Technology-enabled learning in the foundation education sector

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Acknowledgements

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Executive Summary

The recent Covid-19 crisis has been a stark reminder of the existing gap between policy discourse and reality: a gap that already existed in the pre-COVID-19 era and negatively affects the learning of youth and adults, who have no or low literacy skills, and therefore, tend to face multiple disadvantages. During COVID-19, in many countries, adult literacy programmes were absent in the initial education response plans, so most adult literacy programmes that did exist were suspended, with just a few courses continuing virtually, through TV and radio, or in open air spaces (United Nations, n.d.).

Highlights

- Employers supported workplace learners with technology.
- Educator capability grew rapidly as an emergency response to delivery in the COVID-19 environment.
- With support, foundation-level learners can engage with and learn in the synchronous online environment.
- Learners' digital skills develop alongside literacy and numeracy skills as does a greater sense of social inclusion.
- There were high levels of whānau participation and flipped tuakana-teina relationships as younger people supported older family and/or workmates to use technology.

This research on technology-enabled learning in the foundation sector took place July-November 2020 in the COVID-19 environment. It was conducted through an evidence review, key informant interviews (3), provider survey (24 responses); case studies (4).

It explores the extent to which this form of learning is worthwhile for adult learners in non-formal, pre-qualification programmes and formal level 1 and 2 certificate programmes. The research looks at: what's happening nationally and internationally; feasible delivery approaches; barriers and enablers; and the benefits and drawbacks of technology-enabled delivery.

There is a sense of urgency required around this work. As COVID-19 settles into our lives and ways of working, and as we work around it, we need to recognise the impact it has on adult learners. Stories from Australia (ACAL, 2020, August) and New Zealand (Ace Aotearoa, 2020) show the challenges being faced by foundation-level learners who want to stay engaged with education. Many of these adults no longer have the supports they did and are not equipped with the skills required for new ways of living and working, e.g., home schooling children, being out of work and needing new skills for the job market, and having the ability to understand public health messages.

Technology-enabled learning

Technology-enabled learning is the term used in this research given that it is a 'catch-all' for the various approaches as shown on the continuum below.

Online / e-learning	Blended	Online classes
Asynchronous	Synchronous and Asynchronous	Synchronous
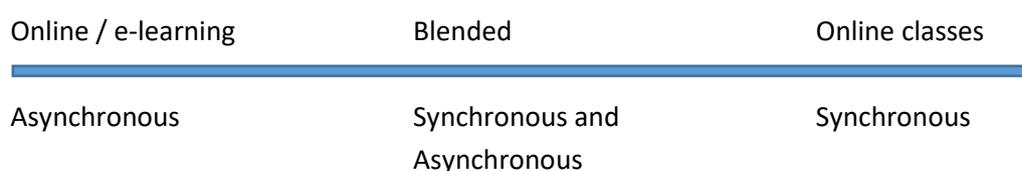
What's happening nationally and internationally

It is not clear how much technology-enabled delivery there is for foundation level learners internationally (Litster, Mallows, Morris, Redman, Benefield, & Grayson, 2014) and in Aotearoa New Zealand Guiney (2016) found little delivery in level 1 and 2 certificate programmes. Up until March 2020 the majority of programmes for foundation-level learners were delivered in face-to-face environments.

Developing adults' traditional literacy and numeracy skills has been at the forefront of countries' policy agendas, including New Zealand's. This has been the case as these skills are seen as underpinning digital literacy (Tertiary Education Commission, 2015). This thinking is confirmed by international research showing that the use of technology at work and in everyday life is contingent on a range of factors, including literacy skills (van Deursen & van Dijk, 2016; Wicht, Reder, & Lechner, 2019).

However, New Zealand is starting to give a focus to the development of digital literacy. The Department of Internal Affairs Te Tari Taiwhenua (2019, 2020) has a digital inclusion blue print and an action plan. The development of digital literacy skills is also included in the Tertiary Education Strategy (TES) (Ministry of Education, 2020).

