides insights about teaching practice for teachers, school leaders and the sector. From our headquarters in Melbourne, we provide practical and evidence-based support to schools and educators across Australia and New Zealand. Our support programs and systems aim to enhance teaching – primarily by harnessing the power of students' voices. Our work is supported by international research and data from over 65,000 Australian classrooms.

Our flagship Student Perception Survey on Teaching Effectiveness provides teachers and schools with reliable, timely and detailed feedback to guide responsive teaching. Pivot's reports are clear, incisive and easy to digest. Our research-based insights support continuous improvement in classrooms.

Over a number of years, Pivot has partnered with major educational organisations and agencies including

- Australian Association of Mathematics Teachers (AAMT)
- Bastow Institute for Educational Research, Victoria
- Professional Learning Communities Division, Department of Education and Training, Victoria
- Centre for Education Statistics and Evaluation (CESE), NSW

About Education Perfect

Education Perfect (EP) is a leading digital education platform, providing transformative online teaching and learning experiences for more than 1.2 million students in over 4000 schools across 80 different countries. We have offices in Australia, New Zealand and Singapore. The company has been supporting schools and teachers across the world during the disruption and closures due to the COVID-19 pandemic, and has joined Pivot in producing this research project to provide invaluable feedback to school and teaching communities.

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Executive Summary

Between 9 and 13 April 2020, more than 3500 teachers in schools across Australia and New Zealand took part in a survey about the impact of the COVID-19 pandemic on teaching and learning. The survey captured valuable and current insights from teachers and other educators across all school sectors – primary and secondary, government and independent – about the new realities and unprecedented challenges of enforced distance teaching and learning.

Conducted by leading Australian education consultancy Pivot Professional Learning in partnership with online platform Education Perfect, the survey asked educators a series of questions about their experiences with online teaching during the COVID-19 schools shutdown, and sought their views about the impacts on school children and educational outcomes. The survey results provide revealing – and in some ways alarming – insights into the realities of distance education, both for teachers and home-bound students, as communities and governments continue to face difficult choices about education during this unprecedented crisis.

A total of 2373 educators in Australia and 1183 in New Zealand responded to the survey questions on issues related directly to current COVID-era experience and practice, including:

- The challenges of meeting student needs from a distance
- The use of educational technologies to support distance teaching
- Teacher well-being
- Teacher needs.

Their responses revealed a profession under extraordinary pressure – dealing with unfamiliar technologies and teaching methods; struggling with additional demands for preparation; worrying about the lack of social contact with students and colleagues; and, fearing for the educational and psychological welfare of students, particularly those in early primary school.

More than 90 per cent of teachers who took part in the survey, both in Australia and New Zealand, had at that time either already moved to distance teaching, or were planning to do so shortly.

Findings and highlights

Meeting student needs from a distance

- Teachers were divided about the efficacy of online learning, with almost equal numbers responding they were 'confident' and 'not confident' about it. However, some 80 per cent believed students would need extra instructional support when they got back to school.
- When teachers were asked to pick their top three concerns about distance learning on students, the most common responses were: students' social isolation, a decrease in student well-being, and potential learning loss. Notably, educators ranked students' social needs above learning loss.
- Respondents expressed anxiety about a loss of social connection with their students and a decrease in the effectiveness of their teaching practice. "Distance teaching is a useful tool to support and differentiate in-class teaching, but cannot compensate for the loss of subtleties of social human interaction in the classroom," one wrote.
- The difficulty of engaging students who typically need one-on-one attention, especially the young, was a theme. "I think online learning is a good tool for the self-motivated students and for students to work at their own pace, but far more difficult for those who need more motivation and someone who is present in reality," wrote one teacher.
- Teachers struggled with how best to adapt their teaching methods for a digital environment. One

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educator responded: “It is like being a beginner teacher all over again, as you don’t know what works or doesn’t work well. You have to transition into a new teaching format very quickly, which is stressful.

- A large minority of educators – 39% in Australia and 42% in New Zealand – reported being only “somewhat confident” or “not at all confident” in their school’s ability to meet students’ learning needs online. Primary educators were significantly less likely to report feeling confident than secondary educators.
- Respondents in remote, rural and lower socio-economic areas expressed concerns about students’ lack of access to technology and reliable internet. Primary teachers also expressed worries that they were less able to meet the needs of their students in this regard.

Educational technologies

- Schools are using between 2-5 technologies to support distance learning. Teachers expressed mixed levels of satisfaction with four broad types of remote learning technologies and tools now in use across schools. Each technology platform type was rated by teachers according to various criteria. The responses ranged from just under 50 per cent satisfaction up to more than 80 per cent.
- Teachers reported widely differing levels of confidence in various technologies being used for teaching remotely. They rated platforms with integrated digital learning content (such as Education Perfect (EP)) as most sufficient for a range of teaching practices and expressed the highest levels of confidence in their usability. This may reflect a decrease in the planning and preparation time required when teachers select instead of build digital curricula, but additional research is needed.
- Those whose primary technology was collaboration-based (such as Zoom or Skype) were twice as likely to be “not at all confident” that the technology supported various aspects of their teaching practice. This may in part be due to these technologies being general collaborative tools that were not created specifically to support teaching and learning.

Teacher well-being

- Teachers reported significant increases in demands on their time under remote learning. Across both countries, 70% of teachers said planning time had increased either “slightly” or “significantly.” Written responses included references to an “exponential” workload increase, with one teacher writing: “We are exhausted.”
- Respondents in blended environments felt burdened by having to simultaneously teach students in person at school (for those attending) and remotely. “It is extremely challenging to have to teach both face-to-face and online concurrently,” wrote one.
- Teachers with children voiced additional concerns. As one shared, “There are NO accommodations being made for the fact that we are teaching up to 30 kids while trying to manage the learning (and care) needs of our own children in the background.”
- Many teachers also revealed they felt socially isolated. One wrote: “Not only do we teachers miss the social connection with our students, we miss being with our colleagues and friends … teaching is successful when connection is strong.”

What teachers need

- School leaders and teachers, when asked what kind of feedback was most critical to support distance teaching and learning, overwhelmingly nominated feedback from students as most important. Educators valued student feedback not only around their perceptions of teaching and learning online, but also with respect to their personal well-being.

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Recommendations

- **Prioritise Maslow's hierarchy over Bloom's taxonomy while students are learning from home**: As we have found in this report, teachers are concerned for their students' emotional well-being. We suggest schools and governing bodies explicitly respond to these disruptions by making social emotional well-being for all stakeholders a key area of focus in distance learning and the transition back to the classroom.

- **Prioritise instructional support for students once they get back to the classroom**: 80% of teachers believe that students will need extra additional support when they get back to the physical classroom. This is an opportunity for systems and schools to identify strategies for providing these interventions and prepare in advance for their implementation.

- **Provide interventions for high-need populations (including primary students)**: Based on both our study and existing research, students of low socioeconomic status, students with disabilities, indigenous populations and younger students are being impacted disproportionately by the shift to distance learning. We suggest that interventions for these groups be implemented where appropriate to ensure more equitable outcomes.

- **Increase opportunities for relationship building**: The results of the survey indicate that current relationships between students and teachers are at risk due to the shift to distance teaching. We suggest that schools increase their use of virtual strategies for reducing isolation and building relationships during distance learning.

- **Implement a multi-platform approach that integrates curricular resources**: Schools are purchasing and using multiple platforms to achieve the right mix of features to support distance teaching. There is no one-size-fits-all platform, but learning environments with curricular supports rate the highest for teachers and leaders.

- **Recognise and celebrate the work being done in schools across the region**: The rapid shift to distance teaching has required an enormous effort by educators across Australia and New Zealand. While there are clear challenges, many have found ways to innovate like never before. It's time to recognise and celebrate the great work that is being done and ensure that educator and student voices are honoured when designing new solutions and strategies.

- **Prioritise student feedback**: Student voice and agency often come last when prioritising education research and initiatives. It's clear from the analysis that teachers want feedback from students as it provides the best chance for responding to student needs effectively. While this is an educator survey, we recommend systems, schools and providers make a concerted effort to provide avenues for student voice and feedback. This is an ideal opportunity to find out what is working for the group that matters most: students.

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Introduction

In late 2019, the novel coronavirus SARS-CoV-2 (now designated by the World Health Organization as COVID-19) emerged and rapidly spread throughout the globe. COVID-19 is estimated to be up to ten times as deadly as seasonal influenza (Willis, 2020). As of late April 2020, the WHO has recorded at least 2.6 million confirmed infections and over 200,000 deaths globally (WHO, 2020). With those numbers expected to rapidly rise, countries around the world have endeavoured to slow the rate of infection.

In Australia and New Zealand, as in countries worldwide, there has been a widespread shutdown of non-essential businesses and schools to encourage social distancing. Therefore, like 1.5 billion students across 165 countries, students in Australia and New Zealand have been either asked or required to stay home from school (UNESCO, 2020). Yet the two countries have differed in the pace, uniformity and severity of their guidelines. New Zealand's government mandated the closure of all schools in late March, bringing the school holidays forward and requiring approximately 800,000 students to transition to distance learning on 15 April (Gerritsen, 2020; Education Counts, 2019a). The New Zealand government has stated that the nation-wide school closure will last indefinitely (Collins, 2020). In contrast, Australian state and federal governments have mandated diverse guidelines and timelines for school closure. While the prevailing course of action is to keep students learning from home (if that is a viable option for the family), schools in many states remain open to students. Victoria, Queensland, Tasmania and the Australian Capital Territory are continuing with distance learning in term two; New South Wales is planning on progressively reopening schools from May 11; South Australia, Western Australia and the Northern Territory are encouraging parents to send their children to school for term two (Carey and Fowler, 2020; Karp, 2020). It remains unclear when the majority of Australian students will return to school.

Widespread school closures have already led to an abrupt and rapid shift to online modes of teaching and learning. By the second week of April, the vast majority of schools were on school holidays or holding pupil free days. Even so, two-thirds of all survey respondents' schools at the time of the survey (April 9-13, 2020) had already moved to distance learning in response to COVID-19, including 65% of schools in Australia and 70% of schools in New Zealand (see Table 1). Another quarter of respondents stated that their school was preparing to move to distance learning. Less than 1% of respondents indicated that their schools had no plans to move to distance learning.

Table 1. State of the shift to distance learning across the ANZ region, April 2020

	Australia	New Zealand
My school is preparing to move to distance learning in response to COVID-19	28%	20%
My school has moved to distance learning in response to COVID-19	65%	70%
My school moved to distance learning before COVID-19	5%	8%
My school has no plans to move to distance/online learning	0.4%	1%
I am not sure if my school will move to distance learning in response to COVID-19	1%	1%

Note. Australia (n=2366), New Zealand (n=1180)

Even for teachers well-versed in using information and communication technology (ICT) in their classrooms, this move represents an unprecedented challenge with an incredible pace of change. Educators have had to adapt to this rapidly shifting, new paradigm while managing their own challenges, including stress, isolation, illness, and caring for family members (Gorman, 2020). With an unclear timeline for school reopenings, educators will have to continue distance learning for the foreseeable future. School closure has also caused significant challenges for parents and guardians that are now required to support their child's distance learning. Australia, for example, has around 20,000 registered homeschooled students in contrast to its 4 million traditionally schooled students that are now encouraged to learn at home (English, 2019). Many parents share the concern that their home environment is not equipped with the tools, such as internet access, to support both their child's learning and work commitments (Duffy, 2020).

In order to determine the impact of the COVID-19 pandemic on educators in Australia and New Zealand, Pivot, in partnership with Education Perfect, conducted a survey of over 3,500 active educators. The goal was to gather actionable data about the current landscape of distance learning in Australia and New Zealand. Our survey results provide a snapshot of the technologies currently used by educators, with a focus on their biggest challenges and the most pressing concerns. By surveying teachers and school leaders, the survey could indicate ways to improve the quality of distance teaching and learning. Specifically, survey results may provide insight into ways to support educators and students who are at higher risk for learning loss during remote instruction.

Methods

Pivot, an education insights company based in Melbourne, Australia, developed an online survey to ascertain educators' beliefs and responses to distance learning during the COVID-19 pandemic. Education Perfect (EP), an online learning platform, then distributed the survey to its database of over 60,000 contacts. Some, but not all, of the contacts were current or former EP customers. Pivot also shared the survey on its social media accounts and through advertisements on social media platforms, including Facebook and Twitter. EP and Pivot both encouraged respondents to share the link to the survey with colleagues, encouraging a broader group of responses. Survey respondents had the opportunity to enter a random draw for one of five $500 Gift Pay Vouchers. The survey was open for five days, from 9 April to 13 April, 2020.

Questionnaire details

The online survey consisted of 46 items, including 44 multiple-choice and multi-select items and two open-ended items. Respondents answered between 26 and 34 multiple choice questions depending on their role within schools. All respondents answered one open response question.

The survey first asked for background information about the respondents, including their position within schools, educational background, teaching experience, and access to technology at home. The survey also collected information about the respondents' schools, such as location, sector, and the schools' current participation in distance learning.

The rest of the survey covered three broad domains: implementation of instructional technology; shifting to online learning; and, necessary support and feedback. Respondents rated their own and their schools' readiness to transition to online teaching, learning and support. They also evaluated the current effectiveness of online communication between educators, families, and students. The next section of the questionnaire focused on how teachers and schools were using educational technology to support online learning. Questions addressed which devices and platforms schools were using and to what extent. It also asked for respondents' perceptions of the features and performance of these technologies, as well as their own comfort in using them. In the last section, respondents indicated some of their concerns about online teaching and supporting students remotely, including changes to planning and teaching time. Finally, the surveyed educators identified which supports and feedback they felt would be most important going forward.

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At the end of the survey, respondents saw one of two open-ended response questions. The first open-ended question stated: “Please let us know if there is any other feedback on the impact of distance teaching you would like to give that was not covered on this survey.” The second question asked: “In 25 words or less, what would you recommend as the best strategy for improving distance teaching and learning?”

Data Analysis

A total of 3,556 educators responded to the survey, 2,373 from Australia and 1,183 from New Zealand. Just over 85% of the survey respondents completed the questions in full. Partial responses were included for only the questions answered, with no further imputation or treatment of missing values. The partial response rate between Australia and New Zealand were comparable, at 16% and 14%, respectively. Of the two possible open-response questions, one was seen by 2,550 respondents, yielding 693 responses after initial data cleaning. The second open-response question was seen by 456 respondents, yielding 438 responses after initial cleaning.

After cleaning and sorting responses by question and by country, the researchers conducted a range of statistical analyses. Tables of frequencies and percentages, and cross-tabulations were used to present categorical variables, chi-square tests of independence were used to test for relationships between pairs of categorical variables, and a market basket analysis was used to examine patterns amongst multiple selection questions where the options were not mutually exclusive. Furthermore, researchers performed qualitative coding of themes based on the responses to open-ended questions (Saldaña, 2009).

Sample

The study sample included all 3,556 responses to the survey, of which approximately 2/3 of the responses were from Australia and 1/3 from New Zealand. All states of Australia and all regions of New Zealand were represented in the sample.

