Productivity Commission Consultation: Harnessing data and digital technology

Digital inclusion as key contributor to productivity

Ensuring all Australians are **digitally included**, particularly young people, is key if Australia is to enhance its productivity, particularly into the future. Participation in school and tertiary education in Australia today, pre-supposes access to technology and the development over time of the skills required to safely and effectively use this technology. These skills are also a pre-requisite for participation in the 21st century economy.

This is reinforced by the OECD's Learning Framework 2030 citing digital literacy as a **core competency** for future education.[1] The OECD's 2023 *Recommendation of the Council on Creating Better Opportunities for Young People* emphasises the importance of enabling young people to participate in an increasingly digitalised world and the need to:

- Equip young people with **digital skills** and problem-solving skills for the digital environment.
- Empower young people to engage **safely, healthily and responsibly** in the digital environment.[2]

The **Australian Digital Inclusion Index** (ADII)[3] identifies three key dimensions:

- Access
- Affordability and
- Digital Ability

ADII data shows groups recording greater levels of **digital exclusion** include those in the **lowest income quintile**, those who **did not complete secondary school**, low-income single adult households and those aged 75 years and older. The first two groups are particularly relevant to the work of The Smith Family. Of the close to 70,000 students (attending primary or secondary school or a tertiary institution) living in low-income families across Australia that The Smith Family supports on the long-term educational scholarship program, *Learning for Life,* **30 percent** are not **digitally included** – that is, they do not have a computer or laptop that is connected to the internet at home.

National research with low income families[4], in which The Smith Family was a partner, shows that low income families consider digital devices and connections as **essential**, including for education and life-long learning, but **affordability** is a major issue. Low income families are often choosing between digital connections and other essentials such as groceries. Household access to technology for these families is **often insufficient** for family needs, especially where there are multiple children. Families often experience **data poverty**. Many of the families in the research were mobile-only and chose pre-paid plans due to their flexibility, even though these often cost the family more when compared to fixed line connections.

[1] OECD 2018 *The Future of Education and Skills 2030* https://www.oecd.org/en/about/projects/future-of-education-and-skills-2030.html
[2] OECD 2023 *Recommendation of the Council on Creating Better Opportunities for Young People* https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0474
[3] https://www.digitalinclusionindex.org.au/
[4] Dezuanni, M., Osman, K., Foth, M., Kennedy, J., Marshall, A., McCosker, A., Mitchell, P., Notley, T., Mamalipurath, J., Mavoa, J. and Tucker, J. (2022). Advancing digital inclusion in low income Australian families: Interim findings report. QUT, Brisbane, Australia.

Research participants indicated that there is great variation in how **schools** provide technology for classroom use and how digital skills are taught, with significant **impacts on the learning outcomes** of low-income students. Australian data from the OECD's Programme for International Student Assessment (PISA) shows that 16 percent of students experiencing disadvantage attended schools where their principal indicated that **learning was hindered by a lack of digital resources**. This compares to only five percent of students from advantaged backgrounds.

The consequences of digital exclusion for young people are very significant – both in the short and longer-term. It impacts their capacity to fully participate in school and tertiary education and leaves them very vulnerable in terms of taking up employment opportunities in the future. This has significant consequences for Australia's productivity.

Digital skills acquisition

A core part of digital inclusion is digital ability. The most recent ICT NAPLAN data for students in Years 6 or 10[5] (2022), shows the extent of the challenge to ensure young Australians have "the ability to use ICT appropriately and safely to access, manage and evaluate information; develop new understandings; apply computational, design and systems thinking to create solutions; communicate and collaborate with others; and engage productively with emerging and future technologies".

In 2022, only 55 percent of Year 6 students and 46 percent of Year 10 students met the national ICT proficiency standard. The result for Year 10 was the lowest since assessments began in 2005. The NAPLAN ICT data also shows the equity dimension of digital ability:

- Less than 40 percent of Year 6 students from low socioeconomic backgrounds achieved the national standard compared to 68 percent of those from high socioeconomic backgrounds. The figures for Year 10 are less than 30 percent and 60 percent respectively.

This data indicates that efforts aimed at improving Australia's productivity need to include a focus on enhancing digital inclusion, particularly for young Australians experiencing disadvantage.

The opportunities and challenges of Artificial Intelligence

Recent work by Professor Lesley Loble and Dr Kelly Stephens[6] on **digital equity in education**, particularly as it relates to AI, is of relevance to efforts to improve productivity.

