Ministerial Briefing Paper on Evidence of the Likely Impact on Educational Outcomes of Vulnerable Children Learning at Home during COVID-19

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Summary points

- Vulnerability in this paper is considered from two interrelated perspectives: social and educational.
- Socially vulnerable children are over-represented among the group of students who are educationally vulnerable.
- The negative impact of educational vulnerability on students' capacity to learn across all areas of the curriculum is exacerbated by their reduced access to resources at home (e.g., adequate food and shelter, ICT, a quiet place to work, books, learning support from parents), and is associated with social vulnerability. This is, in effect, a continuous cycle of disadvantage.
- While parents play a crucial role in remediating educational disadvantage, the level of education, socioeconomic status, and consequent capacity to provide home learning support and resources for students is lower among parents of educationally disadvantaged students than in the broader community.
- The likelihood of any positive impact of educational programs on vulnerable students will be greatly increased if support is also provided to deal with their basic needs.
- The basic profile of educationally vulnerable children appears to be consistent across students, regardless of their age.
- While this paper focuses on vulnerable students, it is important to note that high proportions of primary-school children are not able to work independently when using technology, and need scaffolding and support. The level of support needed is higher for younger students and those who are vulnerable.
- Schools and teachers play a vital role in supporting vulnerable children. However, most schools do not have the requisite infrastructure to support remote learning, and many teachers do not currently have the confidence or skills to manage remote learning and require support.
- While access to digital technologies and the internet is high in Australia, there is still evidence of a digital divide, with poorer Australians and those in remote locations being relatively disadvantaged.
- Many remote-learning programs exist and may be leveraged to help support the learning of vulnerable students at home. However:
  - the basic human needs of students must first be met in order for education programs to be able to succeed;
  - there is no one-size-fits-all approach that can work; and
  - programs should be tailored to meet the specific needs of vulnerable students.

Definitions

Online learning – an approach that typically provides anytime, anywhere access to resources.

Remote teaching – an approach which acts as a direct replacement for face-to-face teaching. Teachers use video technology, or similar, to interact with students in real-time and rely on students having set schedules.

Purpose

The purpose of this briefing paper is to provide evidence of the likely impact on educational outcomes for vulnerable children learning at home as a result of the COVID-19 response measures, and the merits of a range of delivery models.

The paper is structured in four sections.

Section 1 reports data from three international research programs and from the Australian National Assessment Program ICT Literacy. The purpose of this section is to use data collected in large-scale assessment programs that have representative national samples of participants to describe the profile of disadvantaged students in Australia.

Section 2 discusses themes emerging from the literature pertaining to equity and access in Australia; the preparedness and skills of teachers and students to teach and learn using technology; student engagement; and the role of parents.

Section 3 presents different models of home learning.

Section 4 summarises evidence-based actions, which will support learning, particularly for vulnerable children in the short and medium term, and which will contribute to a flexible, resilient, and responsive education system in the event of any future interruptions in schooling.

Section 1: students and disadvantage

This section reports on students and disadvantage using data obtained from four research programs:

- The Progress in International Reading Literacy Study (PIRLS) – Year 4
- The Programme for International Student Assessment (PISA) – 15-year-olds (most frequently Year 10)
- The International Computer and Information Literacy Study (ICILS) – Year 8
- The Australian National Assessment Program – Information and Communication Technology Literacy (NAP–ICT Literacy) – Years 6 and 10.

The data collected and reported in each of these programs were collected from representative samples of students. Data for Australian students are presented from Australia's most recent participation in each of these programs: PIRLS 2016, PISA 2018, ICILS 2013 and NAP–ICT Literacy 2017.

Data from NAP–ICT Literacy and from ICILS provide evidence of students' capacity to work with Information and Communication Technologies (ICT) across Years 6, 8 and 10.

Data from PIRLS provide evidence of Year 4 students' reading and home contexts for reading.

Data from PISA provide evidence of 15-year-old students' home contexts for learning. The PISA Reading Literacy achievement data have been used to distinguish between weak readers (below PISA Reading Literacy Level 2) and more capable readers (those at or above Reading Level 2).