Work is also underway internationally. The National Adult Literacy Agency (NALA) (2020) shows digital skills development is on Ireland's agenda and it is on Australia's with their newly developed digital skills framework (Australian Government, Department of Education, Skills and Employment, 2020). It is also being given a focus in the United Kingdom through the Digital skills Partnership. In addition, starting in 2020, lower skilled adults in the United Kingdom are being given access to funded digital skills programmes in the same way they have been for traditional literacy and numeracy programmes (Kis & Windisch, 2018).

Feasible delivery approaches

This research shows adult learners can undertake technology-enabled learning. In the main this is through synchronous online classes where they are taught how and supported to use the technology, and have interaction with tutors and their peers. During the COVID-19 lockdowns motivation, engagement and attendance at sessions was very high, but many learners needed support and wanted to get back to face-to-face learning once restrictions were lifted. Those who wished to stay in the online environment were those who appreciated flexible learning options, e.g., those living in provincial regions where there are no face-to-face opportunities; those who are in full time work and like the option of learning from their own homes in the evening.

From the education providers' perspective synchronous online classes are feasible. Those who participated in this research were quickly able to adapt what they were doing and come up to speed with the technology platforms, software, and resources that enabled them to deliver. This included delivering to learners who were together in classrooms in their workplaces (each with their own device) and to those who were learning in their own homes. The lessons learnt about the technology and the pedagogies will continue to be refined as providers look to build from what they did as an emergency response.

However the extent to which online, synchronous classes are viable in the long-term, for all adult learners is not clear. This research suggests it can be a tool in providers' delivery kits to be used to reach adults who prefer to learn in this way or adults who might otherwise not engage with learning. It has the advantage of widening the scope of what can providers can offer. But it comes with the

caveat that support for learners around the use of technology is required, along with learner-centred approaches that incorporate whanaungatanga and manaakitanga similar to those used in the face-to-face environment.

The literature and providers see a blended approach as being the most suitable way to go in the future. This enables support mechanisms to be in place through synchronous delivery and some autonomy and flexibility for learners in the asynchronous space.

Enablers

Enablers and barriers operate across the system: learners, educators, tertiary education organisations, and operational and strategic policy settings.

Learners

Starting with learners there are four factors at play: the agency they have over their learning; their literacy and numeracy skills; their digital literacy skills; and their access to technology.

Underpinning learners' willingness to engage in learning generally is their agency. Learners need to, "*believe* they can learn, that they can overcome difficulties, and that their *actions* are the primary contributor to success" (Whitten, 2020, p. 14). With technology-enabled learning as the only option available during lockdowns and with considerable support from educators, agency grew as learners realised they could, e.g., log on, undertake literacy and numeracy activities online, engage with others online. The "fear was taken away".

This research found that the synchronous online learning environment meant the traditional literacy skills were not the impediment to learning through technology that it was anticipated they might have been, although it was very challenging for learners with very low levels of English. It also shows digital skills developed alongside the content knowledge and skills. This left learners feeling more included at their workplaces, "we're in a Teams meeting", and in their home lives, and better placed to operate in everyday online environments.

Access to technology was mixed. Here learners in community settings found it challenging given that firstly, phones (which were stated as not being ideal) were their main learning devices and secondly devices (e.g., ipads) are often shared in families. Laptops were described as a luxury item with very few learners having these. Those learning in workplace settings were well-served in relation to technology. Here one employer purchased Chrome Books for 10 employees on a programme and other providers and employers accessed the Technology Access Fund for Learners (TAFL) to buy devices.

Access to data and the internet does not seem to have been the issue it was anticipated to be. But finding quiet learning spaces in home environments was challenging for many. The other challenge relates to learning as a social process. While those who learnt online in real classrooms had social interaction with peers, those in the virtual environments in their own homes missed the social interactions even though these were possible with tutors and in virtual breakout rooms with peers.

Education organisations, employers and educators

An important, but perhaps not surprising, finding is that educators are key. Technology-enabled learning requires educators to be familiar with the technology, content and pedagogy along with needing to develop relationships with learners and provide learning, technical and pastoral support for them. The support needs were high for these learners. In relation to technical support it was about getting learners familiar with how to log on to devices, how to use software, e.g., Zoom, Microsoft Teams, and how to use interactive online resources.