Table 2. Roles of Survey Respondents

	Australia	New Zealand
I'm a student teacher.	1%	1%
I'm a graduate teacher.	4%	2%
I’m a classroom teacher.	61%	59%
I'm a leading teacher.	13%	17%
I’m a year level coordinator.	5%	4%
I’m a domain leader.	5%	5%
I’m a pedagogical leader.	4%	3%
I’m an Assistant Principal.	1%	3%
I’m a Principal.	0.5%	1%
Other - Write In	6%	6%

Note. Australia (n= 2,370), New Zealand (n=1182)

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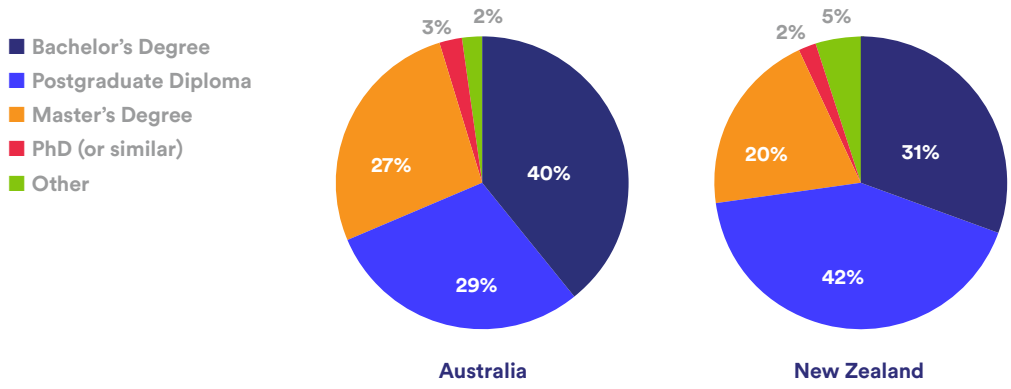
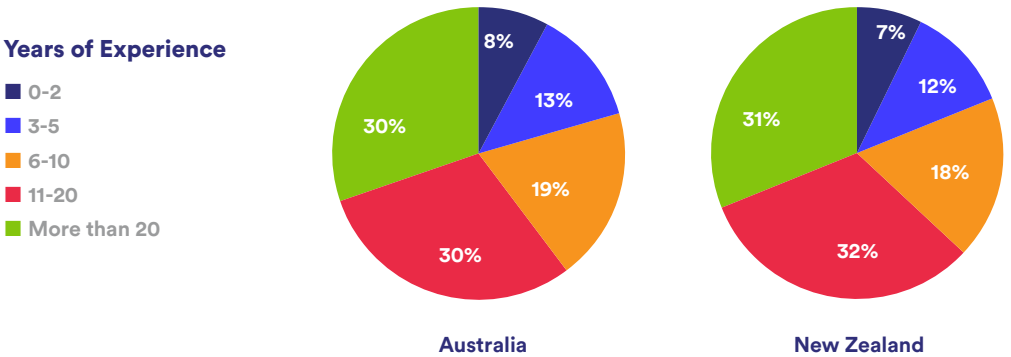
The survey sample included educators in a range of school-level roles, but the percentage of teachers and leaders was similar between countries (see Table 2). Approximately 79% of Australian respondents (n=1871) and 78% of respondents from New Zealand (n=926) were teachers, ranging from student to leading teacher positions. The survey, therefore, covered 0.8% of the full-time (and equivalent) teacher workforce in Australia and 2.3% of the full-time teacher workforce in New Zealand (McCrindle Research, n.d.; Education Counts, 2019b). Just over 15% of all Australian respondents (n=360) were school leaders (domain, pedagogical, year level, and principals), compared to 15.5% of respondents from New Zealand (n=184). Within those leaders, just under two per cent of Australian respondents (n=42) and four per cent of New Zealand respondents (n=47) were principals or assistant principals. Around six per cent of all respondents (n=211) placed themselves in the "other" category, which consisted of a mix of different educational roles, the most common being teaching assistants and teachers in casual roles. The language of some survey questions was varied based on respondents' roles within schools.

Figure 1. Respondents by Education Level



As shown in Figure 1, survey respondents represented a range of educational experience and credentials. Among Australian respondents, roughly 40% had a bachelor's degree, while approximately 29% had a postgraduate diploma and another 29% had a master's degree or higher. Conversely, 31% of respondents from New Zealand had a bachelor's degree, approximately 42% had a postgraduate diploma, and just over 22% had a master's degree or higher. The sample also included a high proportion of experienced educators (see Figure 1). Over 60% of both Australian and New Zealand respondents had over 10 years of teaching experience, with over 30% of the sample reporting more than 20 years of teaching experience. Less than 10% of respondents reported teaching fewer than three years.

Figure 2. Respondents by Years Teaching



Pivot

Of those participants who had a teaching role, roughly 15% in both Australia and New Zealand taught at a primary level, with approximately 85% teaching at a non-primary level. The proportions were similar between countries. However, as shown in Table 5, there were clear differences between countries in terms of school type. Slightly under half of all Australian survey respondents worked in government schools, compared to 77% of respondents from New Zealand. Conversely, slightly over 50% of Australian respondents and slightly under 22% of New Zealand respondents worked in independent or religiously-affiliated schools. Roughly one per cent of respondents from both Australia and New Zealand worked in international schools. The difference in school type between countries is unsurprising, as New Zealand has a proportionally larger amount of state (government) schools than Australia (Australian Curriculum, Assessment and Reporting Authority, 2019).

Table 3. Distribution of Respondents across Educational Sectors

	Australia	New Zealand
Government	49%	77%
Independent	25%	8%
International	1%	1%
Religious Affiliation	25%	14%

Note. Australia (n=2366), New Zealand (n=1180)

Pivot

Key Findings

Findings emerging from our analysis of the survey data encompassed the key themes of impact of the shift to distance teaching, implementation of instructional technology, and necessary support and feedback for educators. In the following sections, we present these findings, organised by theme, and provide recommendations when appropriate.

The challenges of meeting student needs from a distance

In this section, we review how participants responded to questions that asked about concerns educators have for their students. One of the most divisive items on the survey was the efficacy of online learning, with an almost equal number of respondents indicating a lack of confidence as those that indicated confidence. On the other hand, ~80% of respondents indicated that they believed that students will need extra instructional support when they get back to the physical classroom (this number is higher in primary schools).

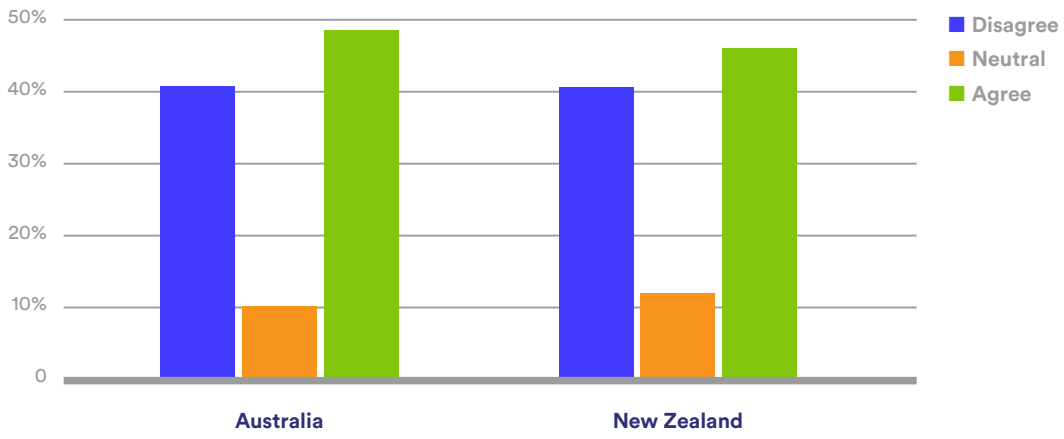
While respondents indicate a belief that distance learning will negatively impact student learning, they rate social isolation of students and social disconnection as their two major areas of concern. This indicates that the shift to distance learning has a cross-cutting impact on both learning outcomes and social-emotional health.

Additionally, the findings show that respondents in remote/rural and lower socioeconomic areas believe that access to technology and reliable internet are of major concern. The equity of access concern also is apparent for primary teachers who indicate that they are less able to meet the needs of their students, communicate effectively and rely on adequate support from a parent or guardian.

Educators were divided about the efficacy of online learning, but the overwhelming majority believed that students will need extra instructional support when they get back to the classroom.

Survey results indicated that educators' opinions were divided on the efficacy of online learning in comparison to classroom teaching. As shown in Figure 3 below, 48% of respondents from Australia and 47% of respondents from New Zealand indicated that they agreed with the statement: "I believe that online learning can be as effective as in-classroom learning." Conversely, 41% of respondents from both countries disagreed that online learning was as effective as classroom learning.

Figure 3. Educator Responses: Online Learning Can be as Effective as In-classroom Learning

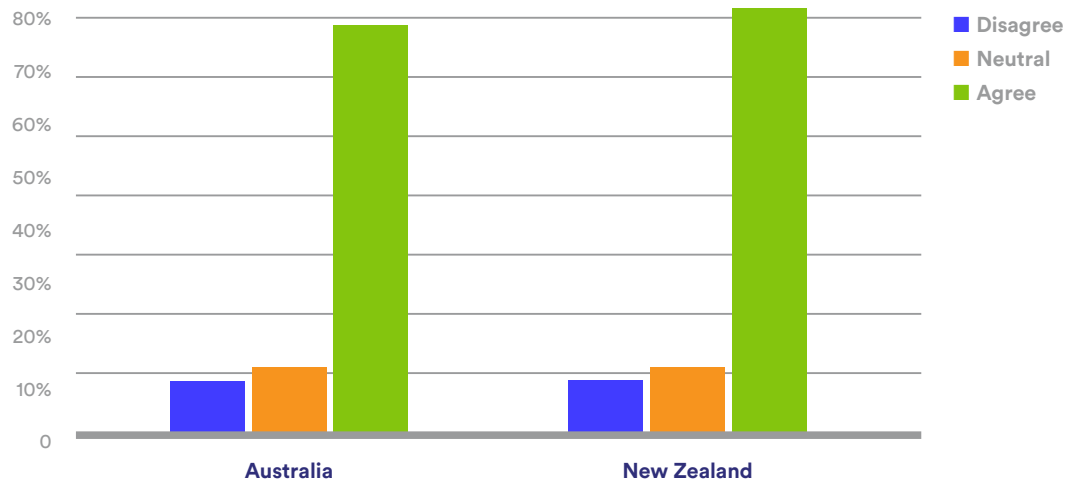


Note. Australia (n=2,083), New Zealand (n=1,038)

This bifurcated response suggests that the educators of New Zealand and Australia may be entering a phase of distance learning with sharply different understandings and expectations of how online teaching can help students learn. The reason for this divide is not immediately apparent, but provides an opportunity for further research to identify why some educators are confident and others are not.

We also asked educators about the extent to which they agreed or disagreed with the statement: "I believe that students will need extra instructional support when they return to the physical classroom." As shown in Figure 4 below, about 80% of educators in both countries agreed that they believe students will need extra support after in-person instruction resumes. Additional analysis showed that 25% of primary school teachers "strongly agree" that students will need extra support, as opposed to 15% of non-primary school teachers.

Figure 4. Educator Responses: Extra Instructional Support Necessary after In-Person Instruction Resumes



Note. Australia (n=2077), New Zealand (n=1039)

The contrast between the approximately 48% of respondents who agreed that the efficacy of online learning is comparable with classroom learning and the 80% of respondents who believe students will need extra support when they return to the physical classroom is striking. This apparent incongruity suggests a difference between what some educators believe about online learning in general and online learning in this particular case. It could reflect a lack of confidence in their school or their own ability to teach students from a distance. Alternatively, it could suggest that the conditions of the transition to online learning, including the speed at which it occurred and the scope of school closure, impacted students' learning outcomes. Teachers could also be cognisant of the particular stresses of lockdown, such as illness, social isolation, care for family members, and anxiety about the future that may be increasing cognitive load and decreasing learning.

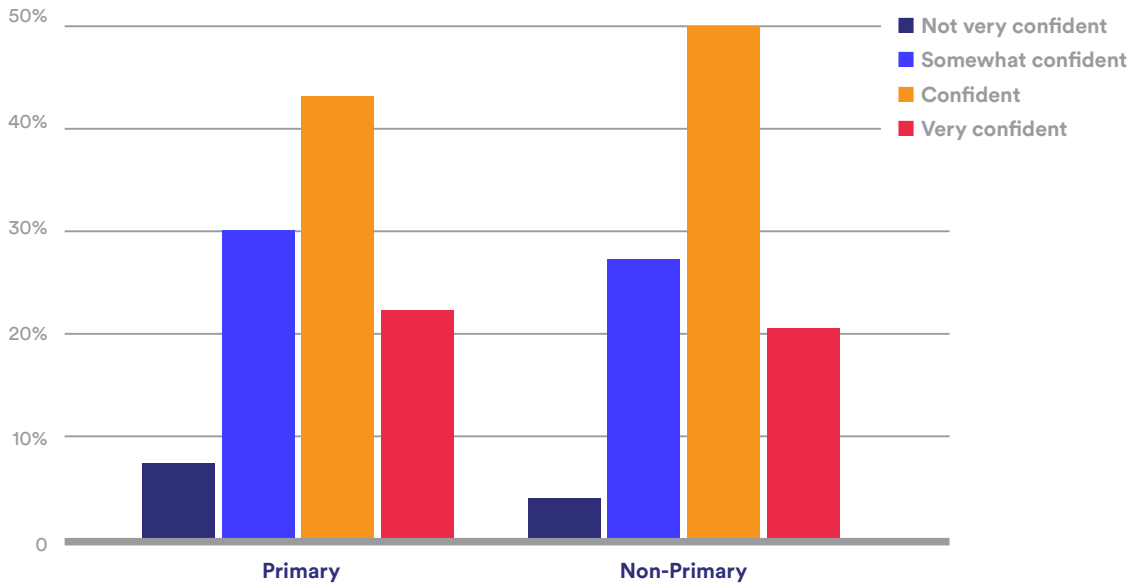
Nearly half of educators reported being less than confident in their ability to meet student learning needs online.

We asked educators how confident they felt in their school's ability to support students' online learning. As shown in Figure 5 below, the most frequent response was "confident." However, 39% of educators from Australia and 42% of educators from New Zealand reported being only "somewhat confident" or "not at all confident" in their school's ability to meet students' learning needs online.

Many of the educators' comments in response to the open-ended questions also reflected tenuous confidence. As one educator explained, "It is like being a beginner teacher all over again, as you don't know what works or doesn't work well. You have to transition into a new teaching format very quickly, which is stressful."

Although there were no statistically significant differences across the two countries in confidence in ability to support student learning online, we did find that primary educators were significantly less likely to report feeling confident (χ^2 (3, N=3123)=23.1, p<.001). As shown in Figure 3, the most frequent response for primary educators was "somewhat confident" (41%); in contrast, the most frequent response for teachers of older students was "confident" (43%).

Figure 5. Educator Responses: Extra Instructional Support Necessary after In-Person Instruction Resumes



Note. Australia (n=2090), New Zealand (n=1051). "Primary" typically refers to educators working with children from Foundation/Kindergarten to year 6. "Non-primary" refers to years 7-12 (13 in New Zealand).

Pivot

It was not surprising that primary educators in our sample were less confident about distance teaching online than those working with older students. Previous research has shown that distance online learning is challenging for primary school children (Musgrave, 2004). In the qualitative data, some respondents worried that primary school children lacked the independence and knowledge of technology to participate in online learning without relying on an adult at home. As one educator described: "There is total reliance on parents to use the technology and read the instructions … Too many platforms also mean too many things for very young students to learn. Too many passwords, too many steps to remember to view, do and submit work."

Educators primarily worried about student social isolation, well-being, and learning loss in the wake of school closures.

We asked ANZ educators to identify their top three concerns about the impact of the transition to distance learning on students. As shown in Table 3, educators' top three concerns in both countries were students' social isolation, a decrease in student well-being and learning loss.

Table 3. Top Teacher Concerns of Impact on Students

	Australia	New Zealand
Social isolation	56%	49%
A decrease in student well-being	54%	46%
Learning loss	46%	47%
Lack of access to technology/internet	37%	43%
Lack of support from a parent or guardian	36%	33%
Disruption in meeting learning targets	31%	21%
Lack of access to basic needs	13%	20%

Note. Australia (n=2216), New Zealand (n=1118)

Social isolation was the most frequent concern for respondents in Australia and New Zealand. This concern was also an emergent theme in the open-ended response data, with one teacher noting, "As teachers, we need to think about our students' current environments. Where are they learning, at what time, how are they feeling? It is not only about maths, chemistry or literature. It's about students in isolation."

Another interesting outcome of the analysis was the almost equal focus on student well-being and learning outcomes. In the qualitative data, many respondents expressed belief in a causal link between social interaction, well-being, and academic achievement. For example, as one respondent noted, "Distance teaching shows how important to students face-to-face contact in a classroom is to their learning, social interaction and well-being. My students appear lost and isolated despite our using a [platform] and [platform]."