The following data relate to the capacity of students in Years 6, 8 and 10 to make effective independent decisions when working with ICT.

Independent Learning Skills and ICT Literacy

Overview

Data relating to students' capacity to use ICT in learning are taken from NAP–ICT Literacy and ICILS.

The data presented below provide an overview of Australian students' independent learning skills when using ICT. Following are data relating specifically to disadvantaged students in Australia.

Students working at Level 4 and above on the NAP–ICT Literacy scale (and students working at Level 3 and above on the ICILS computer and information literacy (CIL) scale) are able to make independent decisions when working with ICT[1] [2]. These students can work with relatively little support and scaffolding when managing information and creating digital work products. Students working at lower levels generally need scaffolding and support to complete information management and communication tasks on computers.

- In Australia in 2017, 13 per cent of Year 6 students and 54 per cent of Year 10 students achieved at Level 4 or above on the NAP–ICT Literacy scale. In 2013, the equivalent of 36 per cent of Year 8 students achieved at Level 4 or above on the NAP–ICT Literacy scale[3].
- NAP–ICT Literacy data collected every three years since 2005 show very little change over time in the ICT literacy of Year 6 students and, a decrease since 2011 in the ICT literacy of Year 10 students. There is no evidence to suggest that in 2020 the profile of student achievement in Australia should be considerably better than it was in the past.

[1] Australian Curriculum and Assessment Authority, *NAP Sample Assessment ICT Literacy Years 6 and 10 2017*, ACARA, Sydney, 2018

[2] Fraillon J, Ainley J, Schulz W, Friedman T & Duckworth D, *Preparing For Life in a Digital World IEA International Computer and Information Literacy Study 2018 International Report*, Springer, Cham, 2019

[3] De Bortoli L, Buckley S, Underwood C, O'Grady E & Gebhardt E, *Australian students' readiness for study, work and life in the digital age. International Computer and Information Literacy Study 2013*, ACER, Melbourne, 2014

Independent ICT learning skills and disadvantage

On the NAP–ICT Literacy scale, levels 1 and 2 represent very basic proficiency. Students working at these levels can execute only basic technical skills when working with ICT and will need high levels of scaffolding and support. Students working at these levels are unlikely to complete tasks independently without support.

A digital divide in student learning skills with ICT is clearly evident in Australia with reference to students' Indigenous status, school location, and educational capital measured by their parents' level of education and occupational status. Evidence of this divide, extracted from data collected in NAP–ICT Literacy 2017,[4] are provided below:

- 77 per cent of Year 6 Indigenous students were performing at Levels 1 or 2 in comparison to 45 per cent of non-Indigenous students.
- 40 per cent of Year 10 Indigenous students were performing at Levels 1 or 2 in comparison to 13 per cent of non-Indigenous students.
- 65 per cent of Year 6 students in remote schools and 58 per cent of students in regional schools were performing at Levels 1 or 2 in comparison to 42 per cent of students in metropolitan schools.
- 29 per cent of Year 10 students in remote schools and 17 per cent of students in regional schools were performing at Levels 1 or 2 in comparison to 12 per cent of students in metropolitan schools.
- 63 per cent of Year 6 students whose parents who were in unskilled work or not in paid work were performing at Levels 1 or 2, in comparison to 41 per cent of students whose parents were working in trades, skilled, and professional work.
- 23 per cent of Year 6 students whose parents were in unskilled work or not in paid work were performing at Levels 1 or 2 in comparison to 10 per cent of students whose parents were working in trades, skilled, and professional work.
- 74 per cent of Year 6 students whose parents' highest level of education was Year 11 or equivalent were performing at Levels 1 or 2 in comparison to 32 per cent of students whose parents had obtained a Bachelor degree or above.
- 30 per cent of Year 10 students whose parents' highest level of education was Year 11 or equivalent were performing at Levels 1 or 2 in comparison to seven per cent of students whose parents had obtained a Bachelor degree or above.

Reading Literacy and Year 4 Students

Overview

At school, young people both learn to read, and use reading to learn[5].Reading success is fundamental to success in schooling. The Progress in International Reading Literacy Study (PIRLS) is an assessment of Year 4 students' reading literacy. Australia was one of 61 countries that participated in PIRLS 2016, and data from PIRLS 2016 are referenced in this paper.