Building the capacity and capability to deliver happened apace as providers looked to keep learners engaged. Programme designers and educators were willing to come up to speed quickly in relation to pedagogies and technology, while also recognising the importance of relationships and interaction - online classes were not one way, teacher-student lectures. At the same time though, they were concerned about using technology, felt vulnerable and a bit out of their depth at the outset, "I was scared, I kid you not".

Educators' confidence and ability to in deliver in the online environment grew and they were supported by their organisations' systems and infrastructure and were given professional development that supported their capability building. Organisations willingness to invest in licences that allowed for online delivery showed their commitment to this.

The response developed by providers during the COVID-19 lockdowns show they have been innovative with the technology and connecting with learners. They may not have had the time to fully think through their pedagogical approaches but they can take this learning forward as they continue to consider how to better and more frequently use technology to reach and teach adult learners.

Where employers have been in a position to continue with programmes they have supported their employees through the provision of devices, funded by themselves or TAFL. They provided IT support so employees could log on and access the systems and access the systems required for learning and work.

Policy Settings
From a system perspective, strategic and operational policy mechanisms can support education organisations to provide technology-based solutions that reach learners. This may be a consideration under Objective 2, "barrier free access" in the Tertiary Education Strategy (Ministry of Education, 2020). This increases flexibility and accessibility and puts "education opportunities within reach for every learner." The other enabler from the Tertiary Education Strategy perspective is to recognise and support the capability development of the educator workforce.

During the national COVID-19 lockdown, the Technology Access Fund for Learners (TAFL) was an example of an enabling mechanism. The $20 million fund helped education organisations and employers to support learners' to access technology-enabled education. As the case studies show, this fund has been well received and appreciated by educators, employers, and learners.

Barriers
While there are barriers in terms of learner capacity, capability and access and with educator capacity, capability, pedagogical approaches and delivery models these, in the main appear to have been overcome through the emergency response generated in the COVID-19 environment. It remains to be seen whether this continues to be the case as we move from an emergency response to business as usual.

Value
The preparedness and ability of education organisations and educators (along with the willingness of employers to continue with training) meant foundation level learners had equitable access to learning in the same way their counterparts did in higher and vocational education settings. It also provided some of them with the flexibility to fit learning into and around work and family life.

While the research literature shows learners develop digital skills alongside traditional literacy and numeracy skills, the extent of skills growth is not known. However, one of the unforeseen outcomes from case studies in this research is the sense of social inclusion that has come from developing digital skills. For example, learners in workplaces have been given access to workplace systems that they have not previously had, they have email addresses, and they are now using technology outside of work.

Another unforeseen outcome seen in the case studies is the connection with whānau. Here, family members often helped learners with the technology, but learners also shared learning with family who, on occasions, joined learning sessions. While this was helped by lockdown and "kids hanging off the ceilings" which was challenging for some, it helped learners feel they are now part of a digital environment.

Conclusion

During COVID-19, technology-enabled learning at the foundation level provides the same access to learning that those in polytechnics and universities have as a matter of course. What's at stake here is equity and ensuring that foundation-level learners have the same access to education as their higher-level learning counterparts and subsequently the same opportunities for skill development. If this approach is not allowed for, "the poor get poorer and the rich get richer in terms of skills" (Whitten, 2020, September 8).

In spite of the challenges, education providers have quickly developed their capability to deliver in synchronous online learning environments that have enabled foundation-level learners to engage with learning during the COVID-19 lockdowns. In turn this has led adult learners, with quite a bit of support at the outset, to develop digital skills and some digital literacy, and to feel more socially included and better able to participate in work, community and whānau lives. It has shown that under supportive conditions, technology-enabled learning can work for these learners. However, a wider evidence base is needed to determine the extent of intermediate or longer-term outcomes. This is a small study and it remains to be seen whether the level of engagement – from providers and learners - will remain as high over the next few years.