The conviction of educators in our sample that well-being was foundational for learning is borne out by academic research. Hattie's (2008) comprehensive meta-analysis found that social cohesion within classrooms is positively associated with student outcomes. Similarly, Bücker and colleagues' meta-analysis found a statistically significant correlation between student subjective well-being and academic achievement (Bücker, Nuraydin, Simonsmeier, Schneider, & Luhmann, 2018).

This association likely carries over into virtual learning environments as well. Studies in online learning often find that socialisation is a central obstacle in the transition to online and distance learning (Nicol, Minty, & Sinclair, 2003; Romanowski, 2001; Zhang and Lin, 2020). Student-peer interactions are crucial elements in the design of distance learning to build solidarity, trust and community among students (Ni, 2013; Rovai and Barnum, 2003). A lack of socialisation in the online learning environment can have negative effects on student well-being that lead to learning loss (Jones, Samra and Lucassen, 2019).

Studies of blended learning (in which students and teachers engage in both face-to-face and online instruction) have shown that online relationships tend to be stronger when coupled with in-person experiences (Nicol et al., 2003; West, 2012, p. 85). Thus, in the case of school closures related to the COVID-19 pandemic, it is possible that relationships cultivated in face-to-face interaction in Term One may mitigate the potential negative impact of isolation. Several educators said as much in their open-response comments. For example, one said: "I am glad that I already have established a relationship with my students in Term One so that they can trust me."

Teachers were grappling with how to best adapt their teaching methods for digital environments.

> "My staff have worked incredibly hard to get this up and running. We are building the plane whilst it is in the air."

The challenge of teaching online went beyond learning to effectively navigate and deploy a suite of technologies. Educators' comments illustrated that many were also struggling to adapt their classroom pedagogies to the digital environment. For example, one said, "The teacher's main obstacle is to learn how to chunk material effectively, and what delivery methods are available, and how to use them to best advantage—how to introduce variety into lessons, with the view to keeping students engaged and learning focused."

Survey responses reflect a recognition that digital pedagogies differ from in person teaching methods. Digital pedagogies involve, at the most basic level, the use of digital technology in teaching and learning. To be successful, digital pedagogy requires reflection and understanding of how the use of the technology can alter and enhance the experience of teaching and learning (Croxall, 2013). Digital pedagogy in the time of distance learning could create opportunities to foster new forms of learning, but it requires learning a complex set of skills and ideas (QM and VLLA, 2019). Effective online teaching therefore not only requires the adaptation of traditional classroom pedagogy but the mastering of a new one.

The transition to online learning might be particularly difficult for primary school teachers, but also teachers who work with students with disabilities. Teachers indicated that differentiation for some students would be a major challenge, both because of the loss of personal engagement and the limits of digital learning. A teacher noted that educators need to learn new ways to assist students, such as "visual learners who need manipulatives to aide their understanding of concepts." Teachers of "hands-on" subjects also expressed frustration at the limitations of distance learning. As one science teacher explained: "Distance education has obviously impacted the first-hand investigations conducted by students. They can no longer DO complex experiments (only simple ones at home). They can view videos on YouTube instead." Practical subjects and career training (e.g., automotive repair or culinary arts) were similarly affected, as one teacher noted: "There is only so much paperwork we can do, how do we go forward without the practical aspect?"

Teachers' greatest concerns involved a loss of social connection with their students and a decrease in their teaching effectiveness.

> "Distance teaching is a useful tool to support and differentiate in-class teaching but cannot compensate for the loss of subtleties of social human interaction in the classroom."

Teachers were asked what their major concerns were for their teaching practice. As shown in Table 4, respondents in both countries identified that their number one concern was a disruption of their social connection with their students (a decrease in instructional effectiveness was the second highest concern). This aligned with the survey respondents' top concern for students being social isolation and a decrease in well-being.

Table 4. Teacher Concerns about Impacts on their Teaching

	Australia	New Zealand
A disruption of my social connection to my students	77%	73%
A decrease in my instructional effectiveness	63%	60%
Difficulties balancing my home-life with the needs of teaching online	42%	37%
Lack of learning support from parents/guardians	38%	40%
A lack of quality online instructional supports	22%	20%

Note. Australia (n=1749), New Zealand (n=883)

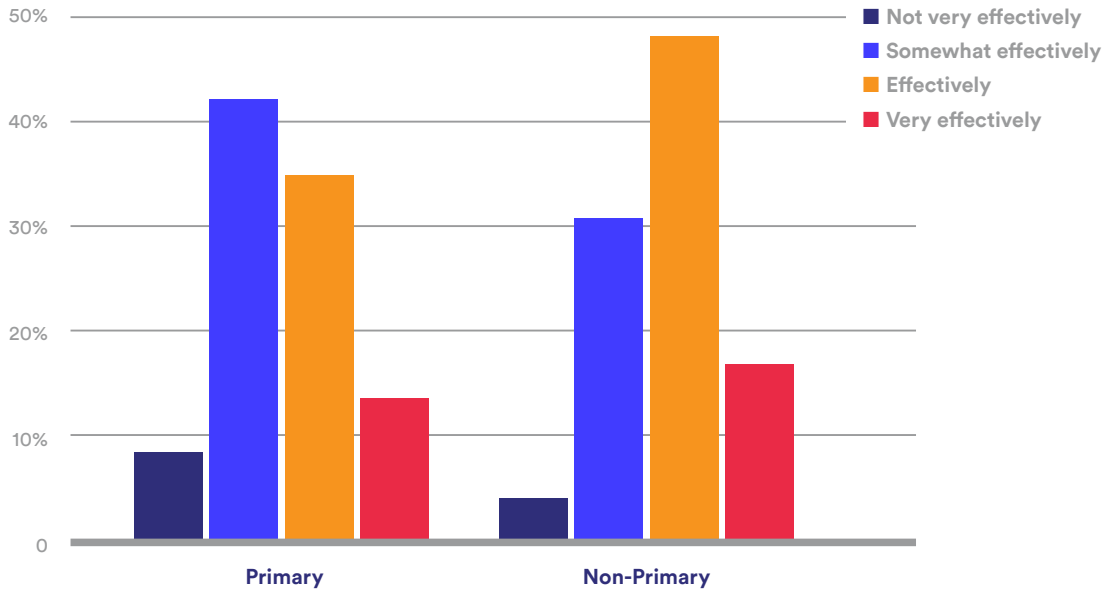
One possible contributing factor to this concern is that 38% of teachers stated that they were unable to effectively communicate with students. This suggests that teachers may need support to leverage the features of educational technologies in order to maintain communication with students and foster teacher-to-student and peer-to-peer interaction through discussion boards, chats, emails, webinar recordings and live video conferences.

While relying upon digital pedagogies to teach is a new and unexplored phenomenon on a wide scale, it is possible for online platforms to facilitate communication; maximising these functionalities is crucial when classmates and teachers unable to interact with students in person (Cui and Zheng, 2018; QM and VLLA, 2019; West, 2012).

There were no significant differences in the distribution of views on communicating online with students between countries and regions in Australia, technology groupings, or years of experience. However, primary level teachers were significantly more likely to state that they not able to effectively communicate online with students (χ^2 (3, N=3061)=56.7, p<.001). As shown in Figure 6, the most frequent response for primary educators was "somewhat effectively" (42%); in contrast, the most frequent response for teachers of older students was "effectively" (48%).

Pivot

Figure 6. Efficacy of Teacher-Student Communication: Primary versus Non-primary



Note. Primary (n=457), Non-primary (n=2604)

This lack of confidence in communication with primary students is an area for deeper study as younger students' ability to communicate through technology is limited by family supervision. As primary teachers are also more worried about the available support from parents/guardians, younger students should be considered a high-needs population in terms of interventions.

In general, the confidence in communication should be considered seriously. In times of a rapid shift and adaptation of teaching practices, a lack of adequate communication avenues may lead to major disruptions in the sharing of best practices, identification of student and family needs and collaboration. As one respondent noted, a "high degree of flexibility and team collaboration is needed so that a whole school approach has been achieved - common language, common expectations and frequent communication to families." Effective communication channels are necessary for effective distance teaching.

School leaders were most concerned about meeting the needs of all students.

School leaders indicated that meeting the needs of all students was their highest concern. Notably, Australian school leaders were more worried about managing the expectations of parents and guardians than were their counterparts from New Zealand. This may reflect the higher proportion of independent schools in Australia's educational system. Due to small sample size, further research is necessary to identify if this concern was of greater importance to Independent School Principals in Australia, though previous research has documented how independent school leaders face strong pressures from tuition-paying families (Bedo, 2018; Freeman, O'Malley, and Eveleigh, 2014, p. 43).

Pivot

Table 5. Top Concerns for School Leaders

What are you most concerned about as a school leader? (choose up to 3)	Australia	New Zealand
Meeting the needs of all students	81%	95%
Being able to manage parent/guardian expectations	51%	29%
Being able to assess the effectiveness of instruction	43%	52%
Providing adequate pedagogical resources/tools to my teachers	30%	31%
Being able to effectively manage my staff	27%	24%
Choosing the right instructional supports	27%	12%
Providing adequate professional learning to my teachers	16%	14%

Note. Australia (n=37), New Zealand (n=42). Principals and Vice-Principals

Educators were concerned about some students' limited access to technology and its equity implications.

> "I have some students that cannot afford the internet or a device - so I worry about their learning as they are now behind the rest of the class."

Shifting to distance learning requires ready access to devices and reliable internet access. As shown in Table 5, educators were concerned about students' access to technological devices and a reliable internet connection; 37% of respondents in Australia and 43% of respondents in New Zealand chose "access to technology/internet" as one of their top three concerns about the transition to distance teaching and learning. This is not surprising as approximately 15% of Australian households and 20% of families in Zealand do not have access to the internet (Australian Bureau of Statistics, 2018; InternetNZ, 2017). Open ended responses indicate that educators also were concerned that multiple children and even parents would have to share one device, limiting the amount of time that students could spend in the digital learning environment or reaching out for extra assistance. Reporting indicates that this is also a concern for parents, who may only have one smartphone or tablet to share among the entire family (Duffy, 2020).

Gaps with broadband infrastructure in Australia and New Zealand disproportionately affect rural areas and low-income communities (Duffy, 2020). This uneven distribution of access has clear equity implications for student learning. The qualitative data clearly indicated that educators in the ANZ region were concerned about equity of access to technology and the internet. These concerns were focused on two major demographics: low-income families and families in rural areas. Beyond access and cost, data allowances and connection speed were also obstacles to distance learning online. One teacher lamented: "Students do not have access to most online learning due to location or economic reasons. It's hard to teach when we only reach 40% to 60% of our class."

Teachers were also concerned with their own access to technology with data limits, the cost of internet access and the speed of their networks. One respondent provided a tongue-in-cheek suggestion to "Bring back pigeons for messaging, sometimes faster than the internet." When considering supporting distance teaching in the future, it will be important to take into account infrastructure needs.

Pivot

Equity concerns related to distance learning went beyond issues of access to technology.

> "Distance learning reinforces existing social inequality"

Educators' concerns about distance learning's effects on educational inequality reached beyond concerns about access to technology in the home. Respondents were particularly concerned about rural, low-income and indigenous students. Educators have cause for concern, as research indicates that distance learning may exacerbate existing inequality and fractured relationships between the government and already marginalised groups (Doyle, 2020; Markham, Smith and Morphy, 2020). As one respondent explained: "We have been ignored over the years … If we were not a Maori community, our children [would] not be disadvantaged." Several educators stated that they were concerned about the disruption to their relationships with students, which they viewed as vital to helping marginalised students stay invested and engaged in school.

Respondents were especially concerned about parents' role in distance learning; specifically, educators considered whether parents had resource, educational, or language barriers that limited their participation. To support learning at home parents or guardians need the time and resources to not only help their student, but also must master the schools' preferred digital learning platforms. As one educator explained: "Many parents have multiple students in the school and struggle to support their kids in online learning or don't have the resources to do so." Many respondents also pointed out the problems they had communicating with parents, particularly parents that did not speak English as a first language.

Respondents also expressed particular concerns about using digital pedagogies with students with disabilities or students learning English as a new language. Multiple educators' responses pointed out that face-to-face interactions were essential to monitoring student understanding, providing immediate assistance or feedback, and keeping students engaged. One teacher voiced a recurring concern: "Distance teaching seems near impossible for special education. My students need constant monitoring and support as many lack independence, and many have disengaged with learning after years of not achieving for various reasons." Similar concerns arose for teaching English as a new language. As one respondent said, "There are always aspects of language-learning that cannot be replaced by machines. Interactive and instant feedback and monitoring during class learning and teaching are missing online." Teachers of younger students seemed to face particular challenges in adapting to digital pedagogy as well, as young children have limited executive functioning, technology, and language skills. There is a clear need for further research into solutions for teachers working with these students, as well as policies and practices that may best help mitigate potential learning loss.

Recommendations

- **Maslow's over Bloom's:** As we have found in this report, teachers are concerned for their students' emotional well-being. We suggest schools and governing bodies explicitly respond to these disruptions by making social emotional well-being for teachers, students and families a key area of focus in distance learning and the transition back to the classroom. Strategies could include increased access to mental health services, a focus on teaching soft skills over hard skills, a lessening of learning targets/expectations and celebration and recognition of the hard work being undertaken by teachers.

- **Interventions for high-needs communities:** Based on both our study and existing research, students of low socioeconomic status, students with disabilities, indigenous populations and English language learners are being impacted disproportionately by the shift to distance learning. This can be attributed to a lack of access to resources (e.g., technology, internet access, etc.), as well as uncertainty about practical digital support for these students. In the context of distance teaching, another group should also be considered high-needs: primary-aged students (as digital learning may require a high level of self-direction). We suggest that interventions for these groups be implemented where appropriate with a focus on designing solutions that create more equitable access to learning when it shifts to the home. Also further research into what effective distance learning looks like for primary-aged students is necessary.

- **Increase opportunities for relationship-building:** The results of the survey indicate that current relationships between students and teachers are at risk due to the shift to distance teaching. There is also evidence from the research base that shows that relationship building is more difficult in distance learning contexts. We suggest that schools increase their use of virtual strategies for reducing isolation and building relationships during distance learning, such as socially-focused group chats, synchronous opportunities for one-on-one interactions, creating social opportunities with larger groups, etc.

- **Identify strategies for additional instructional support for students:** 80% of teachers believe that students will need extra additional support when they get back to the physical classroom. This is an opportunity for systems and schools to identify strategies for providing this extra support and to prepare in advance for their implementation. Strategies could include tutors, an increase in the number of teacher aides in classrooms, increasing instructional time for students, etc.

Use of educational technologies to support distance teaching

With more than 90% of respondents indicating that their schools have or were preparing to move to distance learning, these results represent a snapshot of which technologies educators in Australia and New Zealand were using to support student learning at home in April 2020.

Educational technologies used by respondents fell into four broad categories.

We asked participants to identify which technologies their schools were using to support distance learning. They identified a wide array of tools with over 140 platforms represented. As there is no consistent naming and categorisation structure in the education technology sector, we grouped the platforms into 4 core areas of function based on a literature review and a categorisation of their functionalities (student/course management, content management, asynchronous communication, synchronous communication and curriculum banks). These four groups of technologies were:

- Student/Course Management Systems (CMS/SMS)
  Primarily used for administrative functions and content management by schools. These tools include student management functions, such as attendance records and contact lists, which support online coordination between students, teachers and parents. Course management functions include organising lesson materials, setting assignments, digital grading, and tools for providing feedback on student work. Examples include Compass, SEQTA, and Schoolbox.
- Synchronous Collaboration Tools (SCT)
  Support live online classroom instruction where students and teachers can collaborate to share their screens, audio, video, and text, in real time. The majority of these tools were not created for educational purposes. Some present safety and privacy concerns of which educators should be aware. Examples include WebEx, Zoom, and Skype.

- Virtual Learning Environments (without Integrated Learning Content) (VLE)
  Online platforms for content delivery that can be used to manage student learning and communication. These platforms are content-agnostic and do not include integrated banks of learning content. Some, such as Google Classroom, were explicitly designed for the F-12 education al sector and include some student/course management features. Others, such as Microsoft Teams, do not. Additional examples include Blackboard Learn, Canvas, and Moodle.*
- Virtual Learning Environments with Integrated Learning Content (VLEC)
  VLEC includes integrated banks of learning content (such as activities, videos, and assessments) that teachers can curate and organise to suit their school's curriculum. Some plat forms, such as Stile Science, are specific to one content domain. Others, such as Education Perfect (EP) cover the full range of the school curriculum. Additional examples include Seesaw and Connect Education.