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[4] Data reported in this subsection were taken from the NAP-ICT Literacy 2017 database.
[5] Mullis, I. V. S. Martin, M. O. & Sainsbury, M. (2015). *PIRLS 2016 Reading Framework*

In PIRLS, reading literacy is measured against a scale that includes low, intermediate and high benchmark standards. In Australia, the PIRLS International Intermediate Reading Benchmark is the proficient standard for Year 4 reading, and this was reached by 81 per cent of Australian students[6] . The PIRLS Low International Benchmark represents a level of reading literacy at which students can engage with simple texts at a basic level. Students' reading at this level may require significant support with learning to read and in reading to learn. The following data describe the learning contexts of Year 4 students in Australia who are reading at or below the PIRLS Low International Benchmark.

Achievement of the PIRLS Low International Benchmark and Indigenous status:

- In Australia, five per cent (one in 20) students are reading at or below the PIRLS Low International Benchmark[7].
- 18.3 per cent of Indigenous students are reading at or below the Low International Benchmark in comparison to four per cent of non-Indigenous students[8].

Year 4 Students' access to learning resources

The data show clearly that Year 4 students who are at, or below, the PIRLS Low International Benchmark have less access to learning resources at home than higher achieving students[9].

- 20 per cent of students at or below the PIRLS Low International Benchmark reported that they did not have an internet connection at home in comparison to six per cent of students whose reading is above this level.
- 14 per cent of students at or below the PIRLS Low International Benchmark reported that they did not have access to a computer or tablet device at home in comparison to three per cent of students whose reading is above this level.
- 32 per cent of students at or below the PIRLS Low International Benchmark reported that they did not have their own desk or place to study at home in comparison to 16 per cent of students whose reading is above this level.
- 40 per cent of students at or below the PIRLS Low International Benchmark reported having fewer than 26 books in their home (of any type in the whole home) in comparison to 17 per cent of students whose reading is above this level.
- 61 per cent of students below the PIRLS Low International Benchmark reported borrowing books from their school library at least once a week. Many of these students who already have limited access to books will have reduced access when working from home.

The data show differences in the patterns of ICT use between weak readers and other students[10].

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[6] Thomson S, Hillman K, Schmid M, Rodrigues S & Fullarton J, *Reporting Australia's results PIRLS 2016*, Australian Council for Educational Research, Melbourne, 2017.
[7] ibid
[8] ibid
[9] Data reported in this subsection were taken from the PIRLS 2016 International Database
[10] Data reported in this subsection were taken from the PIRLS 2016 International Database

- 24 per cent of students at or below the PIRLS Low International Benchmark reported that they never, or almost never, used a computer or tablet at home in comparison to 14 per cent of students whose reading is above this level.
- In contrast, 46 per cent of students at, or below, the PIRLS Low International Benchmark reported that they used a computer every day or almost every day at home in comparison to 38 per cent of students whose reading is above that level.
- The students at or below the PIRLS Low International Benchmark use computers more frequently for recreation than students above this level. For example, 41 per cent of students at or below the PIRLS Low International Benchmark reported that they used a computer or tablet for playing games more than one hour per day, in comparison to 28 per cent of students whose reading is above this level. 38 per cent of students at or below the PIRLS Low International Benchmark reported that they used a computer or tablet for watching videos more than one hour per day in comparison to 27 per cent of students whose reading is above this level.

Year 4 students' need for support from their parents

Parents of low achieving students already need to provide additional support for their children in comparison to the parents of higher achieving students. This need for support may be exacerbated when students are learning from home. Lower achieving students are significantly less confident readers than higher achieving students and this relative lack of confidence may further influence their capacity to work from home[11].