Technology-enabled Learning in Foundation Level Programmes

> Our best estimate is that one in five people in New Zealand lack at least one of the four elements needed to be digitally included – motivation, access, skills or trust. The COVID-19 pandemic has further exposed the realities of the digital divide for New Zealanders who struggle to connect, communicate and get access to essential services. As the pandemic continues to exert social and economic pressure on New Zealanders, the challenges for digitally-excluded individuals and groups are likely to become more pronounced, with the impact of social inequality likely to be exacerbated. (Department of Internal Affairs Te Tari Taiwhenua, 2020)

Introduction

This research on technology-enabled learning in the foundation sector was conducted in the COVID-19 environment, July-November 2020. Broadly speaking this sector includes learners in non-formal, pre-qualification programmes, and those in formal level 1 and 2 certificate programmes. The purpose of the research is to explore the extent to which technology-enabled learning is viable for adult learners in these programmes and the value of it to them and their educators. This work is timely for a number of reasons:

- The impact of COVID-19 on learners and learning environments
- The impact of COVID-19 on providers' delivery models
- The need to know more about the nexus between digital skills/literacy and numeracy, and the capability of learners to undertake online learning
- The need to consider broadening the scope of literacy and numeracy to incorporate digital literacy as a 21st Century literacy.

It is not known how much technology-enabled delivery there is for foundation level learners in Aotearoa New Zealand. Research undertaken by the Ministry of Education (Guiney, 2016) shows little delivery of foundation level programmes (level 1 and 2 certificates) through technology. However there are pockets of it, for example, Open Polytechnic offers Certificates in Foundation Skills at levels 1 and 2, along with some level 2 vocational qualifications e.g., floristry, primary industries (Open Polytechnic, 2020).

Overall, the evidence review found very little research has been undertaken about foundation level learners and technology-enabled learning. Litster, Mallows, Morris, Redman, Benefield, and Grayson (2014) reported this and added that in relation to what there is, there is very little of high quality to inform the thinking around the value of this form of learning for adults in basic skills programmes.

> There is a continuing need for more extensive good quality research on the use of digital technologies to support adult literacy teaching, learning and assessment. In exploring how the use of digital technologies changes how we use literacies in different domains of our lives, we are still far from having an adequate evidence base which would allow us to draw policy conclusions (Hutchinson, 2016, p. 11).

Therefore this research aims to fill some of the gaps and go beyond the anecdotal claim that technology-enabled learning is not really suitable for foundation level learners and look for the value

that lies in this form of teaching and learning for them. Of note too, is the sense of urgency required around this work. As COVID-19 settles into our lives and ways of working, and as we work around it, we need to recognise the impact it has on adult learners. Stories from Australia (ACAL, 2020, August) and New Zealand (Ace Aotearoa, 2020) show the challenges being faced, firstly by foundation level learners who want to stay engaged with education, and secondly by adults who no longer have the supports they did and are not equipped with the skills required for new ways of living and working, e.g., home schooling children, being out of work and needing new skills for the job market, and having the ability to understand public health messages.

> For adults across our communities who have literacy levels that had just allowed them to cope, there is a strong possibility that the new demands of life without the usual support will make essential tasks inaccessible. Without the incidental support that teachers, libraries, community centres and face to face contacts such as friends, family and neighbours provide, everyday tasks become more problematic. Reading health information, filling in forms, participating in remote GP appointments, applying for jobs, working from home, online shopping, critically analysing online news, and other tasks many of us take for granted, now require new strategies for those who are not highly literate. What those strategies are is as yet unclear (ACAL, 2020, August).

Methodology

The key research question for this work is:

How worthwhile is technology-enabled learning in foundation level programmes?

The sub-questions are:

- What is happening nationally and internationally with technology-enabled learning for foundation level learners?
- What are feasible models for the delivery of technology-enabled learning in the foundation sector?
- What are the barriers and enablers to technology-enabled learning for foundation level learners?
- What are the benefits and drawbacks of technology-enabled learning for learners, providers, employers, and the TEC?