** We have avoided the use of the term Learning Management System as platforms that were previously branded as learning management systems have moved away from the terminology as they have integrated synchronous technologies into their functionalities.*

Table 6. Features by Technology Grouping

	SMS	SCT	VLE	VLEC
Student Management	✓		✓-	✓
Content Management	✓		✓	✓
Asynchronous Communication	✓		✓	✓
Synchronous Communication		✓	✓	✓-
Curriculum Banks				✓

Note. ✓- indicates slight variation within a category.

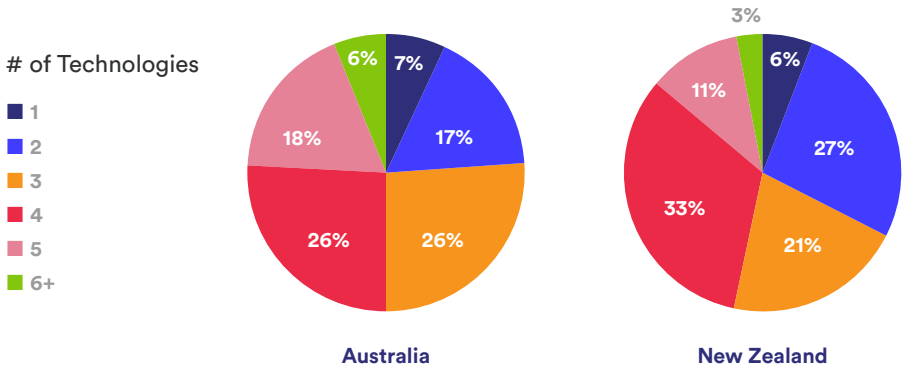
Educators were using combinations of multiple educational technologies that suited their needs.

> "We use a combination and not just one platform … There is no magic platform."

The majority of educators reported using two to five educational technologies with only 7% of respondents reporting using only one educational technology (Table 6) for their distance teaching. In addition to the previously listed tools, around two-thirds of participants also identified at least one other tool that was used aside from the primary tool, with close to 100 tools and apps identified including Simon, Edmodo, Firefly, Class Dojo, Loom, Day Map, and Hapara (New Zealand).

Pivot

Figure 7. Educators' Use of Multiple Technologies



The qualitative data from the open-response questions offered some insight into why this may have been the case. Respondents indicated that due to different functionalities, there was no single platform that met their needs as an instructor and the needs of their students as learners. To mitigate this, schools were using platforms together, curating a preferred mix of features and functionalities. For example, one educator explained the logic behind their particular cocktail of technologies: "Our current [SMS] is not as effective for setting and submitting work, so another [VLE] is being used. However, this new system does not have the administrative features necessary for a school."

In some cases, schools found synergy between the tools by using one platform as a central organisational hub. As one respondent described: "[SMS/CMS] is our learning platform. That allows us to utlise a range of other learning tools, i.e. [VLEC], online videos, slides. It just enables you to put your lesson together all in one place." Other educators found it more challenging to navigate multiple systems.

Australian schools use a wider variety of primary technologies than New Zealand schools.

Based on the findings, the most commonly used technologies were Education Perfect, Microsoft Teams, Google Classroom and Zoom. The most common primary technologies in Australia are Google Classroom (25%), Microsoft Teams (18%), Compass (8%), Zoom (8%), and Education Perfect (7%). The most common primary technologies in New Zealand are Google Classroom (52%), Microsoft Teams (17%) and Education Perfect (15%). Australia has a much larger spread of primary technologies than New Zealand. Australia's wide-ranging selection and adoption of primary technologies may be attributed to jurisdictional purchases or in-house platform commitments.

Pivot

Table 7. Technologies in Schools

	Australia		New Zealand	
Technology Type	**Primary Technology**	**Part of Tech Suite**	**Primary Technology**	**Part of Tech Suite**
SMS	15%	24%	1%	16%
SCT	13%	57%	5%	55%
VLE	59%	82%	77%	85%
VLEC	14%	77%	18%	81%

Note. Australia (n=1855), New Zealand (n=949)

Table 7 shows that whilst most teachers had nominated a virtual learning environment as their primary technology, more than half of teachers were using synchronous collaboration tools, and 77% were using a Virtual Learning Environment with Content as part of their technology suite. In Australia 36% and in New Zealand 42% were using at least one SCT, VLE, and VLEC technology together.

We performed a market basket analysis to find which combinations of tools were used together most often. The most common combination was Google Classroom and Education Perfect, with 42% of technology suites across both countries containing at least these two tools. The combinations emerging from the market basket analysis indicated that schools most often used a technology suite that included a virtual learning environment and a synchronous collaboration tool, with many integrating a content management tool and secondary learning environment as well.

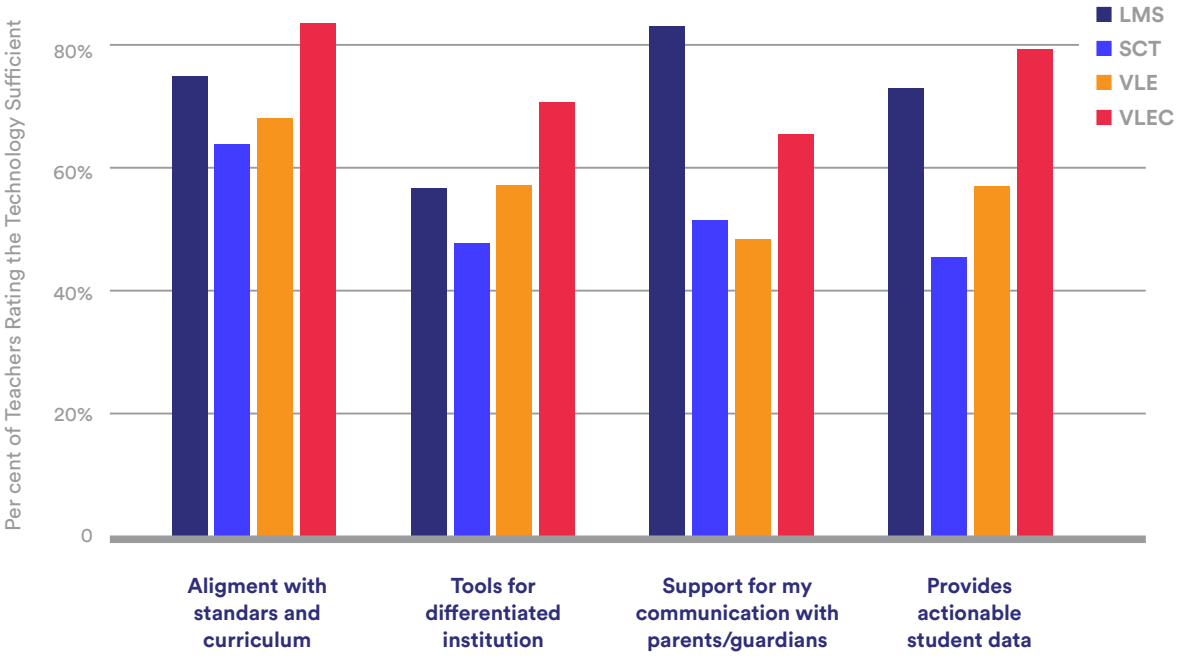
Educators found Virtual Learning Environments with Content to be most useful for most teaching tasks.

> “To be successful, [distance teaching] has to engage students through building and maintaining relationships. [Video conferencing] enables this to occur.”

Participants were asked to rate whether their primary technology was sufficient across a range of factors. The distribution of opinions on the technology were very similar between New Zealand and Australia. However, Table 7 shows that there were significant differences between the broad categories of platforms, with Virtual Learning Environments with Content outperforming the other categories in alignment with standards (83% sufficient vs 67-74% for the other groups), tools for differentiated instruction (71% vs 48-57%), and provision of actionable student data (80% vs 45-72%). SMS/CMS were most highly rated in support for communication with parents/guardian and ranked second in all other categories (83% sufficient vs 48-65% for the other groups).

Pivot

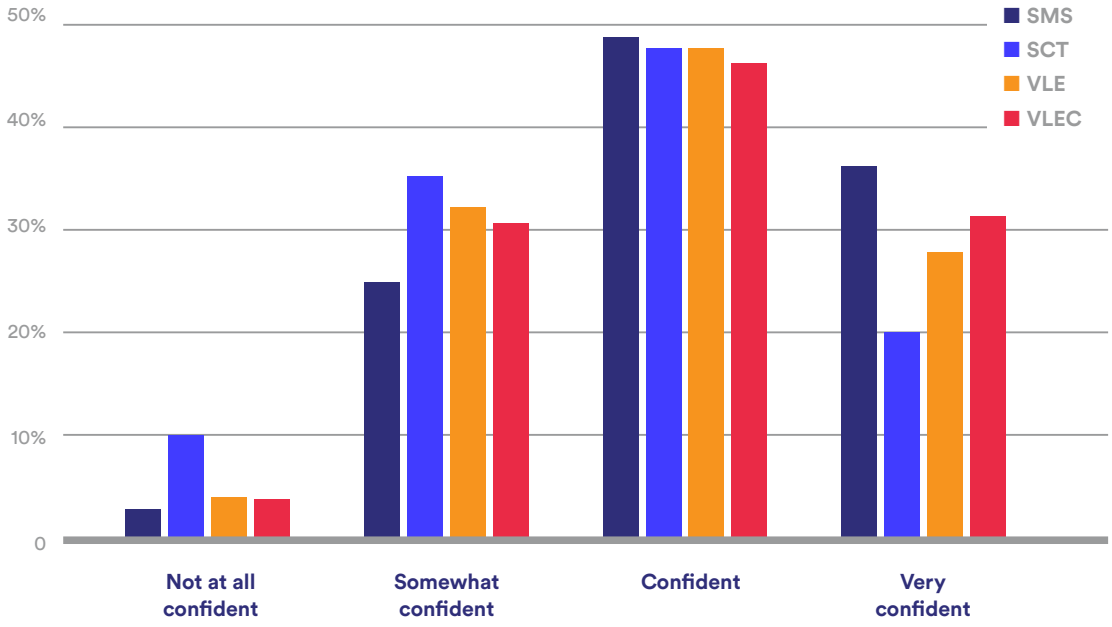
Figure 8. Per cent Rated Sufficient by Task



Note. SMS (n=249), SCT (n=252), VLE (n=1647), VLEC (n=408). Bars indicate per cent of respondents rating a tool in each technology grouping as sufficient for four educator tasks. The remainder of the responses were either "insufficient" or "neutral."

While SCTs were rated lower in terms of functionality, qualitative feedback clearly showed that participants still highly valued these tools to support student engagement and the relationships between teachers and students. While they may not be appropriate as a primary tool, the functionality is very important for distance teaching. We discuss this in further detail later in the paper.

Figure 9. Confidence Using Each Type of Educational Technology



Note. SMS (n=236), SCT (n=256), VLE (n=1731), VLEC (n=390)

When asked how confident they were teaching with the primary technology, most participants rated themselves as confident or very confident. There was a significant difference in the distribution of confidence levels between the technologies ($\chi^2(9, N=2613)=29.5, p<.001$), with those whose primary technology was collaboration based (for example Zoom or Skype) being twice as likely to rate themselves not at all confident, which may be due to these technologies being general collaborative tools and not created to support teaching and learning. There were no significant differences between Australia and New Zealand.

Recommendations

- **A multi-platform approach:** Schools are purchasing and using multiple platforms to achieve the right mix of features to support distance teaching. This suggests that a coalition approach in the short term to support distance learning is necessary (e.g., recommendations on using platforms together, automations to support integrations across platforms, etc.).

- **Make platforms accessible:** Reducing subscription costs or providing open access may help mitigate learning loss for students in under-resourced schools.

- **Integrate ready-to-implement curriculum:** Platforms that include ready-to-implement curricular content rate highest across the surveyed features and in confidence. Participants using a VLEC may also experience less impact on their preparation time. This is at odds with the majority of schools using a content-agnostic tool as their primary technology. When determining platform improvements, we suggest integrating high quality learning content to decrease the burden of searching for content on educators.

- **Identify what good distance learning looks like:** The shift to distance learning provides a rich opportunity to identify what good distance teaching and learning looks like as there has been an enormous rise in the number of students in distance learning contexts. Teachers are split on the question of whether online learning has the same efficacy as the physical classroom, and there is little data on what makes good distance learning. We suggest investing in significant research in this space, including a focus on innovations that are occurring in schools all across the region.

Teacher well-being

In this section we review the impact of the shift to distance teaching on teacher well-being. Teachers reported significant increases in demands on their time under remote learning. Across both countries, 70% of teachers said planning time had increased either “slightly” or “significantly.” Teachers also report that working remotely has provided a wide array of challenges, which are felt more keenly by teachers that are also parents/caregivers.

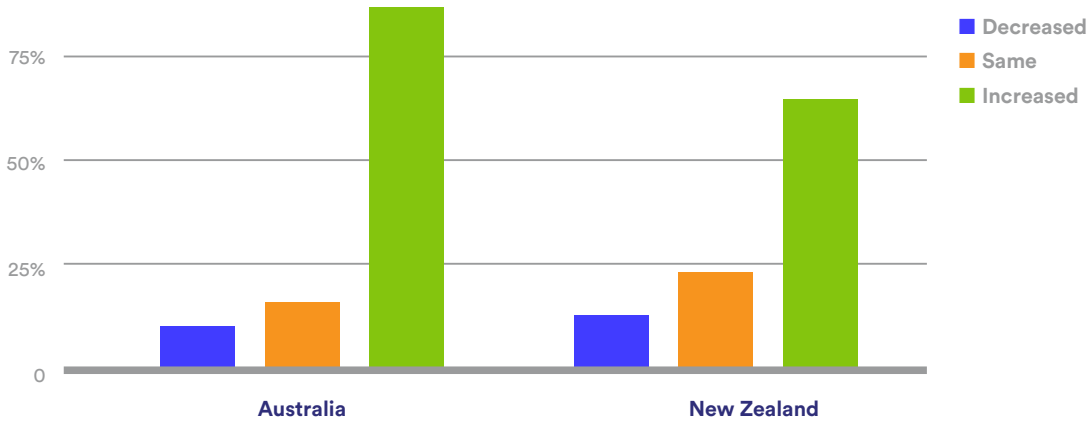
Demands on teachers’ time have increased.

> “The transition to online learning has increased my marking load exponentially and it has been exhausting, trying to stay on top of preparation whilst also managing the admin of providing students with feedback.”

Survey results clearly indicate that demands on teachers’ time have increased. This is an important finding given that teachers are already vulnerable to burnout due to heavy workloads (Skaalvik & Skaalvik, 2010). Across both countries, 70% of teachers said that their planning time had increased,

either “slightly” or “significantly.” Over half of the Australian respondents and 28% of respondents from New Zealand indicated that their planning time had “significantly” increased. Many responses to open-ended questions referred to an “exponential” increase in workload. One teacher voiced a common sentiment across responses: “We are exhausted.”

Figure 10. Changes in Teacher Planning Time



Note. Australia (n=1976), New Zealand (n=1005).

However, the increased demands on teachers’ time varied between countries. As shown in Figure 10, teachers in New Zealand were less likely to report that their planning time had increased. The association between country and teachers’ reported change in planning time was statistically significant($\chi^2(2, N=2981)=134.9, p<.001$). There are many possible explanations for this difference. For one, in New Zealand, the majority of schools use a technology suite consisting of one VLE (Google Classroom or Microsoft Teams) and a VLEC (96% of NZ schools have access to Education Perfect). It is possible that access to integrated learning content eased teachers’ planning burden.

Another possible explanation could be many Australian states’ multi-faceted approach to school access. While all New Zealand students transitioned to learning remotely at once, many Australian schools remained open to some students as of April 2020, although this varied by state and school type. For example, Queensland state schools were only open to the children of essential workers, while in ACT parents could send their children to school if they could not keep them home for a variety of reasons. Other states encouraged some or all students to attend Term 2 of school, with the Northern Territory requiring students to physically attend school unless parents contacted their school with alternate arrangements (Karp, 2020). In the case of independent schools, Australia’s Federal Government ordered them to stay open for Term 2 for children of essential workers. Additionally, many states and schools required that physical materials be made available for students without internet access. The Australian government required independent schools to do this, especially in regions lacking internet connectivity such as remote NSW (Allam, 2020; Karm and McGownwan, 2020).