- 26 per cent of students at or below the PIRLS Low International Benchmark reported that they ate breakfast **sometimes, almost never, or never** in comparison to 12 per cent of students whose reading is above this level.
- 30 cent of students at or below the PIRLS Low International Benchmark reported that they felt hungry when they arrived at school **every day,** in comparison to 12 per cent of students whose reading is above this level.
- The parents of 38 per cent of students at or below the PIRLS Low International Benchmark reported that someone in their house helped their child with homework every day in comparison to 17 per cent of parents of students whose reading is above this level.
- On a reading self-efficacy scale, students at or below the PIRLS Low International Benchmark reported significantly lower reading self-efficacy scale than students whose reading is above this level ($t < 0.000$). The effect size of this difference is 2.7 (Cohen's d), which is very large. For example, 66 per cent of students below the PIRLS Low International Benchmark reported that they find reading harder than any other subject in comparison to 14 per cent of students whose reading is above this level.

Reading Literacy and 15-year-old Students

As is the case for the previously cited programs, PISA describes young people's performance across a range of proficiency levels. There are separate PISA scales for each of Reading Literacy, Mathematical Literacy and Scientific Literacy. In this paper we focus on achievement in Reading Literacy, given the role of reading as fundamental to participation in education and

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[11] Data reported in this subsection were extracted from the PIRLS 2016 International Database

society, and that achievement between Reading Literacy and Mathematical and Scientific Literacy are highly correlated[12].

Overview

In Australia, low performing students are those whose reading literacy performance is below Level 2 on the PISA Reading Literacy scale[13]. Level 2 proficiency is described as being too low to enable a young person to 'participate effectively and productively in life'[14].

In Australia, 20 per cent of students were low performing in comparison to 23 per cent of students across OECD countries[15].

PISA Reading Literacy and Disadvantage

The profile of low performing Australian students in PISA Reading literacy is similar to that of lower performing students measured in PIRLS, and NAP-ICT Literacy. Indigenous status, socioeconomic status (SES), and school location are all associated with student disadvantage.

- 18 of students in metropolitan schools were low performing in comparison to 24 per cent of students in provincial schools and 38 per cent of students in remote schools[16].
- 31 percent of students in the lowest SES quartile were low performing in comparison to 21 per cent in the second SES quartile, 15 per cent in the third SES quartile, and 10 per cent of students in the highest SES quartile[17].
- 43 percent of Indigenous students were low performing in comparison to 18 per cent of non-Indigenous students[18].
- 27 per cent of students who spoke a language other than English at home were low performing in comparison to 18% of students who spoke English as their first language at home[19].

Access to resources

The profile of difference between low performing and higher performing Australian 15-year-olds in PISA was very similar to that reported between low and higher performing Year 4 Australian students in PIRLS.

Low performing students reported generally lower access to resources, but more reported spending large amounts of time on the internet at home than higher performing students. However, higher performing students reported spending more time browsing the internet for schoolwork (outside of school) than low performing students[20].

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[12] In Australia in 2018 the correlation between achievement in Reading Literacy and Mathematical Literacy was 0.787 and between achievement in Reading Literacy and Scientific Literacy was 0.852.
[13] Thomson S, De Bortoli L, Underwood C & Schmid M, *PISA 2018 Reporting Australia's Results Volume I Student Performance*, Australian Council for Educational Research, Melbourne, 2019. p. xix
[14] Thomson et al. 2019 op. cit p. xxix
[15] Thomson et. al. 2019 op. cit.
[16] Thomson et al. 2019 op. cit p. 77
[17] Thomson et al. 2019 op. cit p. 81
[18] Thomson et al. 2019 op. cit p. 85
[19] Thomson et al. 2019 op. cit p. 91
[20] Data reported in this subsection were extracted from the PISA 2018 International Database

	No access to a computer or tablet	Internet at home	> 4 hours per day using the internet	Rarely browse the internet (outside of school) for school work
Low performing (below level 2)	13%	Yes (and use it) 90% Yes (don't use it) 6%	52%	38%
Higher performing (level 2 and above)	3%	Yes (and use it) 98% Yes (don't use it) 1%	44%	21%

Students' need for support from their parents

Similar to the findings reported for Year 4 Australian students in PIRS, low performing students in PISA Reading Literacy expressed significantly lower levels of interest in using ICT, and had lower levels of confidence using digital devices in general than higher achieving students.