The research used a multi-method approach using four data collection methods:

- An evidence review
- Interviews with key sector informants (ACE Aotearoa; Rural Education Activities Programme (REAP); English Language Partners New Zealand (ELPNZ))
- An online survey of providers of foundation level programmes (mainly workplace literacy providers)
- Four case studies (mainly workplace literacy programmes)

A full description of the methodology is in Appendix One.

Definitions

Definitions are included at the start of this report given the "blurred boundaries" and fluidity in terms of the concepts, especially in relation to digital skills and digital literacy (Hadziristic, 2017;

International Federation of Library Associations (IFLA), 2017; Karanasios, Gekara, Snell, & Thomas, 2019) and in relation to the differing types of technology-enabled learning.

Digital skills, digital literacy, digital inclusion

Being literate and numerate in the 21st Century means being able to go beyond the traditional notions of being able to read, write and do maths to fully participate in society and needs to extend to be able to use everyday technology for learning and communicating (NALA, n.d.). UNESCO's (2018) definition of digital literacy is reasonably encompassing, but needs the addition of the idea of everyday life given that many of the connections we make with, for example, banks, shopping, travel, and government departments are now online.

> Digital literacy is the ability to access, manage, understand, integrate, communicate, evaluate and create information safely and appropriately through digital technologies for employment, decent jobs and entrepreneurship. It includes competences that are variously referred to as computer literacy, ICT literacy, information literacy and media literacy (UNESCO, 2018. p. 6).

Digital skills and digital literacy are often used interchangeably with no universally accepted definition. Gekara, Snell, Molla, Karanasios and Thomas (2019, p. 20) incorporate five areas:

- digital knowledge (theoretical comprehension and understanding)
- cognitive knowhow (involving the use of logical, intuitive, innovative and creative thinking in the digital space)
- practical knowhow (including the use of digital tools such as hardware, software, information and security systems)
- competence (ability to learn, adapt and apply digital knowledge in a new setting)
- 'digital' attitude (value and beliefs).

Bali (2016) notes the difference between digital skills and digital literacy with the former being about 'what and how' – which tools to use and how to use them, and the latter about choices people make in relation to why, when, who, and for whom. The International Federation of Library Associations (IFLA) (2017) talks about digital literacy as being about being able to use technology to its "fullest effect". Hadziristic (2017) takes this further and talks about digital literacy as being able to use and adapt to new technologies over time for social connection, learning, and work.

Digital inclusion, "refers to an outcome in which all New Zealanders have equitable opportunities to participate in society using digital technologies" (Digital Inclusion Research Group, 2017, p. 2). It is about more than just having access to devices and the internet (Mayer, 2016). It is also about having the skills to use technology.
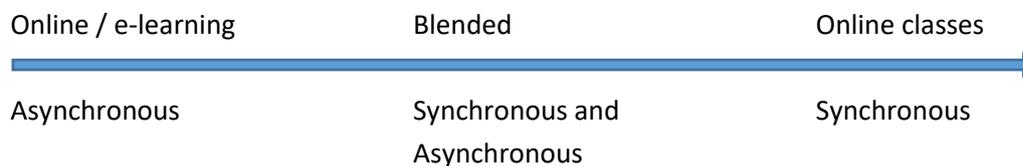
> At the moment a digitally included person, whānau or community has convenient, reliable access to affordable, accessible digital devices and an internet connection, and can confidently use them in their day-today life. This definition will change as technologies evolve (Department of Internal Affairs Te Tari Taiwhenua, 2019, p. 20).

Digital inclusion is built around four elements of, "motivation, access, skills and trust". Here access refers to accessibility, affordability, and connectivity, and trust of online safety, digital understanding, confidence and resilience. The challenges to digital inclusion include: socio economic factors; lack of accessibility; and low literacy levels (Department of Internal Affairs Te Tari Taiwhenua, 2019).

Definitions aside, what we know in 2020 is that interacting with and through technology permeates all aspects of our lives.

Technology-enabled learning

Technology-enabled learning happens in a range of ways that can be seen on a continuum with the literature describing the extent to which each of these modes substitutes, augments, modifies or redefines practice.