Many respondents described simultaneously teaching students in person and remotely. One teacher expressed a common sentiment: “It is extremely challenging to have to teach both face-to-face and online concurrently.” Responses also pointed to another layer of complexity, adapting lessons and preparing physical materials for students without the internet. As one teacher stated: “We are required to teach face-to-face for children of essential workers, online, and lessons for students who

do not have computer or internet access -that is three different modes simultaneously." Indeed, open-ended responses indicated that many teachers struggled to prepare multiple sets of materials.

Another factor in differing time demands across countries could be the time that teachers have been teaching remotely. New Zealand began full lockdown in response to COVID-19 earlier than Australia did, which means that teachers there have had more time to overcome the "steep learning curve" that so many respondents mentioned in the qualitative data. Some teachers indicated that a significant part of their increased planning time was spent becoming familiar with the features of the required technologies and platforms. Another teacher noted that distance learning required new forms of feedback and communication, stating: "It has led to a substantial increase in time spent planning and implementing distance learning—digital marking, increased emails from parents, interactive/immediate teaching … It is not sustainable in its current form."

A few teachers stated that they expected the pace of work to slow down as they reached the plateau of their learning curve. As one teacher explained: "Once I have set everything up the workload will decrease in preparing and presenting engaging and varied learning." Conversely, some respondents thought that they would continue to require additional planning time as they would need to continue adapting lesson materials to an online platform. One respondent voiced a common theme: "I'm finding I need to make resources again from scratch and this is taking a lot of my time." Other teachers anticipated continuing challenges due to the format of communications and feedback required by remote learning platforms. Many claimed that providing feedback to student work was far more laborious online. A teacher expected that they would need to allocate more time to checking for student understanding, noting: "Normally I collect student work books and give them feedback in the lesson—it takes time to individually download and type feedback." Other teachers noted that instead of being able to address student questions in a classroom setting, they will instead need to read and reply to many emails.

Some of these views also appeared in our quantitative data. We asked participants to rate how confident they were with the ease of setting up and updating lesson material using their primary technology. Whilst 62% of participants overall were confident or very confident that their primary technology, those whose primary technology was a synchronous collaboration tool were more than twice as likely to state that they were not confident compared to the other types of technology (χ^2 (9, N=2730)=94.1, p<.001).

Table 8. Ease of Setting and Updating of Lesson Material

	SMS/CMS	SCT	VLE	VLEC	Overall
Not confident	8%	22%	9%	5%	10%
Somewhat confident	24%	33%	29%	26%	28%
Confident	48%	36%	43%	43%	42%
Very confident	21%	9%	20%	27%	20%

Note. SMS/CMS (n=273), SCT (n=253), VLE (n=1787), VLEC (n=417)

χ^2 2(9, N=2730)=94.1, p<.001)

Concerns around the effectiveness of synchronous collaboration tools was also highlighted when we asked participants to rate their confidence in their primary tool providing effective assessment of online learning. Whilst the SCT tools rated lower than the other groups and virtual learning environments more likely to state very confident (χ^2 (9, N=2693)=108.9, p<.001), of most concern was the fact that only 8% of educators were very confident that their primary technology provide the effective assessment of learning online.

Pivot

Table 9. Effective Assessment of Learning Online

	SMS/CMS	SCT	VLE	VLEC	Overall
Not confident	22%	35%	27%	17%	26%
Somewhat confident	33%	38%	39%	29%	36%
Confident	38%	21%	29%	37%	30%
Very confident	8%	6%	7%	17%	8%

Note. SMS/CMS (n=266), SCT (n=256), VLE (n=1757), VLEC (n=414)

Teachers and school leaders reported finding it challenging to work remotely.

> "The emotional / mental toll and fatigue for myself and colleagues is the highest level we have seen."

As shown in Table 8, when we asked teachers about which impacts of distance learning on their teaching were most concerning, 42% of Australian respondents (n=729) and 37% of respondents from New Zealand (n=324) selected "difficulties balancing my home-life with the needs of teaching online" as one of their top three concerns. In the open-ended responses, teachers with children seemed particularly concerned about navigating their teaching and parenting responsibilities. One teacher clearly voiced a common concern: "There are NO accommodations being made for the fact that we are teaching up to 30 kids while trying to manage the learning (and care) needs of our own children in the background, in our HOMES." Other respondents indicated that parenting and managing their own children's online learning would limit the amount of time and energy they would be able to spend adapting to distance teaching. As one respondent explained: "I need to plan more. I do not actually have the time to plan more, though, as I am caring for my children at home. This is the major pressure for me."

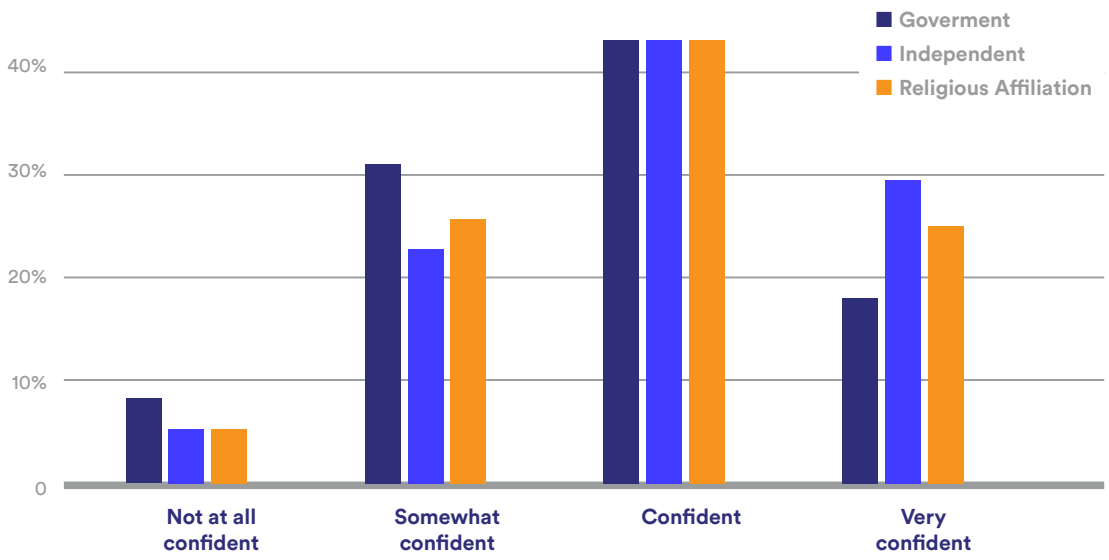
Open-ended responses further indicated that social isolation was not only a concern for students, but for teachers as well. As one teacher explained: "Teaching online can be very isolating, especially for teachers who live on their own." Aside from physical isolation, teachers indicated the loss of their teaching community was particularly difficult. One teacher stated: "Not only do we teachers miss the social connection with our students, we miss being with our colleagues and friends. Teaching is a very social profession, teaching is successful when connection is strong." Indeed, some teachers indicated that adapting to new technologies and platforms was more difficult when they could not collaborate with their peers. One teacher explained: "My school is supportive. My teaching cohort is amazing, but we are all trying to do our bit with our heads down and don't have a lot of energy to give to each other's queries."

Even though participants indicated working remotely was challenging, many indicated that they believed their school had the ability to support them. Approximately 64% of teachers (n=1772) and 72% of school leaders (n=390) included in the sample indicated they felt either "confident" or "very confident" in their school's ability to support them working remotely. An additional analysis indicated that primary school teachers were less confident than their peers, with 15% saying they were "not at all confident" that their school could support them. There was no significant difference between Australia and New Zealand in terms of the levels of confidence in being supported working remotely.

However, as shown in Figure 11 below, educator confidence did vary according to school type. The percentage of educators who indicated they were "confident" in their school support, approximately 43%, was fairly consistent across school type. Yet only 18% of participants from government schools

rated themselves "very confident," a much lower percentage of participants than in independent or religiously affiliated schools (χ^2 (2, N=3191)=51.2, p<.001). Additional research is needed to understand why these apparent differing levels of confidence in government and non-government schools.

Figure 11. Educator Confidence in Support for Remote Work by School Type



Note. Government (n=1,862), Independent (n=641), Religious Affiliation (n=687)

Recommendations

- **Lower the learning curve:** Teachers are experiencing a significant increase in their planning and preparation time. A significant part of their increased planning time was spent becoming familiar with the features of the required technologies and platforms. As schools are using between 2-5 technologies, there are opportunities to streamline distance teaching by creating a multi-platform approach. Providing teachers additional planning time (e.g., non-student school days) and with additional training in platform use may also help to decrease the burden of additional preparation time.

- **Use strategies for mimicking a "whole-class" experience:** A large amount of teachers' administrative duties by teachers in the physical classroom happen at the whole class level (e.g., attendance, formative and summative assessments, the answering of questions, etc). Only 8% of educators were very confident that their primary technology provided effective assessment of learning online. These duties become significantly more individualised in a distance teaching environment, which increases teaching time significantly. We recommend teachers be allowed more time for administrative aspects that are a result of distance teaching. We also recommend that education technology providers work to identify how they can ease some of this administrative burden for teachers through their platforms.

Pivot

- **Limit teacher expectations on teaching in both a distance and an in-person context:** The burden on teachers to be able to support students learning during this time has led to a significant increase in the expectations of teachers and their planning and preparation time. This is exacerbated for teachers who are tasked to support both distance and in-classroom learning. We recommend limiting whenever possible the instructional delivery to one group or the other. While this will have greater impacts in small schools with fewer teachers, we suggest that teachers will benefit from such a change.

What educators need

As described, the data showed that rapidly transitioning to fully remote instruction presented a host of challenges for educators across Australia and New Zealand. Many of the educators in our sample worried about maintaining communication with their students, preventing learning loss, and adapting their pedagogy for the digital classroom. In addition to identifying challenges, our survey sought to understand what supports educators needed to ease their transition to distance teaching and increase their efficacy as online instructors. We present our findings below.

Teachers identified a high quality technology platform as the most critical support for high-quality distance teaching.

As shown in Table 10, teachers indicated that a high quality technology platform was the most critical need for high quality distance instruction. Resources for distance teaching pedagogy were the second highest concern. Teachers indicated that peer collaboration, instructional coaching on distance teaching methods and online curriculum and pedagogical supports were also essential. When designing interventions, solutions and strategies to support distance learning it will be important to take into account a wide variety of strategies.

Table 10. Most Critical Supports for High-quality Distance Instruction

	Australia	New Zealand
A high technology platform	72%	63%
Resources for distance teaching pedagogy	66%	61%
Peer collaboration	58%	48%
Instructional coaching on distance teaching methods	55%	54%
Online curriculum and pedagogical supports	54%	50%
Formal professional learning courses on distance teaching	40%	33%
Professional learning community (PLC) support	37%	35%

Note. Australia (n=1992), New Zealand (n=1014). Graduate, classroom, and leading teachers

Student feedback on teaching and learning is most important to educators.

> "Students will give you the best feedback you need (most of the time!!). We need to listen to what they say and how they learn best."

Pivot

Given that this is a time of massive upheaval and rapid change, it is critical to understand which types of feedback educators feel are most valuable now. Research indicates that feedback is particularly important in order to evaluate changes in practice (Tanis, 2020; West, 2012), such as those required for an abrupt move to distance learning. Toward the end, we asked school leaders, "What kind of feedback/evidence do you think is most critical to to support distance teaching and learning in your school?" Leaders had the opportunity to select multiple responses. As shown in Table 11 below, school leaders in both Australia and New Zealand that feedback from students was most important. Leaders valued student feedback not only around their perceptions of teaching and learning online, but also with respect to their personal well-being. This aligns with the literature that indicates that not only is student feedback a powerful indicator of teacher effectiveness (MET Project, 2012; Cantrell & Kane, 2013), but also a useful motivator and guide for improving teaching practice (Hattie, 2008; Gaertner, 2014).

Table 11. Feedback Priorities for School Leaders

	Australia	New Zealand
Student feedback on teaching and learning	90%	92%
Student feedback on their well-being	83%	72%
Teacher feedback on their self-efficacy teaching online	66%	64%
Teacher feedback on their well-being	58%	54%
Parent feedback	55%	55%
Student achievement data	53%	50%
Student platform usage	53%	49%

Note. Australia (n = 317), New Zealand (n = 154). Leaders included respondents who identified themselves as year-level coordinators, domain leaders, pedagogical leaders, assistant principals, or principals.

We also asked teachers, "What type of feedback do you think is most critical for your distance teaching practice?" Respondents were able to select multiple responses in order to indicate their priorities for feedback. As shown in Table 12 below, teachers in both geographies found that student engagement and motivation data was of the highest priority in terms of feedback. For Australian teachers, formative assessment data was the second highest rated (69%). New Zealand teachers indicated that student feedback on their online teaching approach was the second highest priority (66%).

Table 12. Feedback Priorities for Teachers

	Australia	New Zealand
Student engagement/motivation data	78.9%	82.2%
Formative assessment data	68.6%	52.8%
Student feedback on your online teaching approach	63.6%	66.5%
Summative assessments on learning	44.6%	36.9%
Student well-being data	43.4%	40.3%
Peer observations	13.6%	12.9%
Formal observations by your school leader(s)	7.7%	5.8%

Note. Australia (n=1585), New Zealand (n=815). Graduate, classroom, and leading teachers

Pivot

The qualitative data also reflects teachers' desire for student feedback. A common theme was the difficulty of gauging students' reactions in real time. One teacher voiced a common sentiment: "One of my challenges has been to build in a way to monitor students' engagement with the material or content that I am expecting them to access." Another teacher stated they are concerned that students will: "Just click their way through a lesson without actually engaging in it." Although many teachers stated that they wanted or needed to include video calls or conferencing with their students, they did not believe those tools would diminish the difficulty of determining student reactions and engagement with teaching.

Teachers also expressed concern that without direct engagement, students would be disengaged with online learning. As one teacher explained, once the basics of technology, support, and space are established, "It's all about Motivation! Motivation comes from enjoyment of learning." This would make student voices a particularly important part of digital pedagogy. A respondent stated that they wanted: "Student engagement with activities that they enjoy doing." Surveys could act as a potential tool for engagement, allowing students to voice what strategies or lesson elements work (or not) for them. It could also provide an avenue for student investment, by providing them a voice in future class activities or routines. As one teacher put it, distance learning needs to move forward: "embracing student voice and student choice."

Recommendations

- **Schools need high-quality platforms:** Teachers believe that a high-quality platform is most critical to the success of their online teaching. As our analysis has shown, there is an opportunity for researchers to investigate and provide greater clarity on what constitutes a high-quality platform and which platforms work best together to maximise the efficacy of online teaching.

- **Ask teachers what they need:** In this survey, we began by asking teachers what they most needed to be successful in the shift to distance teaching. We believe that systems and leaders should take our research back to their schools and use it as a conversation starter in efforts to understand what their teachers need the most to support their teaching in this new context. While it is clear from this survey that there are common themes and needs, the qualitative data elucidates that school context makes a difference in what works and does not.

- **Activate student voice by asking students for their feedback:** Over 90% of school leaders think teachers need feedback on their teaching and learning from students and over 80% of teachers want data on student engagement and motivation. This is an opportunity for schools to actively seek out actionable feedback for teachers using student perception surveys or similar tools. Feedback on student experience is a key component of improving distance teaching and creating better solutions for the future.

Pivot

Conclusion

"This is an enormous experiment, executed at very short notice." Secondary Teacher, New Zealand

The COVID-19 pandemic has led to the greatest disruption to the educational system in our lifetimes. Our goal in undertaking this research was to provide a comprehensive look at what is happening in schools from those whose voices we do not often hear: teachers. With this paper we aim to bring together the wider community of systems, education providers and schools to support teachers and improve outcomes for students.