Section 2: themes from the literature

Current school closures and learning from home requirements highlight existing, long-standing issues in relation to equity and access to resources that, without remediation, are likely to have a negative impact on vulnerable children and young adults.

Digital inclusion

Using technology is one way that schools can address continuity of teaching and learning. However, the 2019 Australian Digital Inclusion Index[21] shows that, although the overall index has increased since 2017 across all three dimensions of digital inclusion: Access, Affordability and Digital Ability, there are substantial and widening gaps for some groups. Improvement in the availability accessibility and affordability of ICT was identified as a recommendation in the 2018 independent review into regional, rural and remote education[22]. As illustrated by the data reported in section 1 there is a substantial digital divide between richer and poorer Australians. Affordability remains a key issue for many. Mobile-only users are also disadvantaged. For Indigenous Australians, access and affordability further diminish with remoteness.

For many Australian families online home learning is not a practical option without additional resourcing. While the exact nature of the necessary resources varies across disadvantaged families, three categories of potential support needs are evident: living essentials (e.g., food, and safe accommodation); provision of technology and learning resources to enable online school participation (e.g., internet access, devices, access to electricity); and support to make use of the technology and learning resources (e.g., technical assistance, remedial learning support).

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[21] Thomas, J, Barraket, J, Wilson, CK, Rennie, E, Ewing, S, MacDonald, T, 2019, Measuring Australia's Digital Divide: The Australian Digital Inclusion Index 2019, RMIT University and Swinburne University of Technology, Melbourne, for Telstra. DOI: https://doi.org/10.25916/5d6478f373869

[22] Halsey, J. (2018). Independent Review into Regional, Rural and Remote Education: Final Report. Canberra, ACT: Australian Government Department of Education and Training.

Digital skills and school readiness for online learning

The data reported in Section 1 show that the digital skills of Australian students have at best remained stable, or at worst decreased, since 2005, and that many Australian students are not capable of working independently with ICT. Questions also remain about the capacity for teachers to adapt quickly to online teaching.

In ICILS 2013, while Australian teachers generally reported very high levels of confidence in completing a range of teaching-related tasks on computer, the three tasks that they reported least confidence to complete were: collaborating with others using shared resources such as Google Docs (48 per cent of teachers expressed confidence); contributing to a discussion forum/user group on the internet (60 per cent expressed confidence); and installing software (69 per cent expressed confidence)[23]. Two of these tasks are directly-related to online teaching and the third (installing software) can be regarded as a general indicator of technical confidence and problem solving which supports online teaching.

Australia did not participate in ICILS 2018, however, across seven countries with nationally representative data from teachers (Chile, Denmark, Finland, Italy, Kazakhstan, the Republic of Korea and Portugal), the tasks that teachers showed lowest confidence to complete were: collaborating with others using shared resources such as Google Docs (an average of 57 per cent of teachers expressed confidence); contributing to a discussion forum/user group on the internet (an average of 58 per cent expressed confidence) and using a learning management system (an average of 59 per cent of teachers expressed confidence)[24]. As in 2013, the tasks that teachers express the least confidence to complete are those that are directly associated with online learning.

Teacher confidence in using ICT in their teaching was measured in ICILS 2013 and in ICILS 2018. The results were very similar across the two cycles of the study. In summary, teachers who are more confident users of ICT in their teaching: i) use ICT more frequently, ii) are younger (under 40 years old in comparison to 40 years and older), iii) have more positive views about the value of using ICT in teaching, and, iv) fewer negative views about the problems associated with using ICT in teaching[25] [26].

This raises the questions about the role of teacher professional learning to support the use of ICT in teaching. Online teaching is different from face-to-face teaching,[27] and, for teachers to be effective in an online environment, they need upskilling in both online teaching and online learning design. In each of ICILS 2013 and 2018 between 20 and 59 per cent of teachers reported having taken part in different professional learning activities. Across both cycles, the most common professional learning activity was observing other teachers using ICT in teaching (reported as having been done by 57 per cent of teachers in Australia in 2013 and