Online / e-learning	Blended	Online classes
Asynchronous	Synchronous and Asynchronous	Synchronous

> … digital technology can personalise learning, offering adults and young people greater control of what, how and when they learn, and how and when they are taught and assessed. Digital technology can be used to support peer-to-peer learning, emulating how adults learn in the workplace and it also has the power to attract adults who are unlikely to access more traditional classrooms (Hutchinson, 2016, p. 6).

Online / e-learning seem to be terms that are used interchangeably. It is learning that is supported and delivered through the use of ICT and computer related technologies (Fletcher, Nicholas, & Davis, 2010; Knightley, 2007; Shaw, Tham, Hogle & Koch, 2015).

Blended learning is the combination of web-based technologies and face-to-face teaching (Jeffrey, Milne, Suddaby, & Higgins, 2012; Lapuh Bele, & Rugelj, 2007; Yao, 2019). It is also referred to as hybrid learning. It can offer richer learning experiences than either node on their own (Jeffrey, et al., 2012; Lapuh Bele, & Rugelj, 2007). Nichols (2020, June 19) further defines blended learning as needing to be thought about in two ways, teacher-led and student-supported. Lapuh Bele and Rugelj, (2007) expand Nichols thinking by saying that blended learning can also be student-led.

> At its simplest, blended learning is the thoughtful integration of classroom face-to-face learning experiences with online learning experiences. There is considerable intuitive appeal to the concept of integrating the strengths of synchronous (face-to-face) and asynchronous (text-based Internet) learning activities. At the same time, there is considerable complexity in its implementation with the challenge of virtually limitless design possibilities and applicability to so many contexts (Li, Kay, & Markovich, 2018, p.3).

Online classrooms are those that happen in real time whereby the teacher and students interact with each other. This includes teacher-to-student interaction and student-to-student interaction in digital breakout rooms.

Context

We have reached a time when basic services are being delivered online, e.g., booking appointments, shopping, communication with children's schools and there is a need to learn about and through technology. We have also arrived at a time when digital skills are a requirement for work (Farrell, Newman, & Corbel, 2020; Kis, & Windisch, 2018). And, as noted above in the COVID-19 environment, there is now a greater reliance on technology for "work, education, and social connection" (Pham, 2020, June 2) along with the need to access a range of services and information about public health, and health and safety generally.

To date, Aotearoa New Zealand's approach for foundation-level learners has been to focus on traditional forms of literacy and numeracy as underpinning skills for digital literacy (Tertiary Education Commission, 2015). This thinking is confirmed by international research showing that the use of technology at work and in everyday life is contingent on a range of factors, including literacy skills (van Deursen & van Dijk, 2016; Wicht, Reder, & Lechner, 2019).

Yet Aotearoa New Zealand research notes, "Students whose bridging programmes neglect digital literacy are seriously disadvantaged in their communities, the work place and their engagement with society" (Anderson, 2017, p. 10). This is confirmed by international literature that reports, "… digital skills have become a fault line along which new social inequalities emerge" (Wicht et al., 2019).

New Zealanders' digital literacy skills

Around half the population will struggle with the technology demands of everyday life, learning and work

Knowing about adults' digital skills is important for gauging the extent to which they are equipped to undertake technology-enabled learning. In 2014/15 New Zealand participated in the OECD's Survey of Adult Skills, part of the OECD's Programme for the International Assessment of Adult Competencies (PIAAC). The findings were released in 2016 (Ministry of Education, & Ministry of Business Innovation and Employment (2016a; 2016b; 2016c) and OECD (2016). The key take outs for New Zealand in relation to this survey include:

- New Zealand scores above the OECD average in literacy, numeracy and problem solving in technology-rich environments (PS-TRE)
- Differences in skills proficiency related to age, gender, education and social background are less pronounced in New Zealand than in other countries but sharp ethnic differences exist, particularly for Māori and Pacific peoples
- New Zealand-born adults who speak English as a second language are over-represented among adults with low proficiency.

