

SUBMISSION

Submission to the Department of Employment and Workplace Relations

Submission to the Future Delivery of Foundation Skills Training in Remote Australia consultation

13 February 2023

The Australian Academy of Technological Sciences and Engineering (ATSE) is a Learned Academy of independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia’s leading thinkers in applied science, technology and engineering, ATSE provides impartial, practical and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

ATSE welcomes the opportunity to respond to the Department of Employment and Workplace Relations’ discussion paper on foundation skills training in remote Australia. Boosting foundational skills is critical not only to uplift individuals and communities, but also to fill skills shortages within communities. We note that successful foundation skills programs will require dedicated resourcing for appropriate, on-country delivery as well as monitoring and evaluation. ATSE makes the following recommendations for consideration in the design of foundation skills training in remote Australia:

Recommendation 1: That the foundation skills remote program development is guided by a National Skills Taxonomy that is inclusive of Traditional Knowledge.

Recommendation 2: That the foundation skills remote program is designed to be compatible with lifelong learning initiatives including those outlined in the Employment White Paper.

Recommendation 3: That foundation skills program attainment is recorded and verified in a government-operated system.

Recommendation 4: That digital literacy is embedded into the design of foundation skills programs.

Recommendation 5: That the revitalisation of foundation skills programs includes plans for supporting infrastructure, including improving internet access to facilitate remote learning and use of chatbots to supplement in-person learning and teaching.

Recommendation 6: That the foundation skills program interfaces with Department of Education initiatives to increase the size of the remote specialist foundation skills teaching workforce.

Integrating foundation skills programs with a skills taxonomy

There is no common, comprehensive language for skills with accompanying analysis on skills supply and demand. This presents a challenge for individuals, employers, and training providers to articulate the skills they have and the skills they need. The Australian Government’s commitment to reinvigorate foundation skills programs, along with other commitments made as part of the Jobs and Skills Summit, are an opportunity to establish a National Skills Taxonomy, enabling these initiatives to be more effectively executed and communicated. ATSE’s [submission](#) to the Employment White Paper consultation recommends the development of a national skills taxonomy, building on the work of the Australian Skills Classification (ASC). A National Skills Taxonomy could be also used to guide program development for foundation skills, with enabling literacy, numeracy, and digital skills feeding into other skill trees. A National Skills Taxonomy also provides a common language for everyone to more readily assess if such skills are being developed.

A National Skills Taxonomy can also be inclusive of Traditional Knowledge, allowing Aboriginal and Torres Strait Islander learners to recognise the skills and associated career paths associated with Traditional Knowledge, including in science and innovation. The existing frameworks used in foundation skills programs (Australian Core Skills Framework and Digital Literacy Skills Framework) should be reconciled with this comprehensive national skills taxonomy. More broadly, a National Skills Taxonomy should also recognise competencies with Traditional Knowledge within and beyond STEM (science, technology, engineering and mathematics).

Learners should also be able to demonstrate their skills to potential employers through a generalist skills portfolio with inbuilt academic integrity measures, so it can be verified that the person receiving a credential is the person who acquired the skills. This should be managed through a trusted government-operated system, such as by expanding the existing *My eEquals* used for viewing and verifying tertiary credentials. A skills taxonomy can also be integrated with a skills portfolio to enable learners to identify potential career paths.

Recommendation 1: That the foundation skills remote program development is guided by a National Skills Taxonomy that is inclusive of Traditional Knowledge.

Delivering foundation skills in the context of lifelong learning

There are rapid changes to workforce needs in a decarbonising and digitalising economy, including in rural, regional and remote areas heavily dependent on changing industries such as agriculture and resource extraction. To support Australians to continue to engage with employment during this period of adaptation, there must be a shift to a culture of lifelong learning. It is anticipated that many workers will need to retrain and upskill throughout their careers. Foundation skills can be understood as not only critical for lifelong learning but also as part of a lifelong learning framework enabling greater workforce and societal participation. Foundation skills program content must be developed in congruence with other lifelong learning and employment initiatives, including any that may be put forward in the Australian Government's forthcoming Employment White Paper. Many Australians will remain engaged in employment past retirement age, and lifelong learning initiatives should be designed with this in mind including by recognising learners' skills and experience and supporting them with foundational skills development to continue contributing to their communities.

Recommendation 2: That the foundation skills remote program is designed to be compatible with lifelong learning initiatives, including those outlined in the Employment White Paper.

Delivering digital skills training

The digitisation of the economy has meant that digital skills are now needed for everything from retail, to manufacturing, to trade skills, to software engineering. Embedding digital skills within foundation training provides learners with a foundation for employment, with almost all jobs now requiring use of at least one technology-based tool (National Skills Commission 2021). Digital literacy must continue to be a component of foundation skills programs to enable learners to effectively participate in society and engage in employment.