[23] Fraillon J, Ainley J, Schulz W, Friedman T., & Gebhardt E, *Preparing For Life in a Digital Age IEA International Computer and Information Literacy Study 2013 International Report*, Springer, Cham, 2014.
[24] Fraillon J, Ainley J, Schulz W, Friedman T., & Duckworth D, *Preparing For Life in a Digital World IEA International Computer and Information Literacy Study 2018 International Report*, Springer, Cham, 2019.
[25] Fraillon et al. 2014 op. cit.
[26] Fraillon et al. 2019 op. cit.
[27] Ní Shé, C., Farrell, O., Brunton, J., Costello, E., Donlon, E., Trevaskis, S., Eccles, S. (2019)Teaching online is different: critical perspectives from the literature. Dublin: Dublin City University. Doi:10.5281/zenodo.3479402

by 59 per cent of teachers across all countries in 2018)[28] [29]. In 2018, the two professional learning activities with the lowest reported participation by teachers were: a course on the use of ICT for students with special needs or specific learning difficulties (participated in by 24 per cent of teachers across countries); and a course on how to use ICT to support personalised learning by students (participated in by 28 per cent of teachers across countries)[30]. The two activities which had the lowest participation by teachers across countries, are of specific relevance to working with vulnerable students.

As stated previously, online teaching is not the same as its face-to-face counterpart. Neither is online learning design nor the learning environment. Schools generally do not have a learning management system (LMS) in place which would provide an appropriate learning environment. Learning management systems are specially designed environments for online learning. They support how learning resources, including multimedia resources, can be organised and accessed; how students can engage in collaborative activities with their peers and teacher; and, how student engagement and progress can be tracked through learning analytics. Importantly, they are secure learning environments when managed properly. Vulnerable children and their families are at much greater risk in terms of cybersafety[31]. Learning management systems offer protection in an online environment as the tools for learning are embedded in the system, not external to it.

Building school infrastructure and teachers' repertoires of pedagogical practice to be able to continue teaching and learning in online and flexible ways is important both during, and as we emerge from, the current crisis. Interruptions in schooling are not unusual in Australia, as the 2019 bushfires demonstrated. Judicious investment in equitable access to technologies and learning resources, learning management systems, and building teacher capacity will pay dividends well into the future and contribute to a more equal and resilient education system.

Student engagement

Student engagement, or disengagement, is a complex construct[32]. There are different types or domains of disengagement and students can be disengaged at different levels. Disengagement is a process as well as an outcome, and contexts beyond the educational setting are integral to the process of disengagement.[33]

Resources such as families' time, income, and human, social, and psychological capital are differentially distributed across and within families and impact upon the kind of support families are able to provide to support children's learning in school[34]. It follows that vulnerable children will be further disadvantaged in relation to their peers in a home learning environment where

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[28] Fraillon et al. 2014 op. cit.
[29] Fraillon et al. 2019 op. cit.
[30] Fraillon et al. 2019 op. cit.
[31] El Asam, A. & Katz, A. (2018) *Vulnerable Young People and Their Experience of Online Risks.* Human-Computer Interaction. Taylor & Francis. DOI:10.1080/07370024.2018.1437544.
[32] Christenson, S. L., Reschly, A. L. & Wylie, C. (eds.) 2012. Handbook of research on student engagement, London: Springer.
[33] Hancock, K. J., & Zubrick, S. (2015).Children and young people at risk of disengagement from school: Commissioner for Children and Young People, Western Australia
[34] Zubrick, S. R., Silburn, S. R. & Prior, M. 2005. Resources and contexts for child development: Implications for children and society. In: Richardson, S. & Prior, M. (eds.) No time to lose: The wellbeing of Australia's children. Carlton: Melbourne University Press.

they are distanced from the kinds of interventions and support provided by school and teachers.

Social connections and relationships are important protective factors against school dropout. Technology can play a role in maintaining social connections between teachers and students and students and students, even if this takes place via telephone. Maintaining connection is important, especially for students who are at risk of disengagement.[35]

Attendance at school is used as a school-based measure and proxy for student engagement. School attendance has been a core tenet of the Australian Government's *Closing the Gap* strategy since 2007. The 2020 *Closing the Gap Report*[36] shows that school attendance rates for Indigenous students have not improved over the past five years. Attendance rates for Indigenous students remain lower than for non-Indigenous students (around 82 per cent compared with 92 per cent in 2019).