While the results are positive from a comparative perspective, 43 percent of adults are at level 2 and below for reading and 51 percent are at level 2 and below for numeracy. Whitten (2020, September 8) deems these people as high risk and vulnerable and they will struggle to learn online in unstructured and unsupported environments.

PS-TRE is one of the skills measured in PIAAC and, on a three level scale, New Zealand ranks fifth highest in the OECD (Ministry of Education, & Ministry of Business Innovation and Employment, 2016c). While it is not a proxy for digital skills (Hadziristic, 2017) it does indicate the level of skills New Zealanders have. The results are positive in terms of an international comparison but, based on the March 2020 Labour Market Statistics,[1] when cautiously extrapolated[2] to the workforce it translates to around 1,758,000 adults who can either:

- not use a computer
- or, at below level one, can do tasks that have well-defined problems and require the use of only one function in a generic computer program
- or, at level one, can complete tasks where the goal is stated and there is only a small number of steps (Ministry of Education, & Ministry of Business Innovation and Employment, 2016c).

Younger people (16-34 year olds) have higher PS-TRE skill levels than those in older age groups; those with higher levels of qualifications (Bachelors or higher) have higher levels of PS-TRE; and New Zealand Europeans have higher PS-TRE skill levels than Māori, Asian or Pacific peoples. Those working in utilities and construction; agriculture, forestry, fishing and mining; health care and social assistance; manufacturing; and wholesale and retail have the lowest PS-TRE skill levels (Ministry of Education, & Ministry of Business Innovation and Employment, 2016b).

Of note in the results is that higher skill levels in PS-TRE did not attract the same wage premium in 2016 as higher skills in either literacy or numeracy. The examples provided show $45,000 median earnings for a trades or technician worker with Level 1 PS-TRE skills and $56,000 median earnings for a manager with Level 3 skills. This compares to median income of $37,000 for those with low literacy and $60,000 for those with high literacy skills; and $36,400 for those with low numeracy and $67,000 for those with high numeracy skills (Ministry of Education, & Ministry of Business Innovation and Employment, 2016c)

What is being done about digital skills

Digital literacy is starting to be included in international policy agendas

One of the issues for the development of digital skills is that it does not seem to have been included in countries' adult education strategies (Iñiguez-Berrozpe, & Boeren, 2019). This thinking is confirmed by the OECD (2019) who found that in many of the 32 countries' policies they reviewed,

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[1] Stats NZ (2020). *Household labour force survey estimated working-age population: March 2020.* Accessed 4 August 2020 at https://www.stats.govt.nz/information-releases/household-labour-force-survey-estimated-working-age-population-march-2020-quarter
[2] In March 2020 New Zealand's working age population (15-70+) sits at 3,944,000. If the 65+ category is removed this brings the number down to 3,197,700. Although it does not completely align with the 16-65 age group in PIAAC, it is a close approximation and gives an indication of the numbers falling into the low skilled groups.

adult learning programmes are not preparing people for the changing skills demands of workplaces. They also highlight what is already known from PIAAC, that lower-skilled adults are less likely to receive training than those with higher skills.

However work is newly underway in some countries. The National Adult Literacy Agency (NALA) (2020) shows digital skills development is on Ireland's agenda, and it is also on the Australian agenda with their newly developed digital skills framework (Australian Government, Department of Education, Skills and Employment, 2020).[3] It is also being given a focus in the United Kingdom through the Digital skills Partnership.[4] In addition, starting in 2020, lower-skilled adults in the United Kingdom are being given access to funded digital skills programmes in the same way they have been for traditional literacy and numeracy programmes (Kis & Windisch, 2018).

Digital literary has not been on the adult literacy and numeracy agenda in Aotearoa New Zealand

Meanwhile New Zealand's, adult literacy and numeracy strategy has not been updated since 2015 and while it acknowledges the importance of digital literacy there is no workstream to support it (Tertiary Education Commission, 2015). But, development of digital literacy skills is included in the new Tertiary Education Strategy (TES) (Ministry of Education, 2020)

In the meantime, employers are wanting their workforces to be more digitally literate

Employers expect and want to have a digitally literate workforces which are increasingly becoming a requirement for doing business (NALA 2020). In Aotearoa New Zealand Workplace Literacy and Numeracy (WLN) funded programmes reach lower-skilled employees. This is important given research shows participating in adult education can lead to the development of digital skills (Iñiguez-Berrozpe, & Boeren, 2019) but these skills are then contingent on their use at home and work (Wicht et al., 2019).