Their work notes:

> Digital literacy is a critical foundation for teachers' effective use of digital resources, including AI-enabled edtech, in the classroom. The expectation that teachers use information and communication technologies as part of their teaching toolkit was encoded in the Australian Teaching Standards over a decade ago, but the OECD's Teaching and Learning International Survey in 2018 found **that only two in five Australian teachers felt well prepared or better to use information and communication technologies for teaching** (Mitchell Institute 2020).

[5] Australian Curriculum, Assessment and Reporting Authority (2023), NAP–ICT Literacy 2022 Public Report, ACARA, Sydney.
[6] Loble L and Stephens K (2024) Securing digital equity in Australian education, University of Technology Sydney, doi:10.57956/rrpc-5708

The acceleration of artificial intelligence and generative AI in particular has underscored the **nexus of risk and potential in edtech**. A knowledge-rich curriculum, expertly delivered, is the mainstay of strong student outcomes. As edtech is increasingly a powerful mediator of the curriculum in classroom teaching and at home, it becomes a potentially **high-leverage but also high-stakes intervention** in this arena.

The risks of AI and edtech are **not borne equally** by students and schools. All the risks, if realised, will **amplify existing disadvantage**, including and especially the risk of doing nothing to address the equity dimensions.

Supporting increased digital inclusion for young Australians and low income families

The Smith Family holds that increasing the digital inclusion of young Australians experiencing disadvantage and low income families more broadly, should be a key focus of efforts aimed at increasing productivity. While the benefits to the economy will not be immediate, it is essential that they are taken now, in order to avoid greater challenges in the not-too-distant future. Achieving this will require a range of approaches and initiatives. The Smith Family is supportive of the following recommendations which draw on our experience and collaboration with a range of relevant organisations:

- Australian Digital Inclusion Alliance's (ADIA) position that **incentivising device re-use** within both Government and corporate sectors offers significant opportunities to address the challenge of digital exclusion experienced by many young people living in low-income families. This would also bring significant **environmental** benefits.
- WorkVentures' call for a **strategy on devices**, including a National Device Bank. We welcome the NSW Government's recent announcement that they will work with industry to pilot a NSW Device Bank to refurbish Government laptops for use by disadvantaged families and individuals. We would encourage the Productivity Commission to track progress and learnings from this pilot and how it could be expanded further.
- **Targeted investment** by Government to increase the **digital inclusion** of young people experiencing disadvantage. The Smith Family's experience through leveraging our strong cross-sectoral partnerships across the digital ecosystem, is that targeted and cost-effective Digital Inclusion initiatives can be delivered at a modest cost.
- ADIA's work in developing a **Digital Capability Framework**. This will allow a coordinated approach – both nationally and at a state level - to how organisations tailor support programs to build digital capability. As services increasingly go online, the Framework will provide common language to ensure online services are mapped with minimum capabilities in mind.
- ADIA's call for a coordinated approach across digital ability, making a link with **media literacy** to emphasise the delivery of key skills that empower people to engage appropriately and with confidence in the online environment.
- Professor Loble's recommendations to:
  - Establish a **Digital Equity Learning Guarantee** for all students that will provide free or low cost access to quality digital devices and connectivity to support disadvantaged students' learning, and additional resources to lift digital skills and AI literacy.
  - Expand the **safe and effective use of digital teaching and learning tools**, especially to improve outcomes for disadvantaged and special needs students, through professional learning opportunities and preservice teacher education.
- **System/service Fragmentation** - Our experience and that of other ADIA members is that while there are many positive initiatives and demonstrated successes, the

ecosystem is fragmented, with inefficiency, duplication and gaps in service delivery. Government has a critical role to play in supporting a stronger digital ecosystem. This will contribute to ensuring effort is effective, efficient, and equitable and that it draws on evidence around what does and does not work in this space.

Using data to improve student outcomes

The Smith Family would also note the strong potential that greater use of data can have for supporting improved **student education outcomes** and in turn productivity. By way of example, we have entered into **data sharing agreements** with **four state Education Departments** which gives our front-line team members, who work with students and families experiencing disadvantage, real-time access to a range of key educational data that the Departments hold on them. This includes individual level data such as school attendance, literacy and numeracy results, behavioural issues, school mobility and demographic characteristics, such as disability.

This is enabling our front-line team members to provide much more **timely** and **targeted** support when it is needed. This early intervention approach has the goal of ensuring challenges can be addressed, and student outcomes positively impacted in the most effective way.

Importantly **parent/carers** are extremely supportive of this approach. Such two way exchanges of data (ie The Smith Family sharing with the Department of Education that a student is on our program and the Department sharing data they hold on that student with us), requires **parental consent**. In all four jurisdictions, consent rates from parent/carers have been in the **mid 90 percent**, with parent/carers reasoning that we will use this data to better support their child's educational outcomes.