Upon analysis, we found that educators are managing in the face of monumental challenges as they "have been literally thrown in the deep end," as one teacher expressed it. Teachers have increased planning and preparation time, are implementing multiple strategies to meet the needs of their students and have shifted their learning online with the use of multiple platforms and multiple technologies. It is clear that teachers are "trying [their] best in totally unprecedented times." In the qualitative responses collected in the survey, we were reminded repeatedly that teachers were committed to doing their best and, as one stated, "have taken this in their stride incredibly, in such uncertain times."

Challenges with distance and online learning have been well-documented in the past, and our research has shown how this crisis has further exacerbated these challenges. We have identified potential levers for change, including:

- A focus on platform quality, cohesive strategies and supports for the implementation of multiple technologies
- Increasing opportunities for social connection and communication
- Interventions for high-needs communities
- A focus on supporting social-emotional health for both students and teachers.

This unprecedented time is an opportunity for the greater education community to come together to collaborate on further research, strategies and solutions to support distance teaching both in its current state and in its future state (e.g., as part of a blended approach as schools stagger reopening physical classrooms).

Our study also identified that, whatever the 'new normal' is for schools over the coming months, students and teachers will require additional support to recover from the sudden shift to distance learning. We welcome consideration of the recommendations of this report as a means for recovery and focusing on the future, beyond the current pandemic.

Pivot

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For further inquiries about

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For more of our research check out

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Appendix 2:

Excerpt from the upcoming publication by Pivot, The Disproportionate Impact of COVID-19 on Low Income Schools in Australia

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EXCERPT FROM UPCOMING PUBLICATION

THE DISPROPORTIONATE IMPACT OF COVID-19 ON LOW INCOME SCHOOLS IN AUSTRALIA.

MAY 2020

Dr. Clare Buckley-Flack, Dr. Lyndon Walker,
Amanda Bickerstaff and Cara Margetts

The following is an extract from an upcoming research publication from Pivot Professional Learning. This research focuses on how the socio-economic status of school communities (measured by ICSEA scores) in Australia was associated with educator perspectives on the impact of COVID-19 on teaching and learning. The analysis is based on survey data collected from April 9-14 April 2020 from over 2100 respondents in over 1100 schools in Australia.

About Pivot

Pivot Professional Learning (Pivot) is a leading educational company that provides insights about teaching practice for teachers, school leaders and the sector. From our headquarters in Melbourne, we provide practical and evidence-based support to schools and educators across Australia and New Zealand. Our support programs and systems aim to enhance teaching – primarily by harnessing the power of students' voices. Our work is supported by international research and data from over 65,000 Australian classrooms.

Our flagship Student Perception Survey on Teaching Effectiveness provides teachers and schools with reliable, timely and detailed feedback to guide responsive teaching. Pivot's reports are clear, incisive and easy to digest. Our research-based insights support continuous improvement in classrooms.

Over a number of years, Pivot has partnered with major educational organisations and agencies including:

- Australian Association of Mathematics Teachers (AAMT)
- Bastow Institute for Educational Research, Victoria
- Professional Learning Communities Division, Department of Education and Training, Victoria
- Centre for Education Statistics and Evaluation (CESE), NSW.

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Introduction

COVID-19 led to a mass, rapid shift in distance learning in Australia. More than 4 million students commenced learning at home for periods of time ranging from just a few weeks to well over two months. As a result, teaching and learning underwent major and unprecedented changes. In April 2020, Pivot and Education Perfect (EP) partnered to administer a survey to over 3500 educators across Australia and New Zealand. The survey aimed to gather actionable data that could foster insight into the impact of the transition to distance education on teaching and learning.

Pivot's analysis revealed that educators had strong concerns about the equity implications of school closures (Flack, Walker, Bickerstaff, Earle, & Margetts, 2020). Given these findings, Pivot embarked upon a secondary analysis in order to better understand the role of socio-economic factors in how teachers and students have experienced teaching and learning during the pandemic. Focusing on Australia, Pivot used national data to match Index of Community Socio-Educational Advantage (ICSEA) scores to the schools in its sample. In our exploration of the data, we sought to understand how educators' support needs varied with the average level of socio-educational advantage of their schools' students. Analysis of responses from over 2300 Australian educators, revealed clear areas of commonality and major areas of difference based on schools' socio-economic status.

Background Information

Created by the Australian Curriculum, Assessment and Reporting Authority (ACARA), ICSEA scores were designed to enable fair comparisons of National Assessment Program – Literacy and Numeracy (NAPLAN) test achievement (ACARA, 2020). This measure is used to assess equity by comparing differences in student performance among similar schools (Gannon & Sawyer, 2014). It is important to note that an ICSEA value is not a rating of the school institution (its staff or teaching programs) nor is it a score for the school's overall student performance in testing programs (Riddle, 2017).

ICSEA values are calculated on a scale that has a median of 1000. ICSEA values typically range from approximately 500 (representing schools in the least advantaged communities) to about 1300 (representing schools in the most advantaged communities). The 2020 calculation of ISCEA follows the formula ICSEA = SEA (direct) + Remoteness + Percent Indigenous. The Socio-Educational Advantage (SEA) component of the ISCEA score is derived from enrolment records, such as parental occupation and educational level.

While ICSEA scores are not ratings of an individual institution, there are well-researched relationships between ICSEA and teacher-level factors. Schools with low ICSEA scores have a disproportionately inexperienced teacher workforce and higher rates of teacher turnover and burnout (Gannon & Sawyer, 2014; Pierce & Molloy, 1990). With respect to student-level factors, lower ICSEA scores are associated with lower attendance and achievement on academic measures (Chesters, 2019; Ladwig & Luke, 2014).

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Methods

Pivot, an education insights company based in Melbourne, Australia, developed an online survey to ascertain educators' beliefs and responses to distance learning during the COVID-19 pandemic. Education Perfect (EP), an online learning platform, then distributed the survey to it's database of 60,000 contacts and through social media. All respondents were entered into a random drawing of one of five $500 Gift Pay Vouchers. The survey was open for five days, from 9-13 April 2020.

The online survey consisted of 46 items, including 44 multiple-choice and multi-select items and two open-ended items. Respondents answered between 26 and 34 multiple choice questions depending on their role within schools. All respondents answered one open response question. The survey first asked for background information about the respondents, including their position within schools, educational background, teaching experience, and access to technology at home. The survey also collected information about the respondents' schools, such as location, sector, and the schools' current participation in distance learning. The rest of the survey covered three broad domains: implementation of instructional technology; shifting to online learning; and, necessary support and feedback.

Sample

For this analysis, only respondents from Australia with identifiable school names were included. Each school was matched with its corresponding 2018 ICSEA score and placed into a quartile based on the range of scores in the sample.

Table 1. Distribution of sample respondents and their schools by sample ICSEA quartile

	Lower ICSEA	Upper ICSEA	# Teachers	# Schools
Q1	579	984	560 (25.8%)	330 (28.6%)
Q2	985	1035	529 (24.4%)	279 (24.2%)
Q3	1036	1092	539 (24.8%	277 (24.0%)
Q4	1093	1286	543 (25.0%)	269 (23.3%)

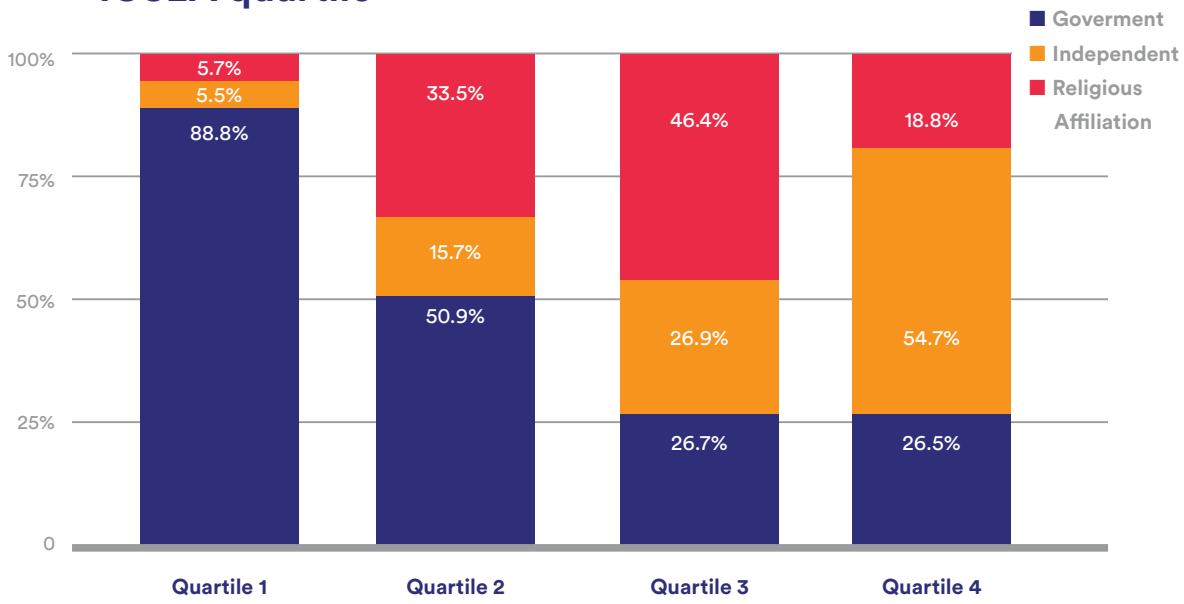
Note. Q1 represents the lowest ICSEA range while Q4 represents the highest ICSEA range.

The sample size was 2,171 primary and secondary educators from each state and territory in Australia and represented more than 90% of the total dataset. At the time of survey administration, 93% of respondents had already begun teaching online in response to COVID-19 (n = 1446) or were preparing to move instruction online (n = 592). The respondents represented 1,155 schools, which represents 10.9% of all registered schools in Australia (ACARA, 2020).

The dataset also represented schools from across school sectors with 48.5% of respondents teaching in Government schools, 25.8% in Independent schools, and 25.6% in Religious schools (primarily Catholic schools). As seen in Figure 1, schools from each of these sectors were not evenly distributed across ICSEA quartiles. Government schools were more concentrated in the lower quartiles, whilst non-government schools comprised the majority in the upper quartiles. This reflects a broader pattern across Australia, in which independent and Catholic schools serve more advantaged populations on average (Gonski, 2011). In addition, teachers with five or fewer years of experience in our sample were

disproportionately concentrated in low ICSEA schools, again echoing broader patterns across the Commonwealth (Gannon & Sawyer, 2014).

Figure 1. School sector distribution within each ICSEA quartile



Note. Quartile 1 (n = 560), Quartile 2 (n =529), Quartile 3 (n = 539), Quartile 4 (n = 543)

Analysis of the Data

Tables of frequencies and percentages, cross-tabulations, and bar graphs were used to examine the categorical variables. A Generalised Cochran-Mantel-Haenszel Stratified Test of Association (CMH test) was used to test the statistical significance of the relationships between the ICSEA quartiles and other categorical variables (Agresti, 2013; Rayner & Rippon, 2018). This test allows us to account for the disproportionate concentration of religious and independent schools in the upper ICSEA quartiles of our sample (see Figure 1) and control for the possibility that unmeasured attributes of those schools were driving observed associations in the data by using school sector as the stratifying variable. Without stratifying this test, there is a risk of confounding, where results that might appear to be due to ICSEA level are in fact more due to school type, since each is more heavily weighted to different quartiles.

Although this test has traditionally been used for two-way tables, recent extensions to the test allow for the analysis of large tables, the correct treatment of ordinal data and the ability to control for a third stratifying factor (Rayner & Rippon, 2018). For this analysis, the ordinal variable models were used for the quartiles and all other ordinal categorical variables. Additionally, log-linear models were used to test for the homogeneity of association (Agresti, 2013), that is, whether the relationship between ICSEA quartile and a given variable was varying by school-type.

Findings

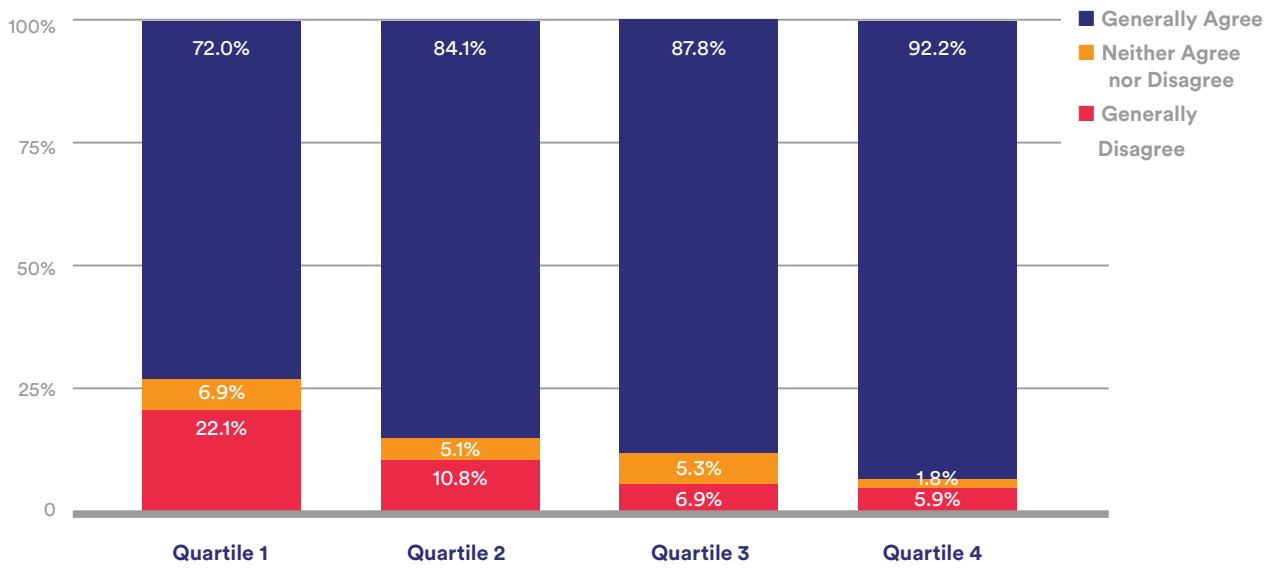
As seen in the initial analysis of the survey, the rapid shift to distance learning brought with it major disruptions and changes to the ways in which schools operated, teachers taught and students learned. When delving deeper into patterns in the data related to socio-educational advantage, it was found that while there were some cross-cutting concerns shared by educators at all schools, there were many statistically significant differences based on ICSEA scores. For many of the items on

the survey, educators' perceptions of the shift to distance teaching, reports of their experience, and stated needs varied considerably with the ICSEA quartile of their school.

Readiness to Teach Online

Pivot's survey asked teachers to indicate the extent to which they agreed or disagreed that their school was well-positioned to transition to online learning using a seven-point Likert scale. As Figure 2 below illustrates the proportion of teachers who agreed that their schools were well-positioned to transition to online instruction and this was progressively larger in the higher ICSEA quartiles. The association between the ICSEA quartile of the school in which teachers worked and their beliefs about their school's readiness to teach online was statistically significant, even when controlling for school type ($X^2_{MH}(1, N = 1914) = 52.7, p < .001$).