These gaps are evident from the first year of schooling, and widen during secondary school. The gap is most prominent in remote and very remote schools, where communities experienced multiple layers of disadvantage. Further disengagement from schooling for Indigenous students as a result of school closures is a valid concern. However, biosecurity measures, such as those implemented in the Northern Territory during the COVID-19 situation, mean that many remote and very remote school communities are continuing to function as normal during the current crisis.

Regardless of context, maintaining connection with students is important when schooling is interrupted, especially for students who are at risk of disengagement.[37] Positive relationships between students and teachers reduces the risk of students' dropping-out, especially among high-risk students[38] [39]. Finding ways to maintain those connections and relationships will be of great importance for vulnerable students.

The role of parents

Research shows parental involvement in children's learning is important regardless of mode of delivery. Studies of parental involvement in schooling show that interactions are most effective when voluntary,[40] when there is a clear understanding for the roles of parents and

[35] Halsey, J. (2018). Independent Review into Regional, Rural and Remote Education. Commonwealth of Australia, Canberra

[36] Department of the Prime Minister and Cabinet. (2020). *Closing the Gap Report 2020*. Canberra: Department of the Prime Minister and Cabinet.

[37] Halsey, J. (2018). Independent Review into Regional, Rural and Remote Education. Commonwealth of Australia, Canberra

[38] Croninger, R. G., & Lee, V. E. (2001). Social capital and dropping out of high school: Benefits to at-risk students of teachers' support and guidance. Teachers College Record, 103 , 548–581.

[39] Rumberger, R. W., & Palardy, G. J. (2005). Does segregation still matter? The impact of student composition on academic achievement in high school. Teachers College Record, 107(9), 1999-2045.

[40] Jeynes, W. (2012). A meta-analysis of the efficacy of different types of parental involvement programs for urban students. *Urban education, 47*(4), 706-742.

teachers in learning,[41] and where partnerships have a deliberate focus on learning and wellbeing[42].

Involving parents/caregivers in learning has a greater impact on improving student outcomes than socioeconomics.[43] [44] Recent studies on the role of parents/caregivers in student learning, [45] [46] emphasise that the role of the parent is not to replace the teacher, but rather to support the learning of the child. The nature of this support needs to be different depending on the age of the child. Broadly speaking, parents/caregivers can support their children's learning by helping them to develop independent learning skills, and schools can help parents by providing practical strategies and materials to support learning at home. Research also shows that parents are important in supporting the development of students' digital literacy skills

Support for parents of vulnerable children at this time is particularly important and especially so for parents of younger children. The data presented in section 1 show that the parents of vulnerable children are more likely to be socially and educationally disadvantaged than other parents.

Resources and strategies need to be attentive to the particular circumstances of families. There are readily-available, evidence-based resources schools can share with parents[47]. Research that may not be readily evident to schools is the positive and enduring impact across years of schooling of the availability of books in homes[48] [49].

The provision of books to vulnerable families as well as learning resources in a home learning situation is a cost-effective response which will continue to benefit disadvantaged children long beyond the current period of school closures.

Section 3: models of home learning

The evidence around delivery models is clear that there is no one-size-fits-all approach to learning from home. Different schools and communities have different resources and different responses are needed across different ages and contexts.

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[41] Emerson, L., Fear, J., Fox, S., & Sanders, E. (2012). Parental engagement in learning and schooling: Lessons from research. *A report by the Australian Research Alliance for Children and Youth (ARACY) for the Family–School and Community Partnerships Bureau: Canberra*.

[42] National School Improvement Tool (2012). Australian Council for Educational Research.

[43] Desforges, C., & Abouchaar, A. (2003). *The impact of parental involvement, parental support and family education on pupil achievement and adjustment: A literature review (Vol. 433).* London: DfES.

[44] Goldman, R. 2005. *Fathers' involvement in their children's education*. London: National Family and Parenting Institute.