In remote communities having access to the required staff is often a challenge. Improving internet access can increase capacity for teaching foundational skills remotely, including by distributing learning and teaching resources online, ensuring training can be delivered on-country. Internet access can also support the foundation skills teaching workforce to access professional development and improve their teaching practice. Regional, rural and remote areas do not have universal internet access and internet can be expensive and unreliable (Regional Telecommunications Independent Review Committee 2021). To effectively deliver remote learning, digital skills training, and enable application of these skills, urgent improvements must be made to internet accessibility. The revitalised foundation skills training program must interface with other policy areas to enable learners to participate and thrive. As recommended by ATSE's 2022 report *Our STEM Skilled Future – An Education Roadmap for an Innovative Workforce*, governments at all levels should explicitly link policies and strategies with a digital component to enable coordinated impact. State-level initiatives – such as the *New South Wales Connectivity Strategy* which coordinates state-level programs to increase internet and mobile connection coverage – can be leveraged for nation-

wide plans for rolling out foundational skills and other programs requiring digital access. Improving connectivity to enable local delivery of foundation skills programs should also be factored into the cost of successful program delivery. Internet accessibility can also improve outcomes for further education, enabling students to access distance education so they can remain close to their communities.

While ATSE strongly supports a focus on growing the skilled teaching workforce in regional and remote Australia, tools now exist to complement classroom teachers and in particular support schools with workforce challenges. With the integration of digital literacy foundational skills and expansion of internet access, there is an opportunity for foundation skills programs to leverage Artificial Intelligence (AI) chatbots as a supplementary measure. Chatbots have been deployed in education settings to instantly answer students' administrative and teaching and learning questions and can assist students with motivation (Okonkwo & Ade-Ibijola, 2021). Learners accessing foundation skills programs with an online component or supporting resources could benefit from the support of tailored chatbots to supplement their interactions with teachers.

Recommendation 4: That digital literacy is embedded into the design of foundation skills programs.

Recommendation 5: That the revitalisation of foundation skills programs includes plans for supporting infrastructure, including improving internet access to facilitate remote learning and use of chatbots to supplement in-person learning and teaching.

Developing the foundation skills teaching workforce

A skilled and well-resourced teaching workforce is required to deliver foundation skills programs. As identified by the Department of Employment and Workplace Relations' [discussion paper](#), this can be a challenge in remote areas, with specialist adult literacy teachers being key to program success. Where possible, the foundation skills teaching workforce should be drawn from local communities, with upskilling to increase capacity. This approach would also support the inclusion of culturally appropriate teaching in classrooms with a high percentage of Aboriginal and Torres Strait Islander students. This should include in-language instruction from multi-lingual educators to maximise accessibility for Aboriginal and Torres Strait Islander adult learners.

In the current environment of skills shortages across many sectors – including in school teaching and STEM (science, technology, engineering and mathematics) – long-term solutions are needed to deliver sufficient teaching capacity. This will require ensuring quality school education for remote students and access to post-secondary education, as these individuals may choose to work in their own communities once qualified. Principally, there must be support and fit-for-purpose policy for teaching of foundation skills, including literacy, numeracy, and digital skills, through the school system. However, students in regional, rural and remote areas do not have access to the same resources as their metropolitan peers, and this is reflected in academic attainment statistics (ACARA 2021). Interventions to increase participation in education must consider diversity and inclusion, noting additional barriers and targeting under-represented groups. As outlined in ATSE's report [Our STEM Skilled Future – An Education Roadmap for an Innovative Workforce](#), reforms are needed to increase the supply of qualified mathematics teachers in regional, rural and remote areas and ensure inclusive and culturally appropriate delivery of mathematics education (including in-language education) for Aboriginal and Torres Strait Islander students.

Additionally, regional students experience barriers to accessing higher education including lack of knowledge, unaffordability, living too far from campuses, and not being interested in the limited course offerings of regional universities (Stone, King & Ronan, 2022). It is imperative for governments to identify and address factors leading to poor engagement and completion rates in vocational and higher education in regional, rural, and remote Australia. This should include factors specific to Aboriginal and Torres Strait Islander people, including the loss of cultural barriers and support networks when moving for further

education, and limited visibility of role models. For long-term capacity to deliver foundation skills teaching, investment is required in delivering quality school education and career pipelines to rural, regional and remote students in fields needed for their communities. This includes building the supporting infrastructure to ensure rural, regional, and remote communities are attractive places to work and live, as well as resilient against extreme weather events.

Recommendation 6: That the foundation skills program interfaces with Department of Education initiatives to increase the size of the remote specialist foundation skills teaching workforce.

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