Figure 2. School well-positioned to transition to online learning by ICSEA quartile



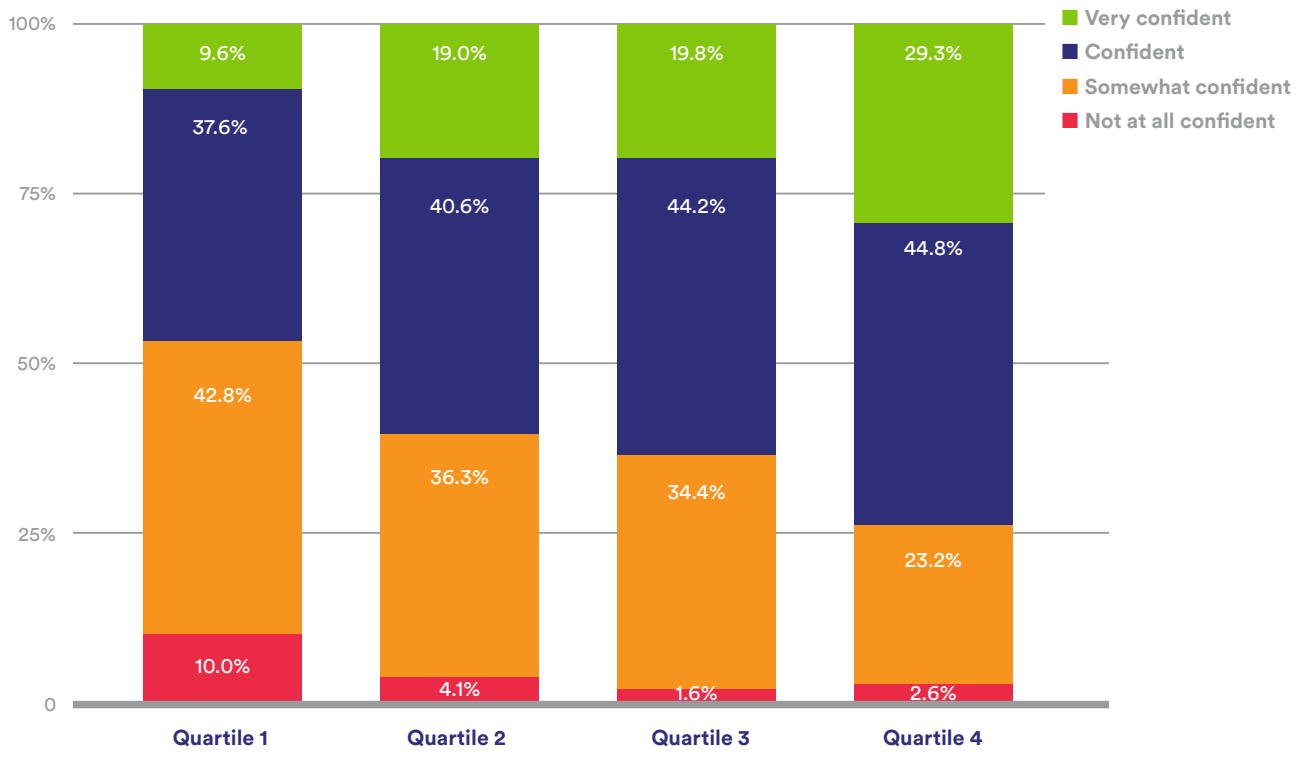
Notes. Quartile 1 (*n* = 475), Quartile 2 (*n* = 473), Quartile 3 (*n* = 476), Quartile 4 (*n* = 490); Seven-point Likert scale collapsed into three categories for the purposes of visual clarity (e.g., "Strongly Disagree," "Disagree," and "Somewhat Disagree" collapsed into "Generally Disagree").

Overall, the levels of agreement shown in Figure 2 were higher than we might expect given the difficult circumstances of the pandemic. However, it is important to note that 21.1% of teachers (n = 100) in Quartile 1 schools did not agree that their schools were ready for the transition to online learning, which is more than three times higher than Quartile 4. Across all four groups of schools, 11.2% (n = 223) generally disagreed. Although our data were not strictly representative, the analysis suggests that teachers serving a sizable number of Australian students did not feel their schools were prepared to move instruction online.

Similarly, respondents teaching in lower ICSEA schools were less confident in their schools' ability to support students' learning online than were their counterparts working in higher ICSEA schools. Teachers rated their confidence using a four-level response scale (i.e., "Not at all confident," "Somewhat confident," "Confident," and "Very confident"). As shown in Figure 3 below, teachers

reported confidence progressively increased with school ICSEA quartile.

Figure 3. Confidence in schools' ability to support students' online learning by ICSEA quartile



Note. Quartile 1 (n = 418), Quartile 2 (n = 399), Quartile 3 (n = 389), Quartile 4 (n = 420)

This association contributed to starkly contrasting levels of confidence across teachers serving schools with different levels of socio-educational advantage. For example, more than half (52.8% | n = 221) of teachers in Quartile 1 schools were "Not at all" or "Somewhat confident" in their school's ability to support students online learning compared to 25.9% (n = 109) of teachers in Quartile 4 schools. This association was statistically significant, even after controlling for the higher proportion of religious and independent schools in higher ICSEA quartiles (X^2_{MH} (1, N = 1626) = 31.5, p < .001). Additionally, a log-linear model of two-way interactions showed that the pattern of this association did not vary between types of school ($X^2_{Deviance}$ (18) = 24.0, p = .154).

As policymakers continue to grapple with how to best support teachers and students because the format of schooling remains in flux, our results signal a need to concentrate on enhancing the preparedness of schools with lower ICSEA scores for continuing online teaching and/or returning to online instruction after a temporary reopening of their campuses. The data presented above suggest that this need may be particularly acute for educators working in schools in the lowest ICSEA quartile. Additional analyses of our survey data, presented below, offer insight into potential levers for enhancing schools' readiness for contingency scenarios and increasing educators' confidence in their schools' ability to meet student needs.

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Number of Tools and Confidence Levels Using Instructional Technology

Table 2 shows the number of different technology tools used at school. The patterns across the quartiles are largely similar, although approximately twice as many Quartile 1 teachers (10.1% | *n* = 49) indicated that their school used only one technology.

Table 2. Number of different technologies used by ICSEA quartile

Number of technologies	Quartile 1	Quartile 2	Quartile 3	Quartile 4
1	10.1%	5.6%	4.9%	5.1%
2	17.4%	15.6%	16.5%	18.3%
3	23.2%	25.6%	25.8%	28.6%
4	25.9%	25.8%	28.5%	27.0%
5+	23.4%	27.4%	24.3%	21.0%

Note. Quartile 1 (*n* = 483), Quartile 2 (*n* = 480), Quartile 3 (*n* = 473), Quartile 4 (*n* = 486)

Respondents reported confidence in teaching using their primary educational technology suggested one area in which lower-ICSEA schools may need additional support. As Table 3 shows, teachers in lower ICSEA schools reported lower levels of confidence than did those in schools with a higher average level of socio-educational advantage. The association between greater confidence and higher ICSEA quartiles was statistically significant, even after controlling for the influence of school sector (X^2_{MH} (1, N = 1699) = 16.0, $p < .001$). A log-linear model of two-way interactions showed that the pattern of this association did not vary between the types of school ($X^2_{Deviance}$ (18) = 20.9, $p = .285$).

Table 3. Confidence in teaching using primary instructional technology by ICSEA quartile

	Quartile 1	Quartile 2	Quartile 3	Quartile 4
Not at all confident	8.8%	5.0%	2.2%	2.7%
Somewhat Confident	31.9%	30.0%	28.3%	23.1%
Confident	37.2%	38.5%	43.3%	44.4%
Very Confident	22.2%	26.5%	26.1%	29.7%

Note. Quartile 1 (*n* = 433), Quartile 2 (*n* = 423), Quartile 3 (*n* = 406), Quartile 4 (*n* = 437)

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This pattern of association between school ICSEA quartile and educators' self-reported confidence in teaching with technology align with existing patterns of socio-educational disadvantage in Australia. Namely, the schools in our sample that were serving the most marginalised populations also had educators who were least confident using technology for instruction. It is important for policymakers to take note of these disparities, especially given the likelihood of schooling periodically shifting back to distance learning over the next 18 months (Chowdhury et al., 2020).

Policymakers should note that training in the effective use of instructional technology is not necessarily a universal part of teacher training in Australia. For example, a 2018 study by the Australian Institute of Family Studies looking at the use of technology in secondary English classrooms found that less than 75 per cent of the teachers were trained in incorporating technology into their students' learning (Vassallo & Warren, 2018). Further, it is likely that very few Australian teachers have received formal training in online teaching.

Communication with Students and Families

Effective communication with students and families is a key component of effective distance education (Simonson, Zvacek, & Smaldino, 2019; Vlachopoulos & Makri, 2019). For this reason, Pivot asked educators to rate their ability to communicate effectively online with their students and families. Response options included "Not very effectively," "Somewhat effectively," "Effectively," and "Very effectively." Table 4 below summarizes responses.

Table 4. Efficacy of teacher communication with students and families by ICSEA quartile

	Quartile 1		Quartile 2		Quartile 3		Quartile 4	
	Students	Families	Students	Families	Students	Families	Students	Families
Not very effectively	10.9%	14.9%	3.8%	4.7%	1.7%	4.0%	1.2%	4.9%
Somewhat effectively	41.8%	43.7%	33.1%	37.5%	27.8%	32.0%	23.3%	25.1%
Effectively	36.6%	33.2%	47.2%	47.0%	50.4%	48.1%	48.0%	50.0%
Very effectively	10.7%	8.2%	15.9%	10.8%	20.1%	15.9%	27.6%	20.0%

Note. Quartile 1 (n = 476), Quartile 2 (n = 472), Quartile 3 (n = 478), Quartile 4 (n = 490)

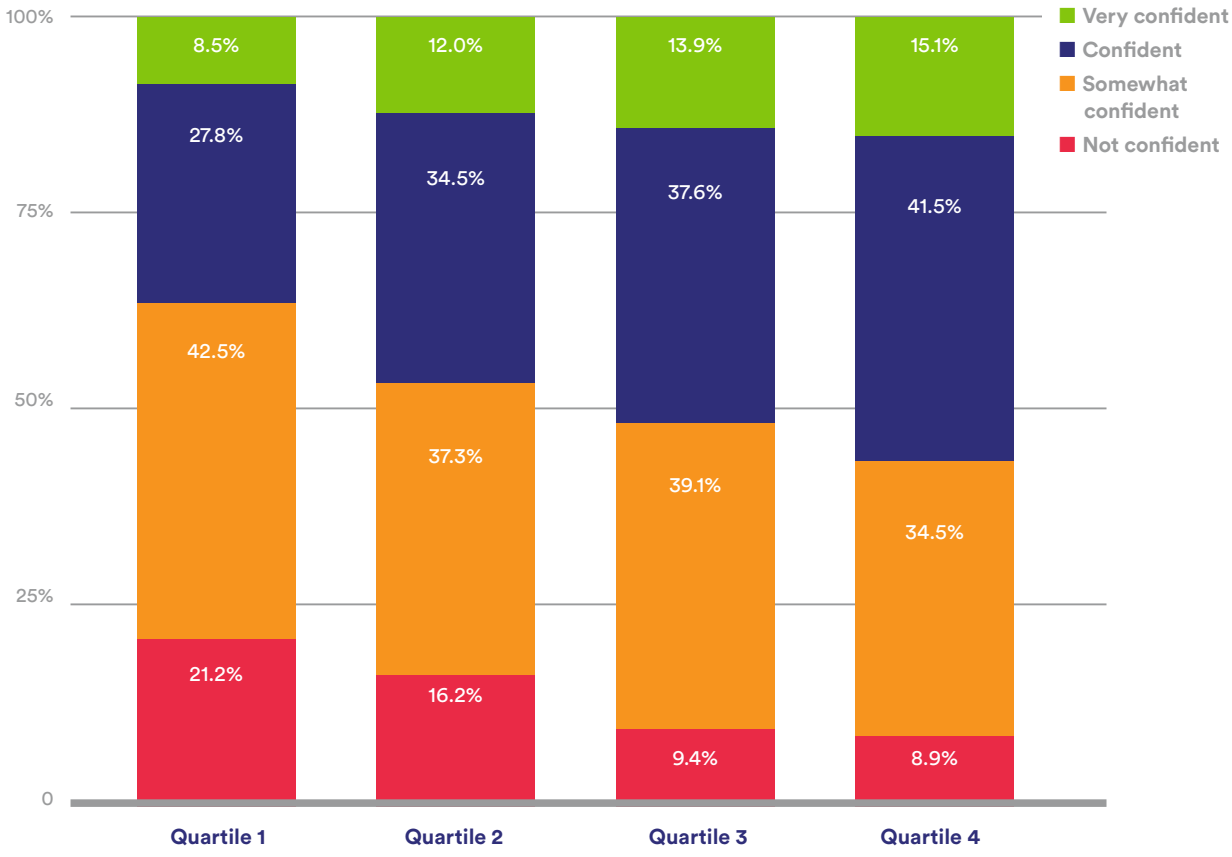
Survey respondents teaching in lower ICSEA schools rated the efficacy of their online communication with students and families significantly lower than did respondents teaching in more advantaged schools. This association remained significant after controlling for the influence of their schools' sector on both teacher-student communication (X^2_{MH} (1, N = 1916) = 50.0 , $p < .001$) and teacher-family communication (X^2_{MH} (1, N = 1916) = 47.4, $p < .001$). In each case, the pattern of responses by quartile did not vary in a statistically significant way between school type ($X^2_{Deviance}$ (18) = 22.5, $p = .212$) and ($X^2_{Deviance}$ (18) = 16.7, $p = .543$).

The magnitude of differences across ICSEA quartiles in teachers' rating of the efficacy of their online communication was notable. For example, 47.3% of Quartile 1 teachers (n=225) reported that they were able to communicate with their students "Effectively" or "Very Effectively" online. In contrast, 76% of Quartile 4 teachers (n = 370) rated the efficacy of their online communication with students at these levels. Similarly, 41.4% of Quartile 1 teachers (n = 197) reported communicating online with

families "Effectively" or "Very Effectively" compared to 70.0% of Quartile 4 teachers (n = 343).

We examined respondents' ratings of their primary instructional technology (Figure 4) and found a significant association between respondents' ICSEA quartile and their confidence that their primary instructional technology supported the engagement of students' in daily learning, even when controlling for the potential influence of school sector (X^2_{MH} (1, N = 1898) = 24.4, p < .001). Further, a log-linear model of two-way interactions showed that the pattern of this association did not vary among school sectors ($X^2_{Deviance}$ (24) = 20.4, p = .676). Figure 4 below displays the distribution of responses.

Figure 4. Confidence that primary technology supports student learning by ICSEA quartile



Note. Quartile 1 (n = 418), Quartile 2 (n = 399), Quartile 3 (n = 389), Quartile 4 (n = 420)

Although the data were not able to tell us whether teachers were also using other technologies they would have rated higher for supporting engagement, the responses to this question combined with concerns amongst educators at lower-ICSEA schools about communicating with their students, suggest that engagement in online learning may have been a challenge at the less socio-educationally advantaged schools in our sample.

This is important because effective online communication by distance educators likely facilitates student achievement (Croxton, 2014; Koç, 2017; Rovai & Barnum, 2003). Previous research has shown that learner-teacher interaction in online courses enhances learner motivation (Borup, Graham, & Davies, 2013; Martin & Bolliger, 2018) and contributes to higher student engagement (Dixson, 2010;

Pivot

Gayton & McEwen, 2007). Student engagement is essential for student achievement in online learning (Martin & Bolliger, 2018). Additionally, robust communication may help decrease feelings of social isolation, something that many educators in our sample were concerned about (Flack et al., 2020).