[45] Education Endowment Foundation. (2020). *Evidence for Learning Early Childhood Education Toolkit: Education Endowment Foundation.*

[46] Evidence for Learning. (2019). *Working with parents to support children's learning.*

[47] Evidence for Learning. (2019). *Working with parents to support children's learning.*

[48] Evans M.D.R., Kelley J, Sikora J, Treiman D.J., . Family scholarly culture and educational success: Books and schooling in 27 nations. *Research in Social Stratification and Mobility*, 2010; DOI: 10.1016/j.rssm.2010.01.002

[49] Sikora, J, Evans M.D.R., Kelley J, Scholarly culture: How books in adolescence enhance adult literacy, numeracy and technology skills in 31 societies, Social Science Research, Volume 77,2019,Pages 1-15, https://doi.org/10.1016/j.ssresearch.2018.10.003.

Fully online learning

Requires: a Learning Management System; skilled teachers in online learning design and teaching; access for all; student and teacher digital skills.

Advantages:

- A specially-designed, secure environment for learning with inbuilt tools for teachers (including assessment tools)
- Allows for collaboration between students and teachers, including social connections.
- No privacy issues if managed appropriately
- Can be used from any device, anywhere (including phone)
- Can monitor student engagement and progress through inbuilt analytics
- Allows for asynchronous learning.

Limitations:

- Requires connectivity
- Younger children need more support to work independently and with ICT.

Considerations for vulnerable children:

- Vulnerable children are more likely to have fewer resources available to them. They and their families will need more support.
- Vulnerable children and their families are at greater cyber safety risk. Specific support and resources will be needed to address this.

Remote teaching

This acts as a direct replacement for face-to-face teaching. Teachers use video technology, or similar, to interact with students in real-time and it relies on students having set schedules.

Positives:

- Can be implemented immediately.
- Accessible from any device including a smart-phone.

Negatives:

- Requires connectivity
- Only works in real time. Recordings require cloud storage, large data downloads.
- Does not allow for curation of learning resources.
- Privacy and security issues.
- Not sustainable beyond a few weeks.
- Can't monitor engagement.
- Doesn't provide collaborative learning or social connections between students.

Considerations for vulnerable children:

- Connectivity issues and lack of hardware

- Cybersafety issues
- Requires digital skills.

Hybrid model: Combination of remote teaching and provision of paper-based resources

Positives:

- Can capitalise on existing learning resources in schools
- Using video software will keep the teacher-student connection
- Can work with smart-phone technology
- Allows for asynchronous learning.

Negatives:

- Requires independent learning from students
- Difficult to track student engagement and progress
- Likely short term solution
- Still requires some sort of access and connectivity.

Considerations for vulnerable children:

- Requires support of parent/caregiver
- May not have a smart-phone
- Potentially more complex management of consistency across modes of delivery.

Paper-based learning packs

Requires: Printed materials to be delivered to students' homes.

Positives:

- Requires minimal equipment
- May be quicker to assemble than digital resources.

Negatives:

- Requires self-regulation and parental support
- Difficult to track learning
- Minimal student-teacher connection or student-to-student connection.

Considerations for vulnerable children:

- Many vulnerable children will have neither the family resources, nor environment to use provided resources usefully for learning

- Teachers will need to find ways to connect with vulnerable children and provide direction and support.

Section 4: evidence-based actions

These evidence-based actions will support learning, particularly for vulnerable children, in the short and medium term and contribute to a flexible, resilient and responsive education system in the face of any future interruptions in schooling.

Immediate actions

Focus on continuity of teaching and stop-gap solutions putting student wellbeing at the centre of responses.

- Pay attention to maintaining student connection, safety, and access to resources.
- Trust teaching/learning materials already in place over technological solutions.
- Collaborate within and across schools and across government agencies to support vulnerable students.
- Provide resources and skills for teachers, parents/caregivers, students.

Medium-term actions

Focus on equity, inclusion, infrastructure, and capacity-building.

- Improve digital access, hardware, and provision of other resources (e.g., books in homes)
- Implement learning management systems and incremental teacher professional learning programs in online learning design and teaching.
- Upscale programs that build wider community capacity (e.g., Families as First Teachers, an Abecedarian approach.

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