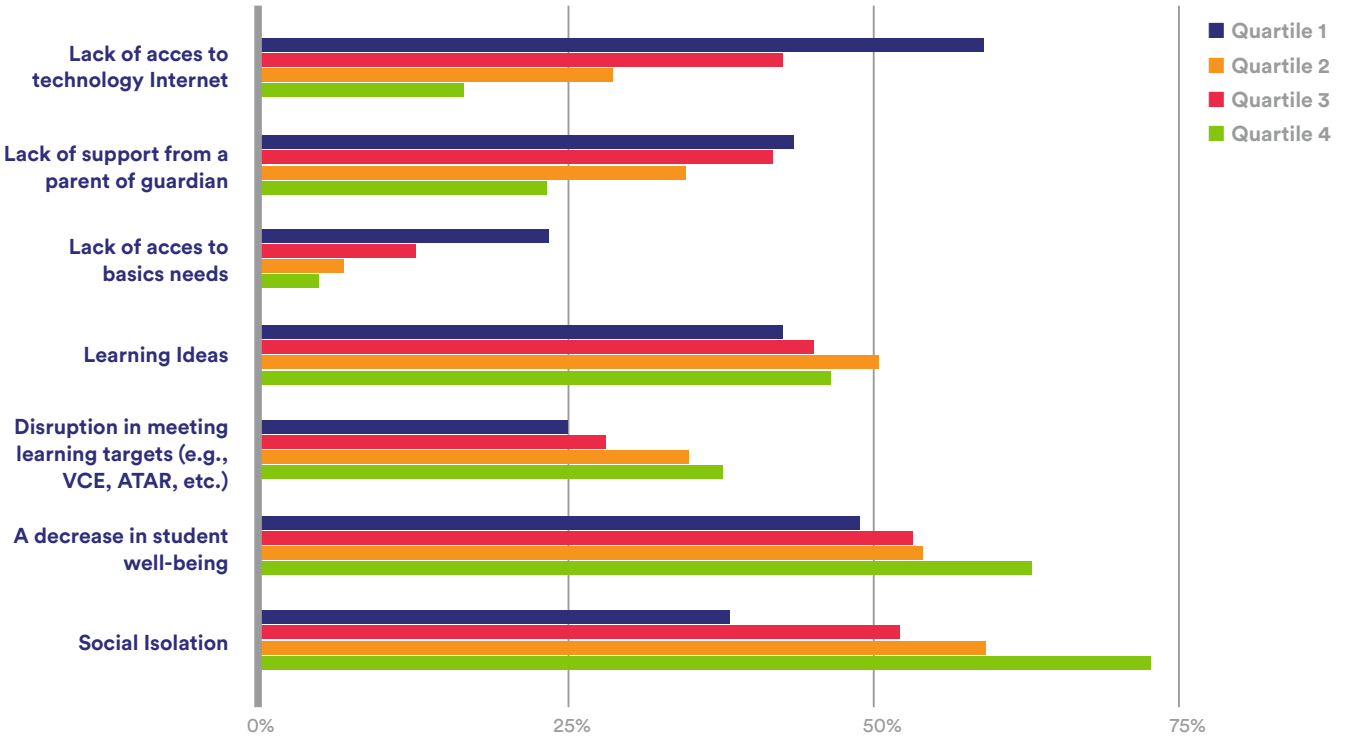
Although more research is needed, policymakers and school leaders should consider providing teachers with professional learning opportunities that will support their development of proficiency in using the features of instructional technology to cultivate communication in the online classroom and maximise student engagement.

Educators' Concerns about their Students

Finally, the survey data showed that respondents had many concerns about their students' lives that transcended teaching and learning. Pivot asked educators about their top three concerns for their students during distance teaching due to the COVID-19 pandemic. Response options included: "Lack of access to basic needs"; "Lack of access to technology/internet"; "A decrease in student well-being"; "Lack of support from a parent or guardian"; "Social isolation"; "Learning loss"; and "Disruption in meeting learning targets (e.g., VCE, ATAR, etc.)."

Figure 6 below displays the concerns of the educators in our sample by school ICSEA quartile. The areas with the most notable differences corresponding to ICSEA quartile are at the top and bottom of the figure.

Figure 6. Concerns about students by ICSEA quartile



Note. Quartile 1 (n = 525), Quartile 2 (n = 503), Quartile 3 (n = 511), Quartile 4 (n = 521)

The top two concerns for educators at Quartile 1 schools were their students' lack of access to technology/internet (59.1% | *n* = 310) and a decrease in their students' well-being (49.1% | *n* = 258). The former concern is not surprising given that approximately 15 percent of Australian families do not have access to the internet, and families in remote areas (whose concentration in a school community lowers its ICSEA score) are less likely to have internet access than families in other areas (Australian Bureau of Statistics, 2018).

Concerns about learning loss (43.6% | *n* = 229) and the availability of family members to support learning at home (43.6% | *n* = 210) were nearly tied for third place among educators working in Quartile 1 schools. With respect to interpreting this latter concern, it is critical to note that there is no empirical evidence that families whose children attend lower ICSEA schools value education less than families in more socio-educationally advantaged school communities. Rather, families with lower income levels (whose children attend lower ICSEA schools in greater concentration) are likely less able to afford in-home childcare and less frequently able to work from home during school closures (Noble, Hurley, & Macklin, 2020). In addition, many people working in lower-paying occupations are essential workers (e.g., medical assistants, sanitation workers, transit workers, food service workers, elder caregivers, domestic workers, etc.).

We found two areas where respondents' top concerns were consistent across all four ICSEA quartiles. The top concerns of educators working in Quartile 4 schools were social isolation of students (72.7% | *n* = 379), a decrease in student wellbeing (63.0% | *n* = 328), and learning loss (46.6% | *n* = 243). Decrease in student well-being and learning loss were also among the top three concerns of educators working in schools with ICSEA scores in Quartile 2 and Quartile 3.

Responses to another item also provided evidence that learning loss was a shared concern across educators working in schools of all ICSEA levels. The survey asked teachers to indicate the extent to which they agreed or disagreed that students would need extra instructional support when they returned to the physical classroom. Overall, levels of general agreement (i.e., responses of "Strongly Agree," "Agree," or "Somewhat Agree") ranged from 83.6% among Quartile 1 teachers (*n* = 475) to 75.2% among Quartile 4 teachers (n = 487).

Although the survey data showed that a large majority of educators from schools of all ICSEA levels agreed that students would need extra instructional support once they returned to campuses, those working in the least-advantaged school communities were most concerned. When we tested for an association between responses and ICSEA level, whilst controlling for school sector, the results were significant (X^2_{MH} (1, N = 1903) = 4.5, p = .033), with the largest difference being in the "Strongly Agree" category, with 22.5% of Quartile 1 teachers, compared to 12-16% in the other quartiles. This pattern did not differ in a statistically significant way between the school sectors ($X^2_{Deviance}$ (36) = 34.2, p = .556).

This finding is not surprising because many families who attend Quartile 1 schools were already experiencing economic precarity prior to the pandemic, and they are likely to have been most hard hit by job losses, food insecurity, and other difficulties associated with disruptions in academic progress (Noble et al., 2020). Furthermore, the pattern of job losses across Australia's economy suggests that the losses will widen income inequality (Team Kalkine, 2020). As shown in Figure 6 above, the proportion of teachers in Quartile 1 schools who were concerned about their students' lack of access to basic needs (24% | *n* = 125) was nearly five times higher than the proportion of Quartile 4 teachers concerned about the same (5% | *n* = 24). Given these disparities, it is imperative that policymakers turn their attention not only to strengthening schools' readiness for an uncertain future and teachers' preparedness to teach online, but also to addressing the basic needs of families in Australia's most marginalised communities.

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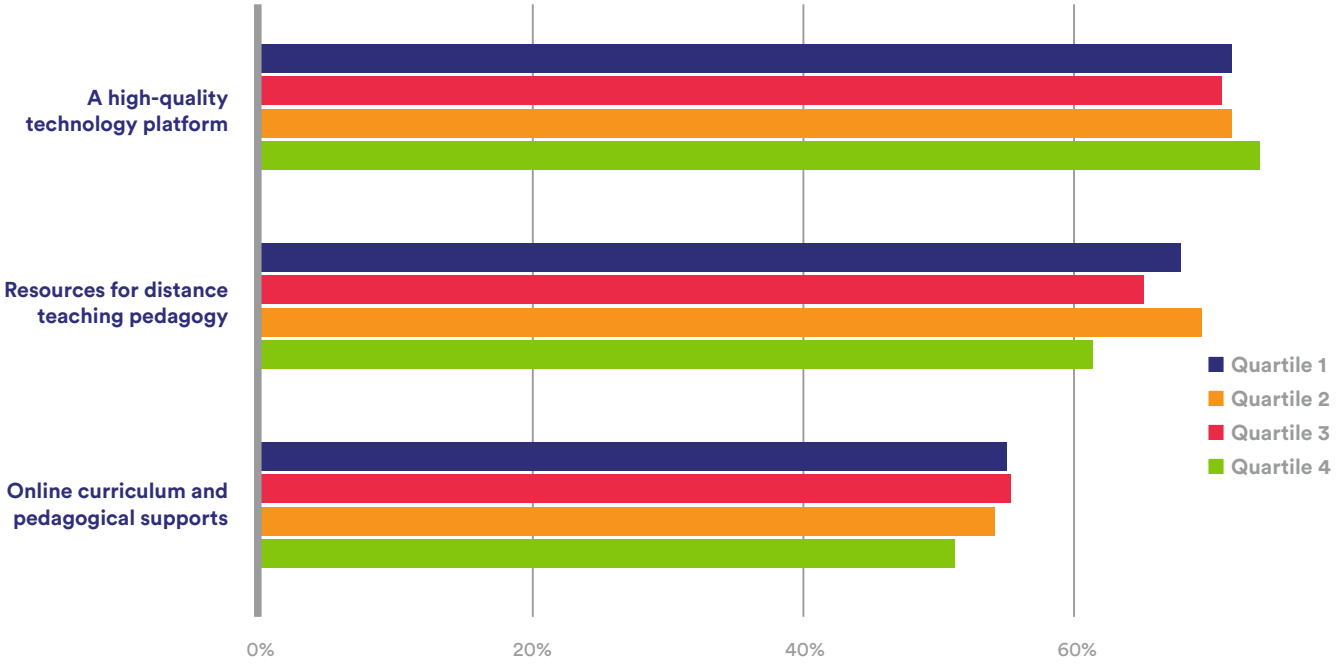
Instructional Resources Necessary for Effective Online Instruction

Instructional resources for distance teaching were rated highly amongst respondents regardless of ICSEA level. These were : “A high-quality technology platform”; “Resources for distance teaching pedagogy”; and “Online curriculum and pedagogical supports.” As shown in Figure 5 below, there was no apparent pattern related to the ICSEA level of respondents’ schools. The proportion of respondents indicating one of the three resource types was critical ranged from 51% to 74%.

Figure 7. Professional learning support critical for high-quality online instruction by ICSEA quartile



Note. Quartile 1 (*n* = 460), Quartile 2 (*n* = 463), Quartile 3 (n = 459), Quartile 4 (*n* = 474)

Policy Recommendations

School closures during the COVID-19 pandemic have reminded many Australians of the essential role schools play in society, and the crisis has also laid bare structural inequities in the Commonwealth’s educational system that have persisted for decades (Baker, 2020).

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Supporting Educators in Lower ICSEA Schools

We found many significant associations among educators' attitudes related to distance teaching and their schools' level of socio-educational advantage. To summarize, working in a school with a lower ICSEA score was associated with:

- Lower levels of agreements that their schools were well-positioned to transition to online instruction and lower confidence in their schools' ability to support students' learning online
- Less confidence in using technology for teaching
- Perceptions of less effective communication with students and families and lower ratings of primary technologies on sufficiency of support for student engagement
- Concerns for students access to internet and technology and need for extra instructional support when returning to the classroom.

All of these relationships were statistically significant even after controlling for the influence of school sector (i.e., government, religious affiliation, or independent) using Generalised Cochran-Mantel-Haenszel Stratified Tests of Association. With the exception of agreement about positioning to transition to online instruction, the log-linear modelling showed no evidence that the patterns of association with ICSEA quartiles varied across school sectors. These results suggest that educators working in less advantaged communities, even those working in religious or independent schools, have distinct concerns and needs related to the student populations they serve. Recognizing this, we further explored the data to identify what these concerns and needs and used this information to develop actionable policy recommendations.

It is important for policymakers to take steps now to:

- Improve access to internet and technology for students in lower ICSEA schools
- Undertake additional research to understand how to better match distance learning technologies to the needs of teachers at low-ICSEA schools
- Improve communication processes for students and families in low-ICSEA schools
- Prioritise professional learning for educators in low-ICSEA schools to support the development of the distinct pedagogical competencies teachers need to successfully teach online
- Provide extra resources for schools in low ICSEA schools to support students' instructional needs upon return to school.

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Appendix 3:

The Australian Technology Ecosystem during COVID-19

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AUSTRALIA'S TECHNOLOGY ECOSYSTEM DURING COVID-19

The Australian education system has seen a great shift in the use of technology due to the COVID-19 pandemic. Our recent survey of over 2300 Australian educators found that technology was a key factor in shaping their experience of shifting to online teaching. Our study showed that educators were using a wide array of technologies with varying levels of confidence during the transition. [1]

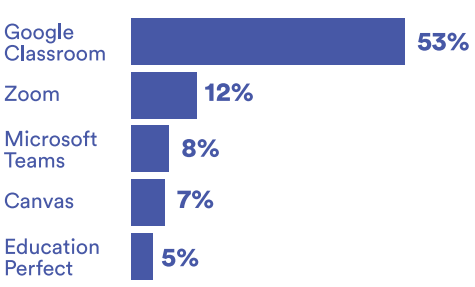
Most critical supports for distance teaching

- A high-quality technology platform — 72%
- Resources for distance teaching pedagogy — 66%
- Peer collaboration — 58%
- Instructional coaching on distance teaching methods — 55%
- Online curriculum and pedagogical supports — 54%

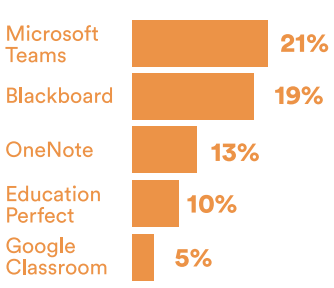
Top 5 primary technologies

AUSTRALIA WIDE

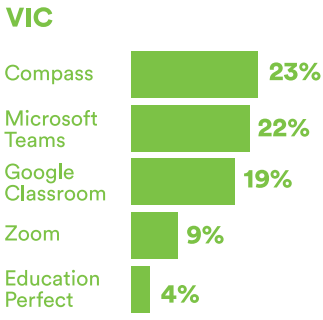
NSW



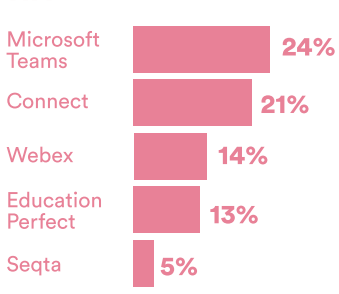
QLD



VIC



WA



Average hours per day teachers use their primary technology

36%

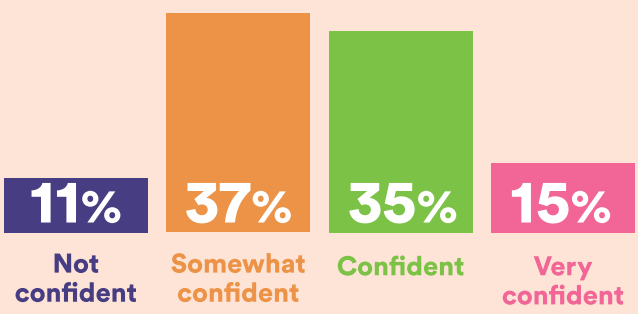
of teachers were spending **4+ hours** a day using their primary technology

Length of time schools have been using their primary technology

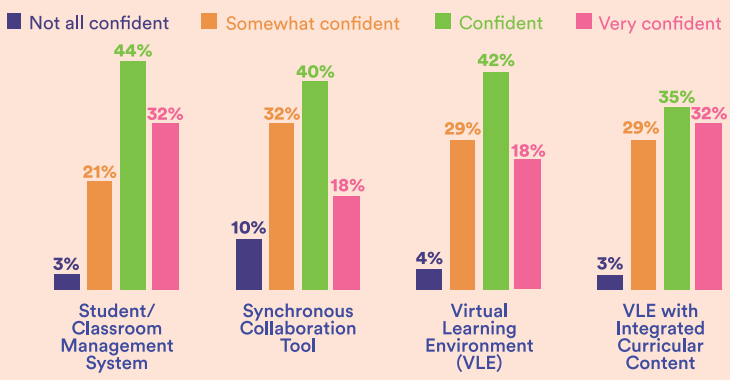
44% of teachers reported their schools had used their primary technology for **three years or more**

33% of teachers reported their schools had used their primary technology for **less than one year**

Confidence that their primary technology supports student engagement



Confidence in teaching using distance teaching tools



Educator rating if primary technology is sufficient

	Student/Classroom Management System	Synchronous Collaboration Tool	Virtual Learning Environment (VLE)	VLE with Integrated Curricular Content
Tools for differentiated instruction	56%	47%	54%	64%
Alignment with standards and curricula	74%	63%	66%	77%
Support for my communication with parents/guardians	84%	50%	47%	68%

For more information go to **www.pivotpl.com/state-of-education**

[1] Educator perspectives on the impact of COVID-19 on teaching and learning in Australia and New Zealand, Pivot Professional Learning and Education Perfect, 2020.