Over the last two to three years there has been an increase in the number of employers wanting to have a digital component in their WLN funded programmes. This has come about as a result of firms wanting to digitise their processes (Alkema, 2020). These processes include, e.g., health and safety reporting, data collection, accessing the company intranet for pay slips, leave information etc. In 2018, over a quarter of 32 employers reported on the development of digital skills where programmes included learning about devices, applications, and software (Alkema & Murray, 2019). In 2019, employers were noting that improved digital skills means managers and administration staff are spending less time supporting employees to use digital devices and applications (Alkema & Murray, 2020).

The value of technology-enabled learning

- Widens flexibility and accessibility (generally and during COVID-19 in particular) and allows learners to develop literacy and numeracy skills alongside digital skills

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[3] This framework is only required to be used in programmes funded through the Foundation Skills for Your Future (FSFYF).
[4] More about the Digital Skills Partnership can be found here https://www.cedefop.europa.eu/en/news-and-press/news/united-kingdom-raising-digital-skill-level-through-partnerships An example of the type of programmes run through these partnerships can be found at *Weldmar Hospicecare: Digital Inclusion Project*. https://digitalskillspartnership.blog.gov.uk/2019/10/17/weldmar-hospicecare-digital-inclusion-project/

- Helps with social inclusion, but it is not clear the extent to which it might improve outcomes for learners

Technology-enabled learning enhances, supports and in some cases, replaces the face-to-face option

Across the literature it is clear technology-enabled learning enhances, supports and in some cases, replaces the face-to-face option. It has the advantage of widening accessibility for learners and developing their literacy and numeracy skills along with their digital literacy skills. Reviews of technology-enabled learning with adult learners at the foundation and vocational level show:

- they are satisfied with it and positive about the interactions with teachers (Shaw, 2015)
- they see technology as empowering. They like it because of the sense of autonomy it gives them over their learning; the social capital attached to it; and the way in which it opens up access to other online activities (ACE Aotearoa, 2020; Hutchinson, 2016; Litster, 2014)
- the flexibility provides the opportunity to juggle responsibilities and opens access (Alkema & Neal, 2020; Fletcher, 2010; Li et al., 2018; Litster et al., 2014)
- it provides the opportunity for learners who might be embarrassed by their poor basic skills to engage anonymously (Litster, 2014)
- learning with technology also helps to learn about technology and the combination helps with employability skills (Litster, 2014).

Not enough is known about the outcomes from technology-enabled learning

Overall the literature is less clear about the extent to which technology enabled learning improves outcomes for learners. Litster et al., (2014) note that while there is evidence of learner motivation and engagement, there is no evidence that outcomes improved as a result. This is also the case with the case studies in this research where it is too soon to determine medium-longer term outcomes for learners. However, it does help with learning opportunities and social inclusion. This has been borne out during COVID-19 where social connectedness has been enabled and occurred through online learning.

> Despite its challenges, remote program delivery can be successful. It allows organizations to potentially reach more people, especially those who face barriers to in-person programs or live in isolated communities. By offering remote learning, literacy practitioners can ensure their learners can continue developing their literacy skills outside the classroom, and even explore an entirely new set of skills (ABC Life Literacy Canada, 2020, July 6).

The finding about the lack of outcomes is supported by more recent research in Australia. Fraillon (2019) reports that while young peoples' access to digital devices has increased since 2005, that they are confident users of technology and recognise the importance of digital skills, there has been no increase in their information and communication skills.

Engagement has been high during COVID-19

While Litster et al., (2014) note there is a lack of robust evidence on retention rates, this looks to have changed during COVID-19 with foundation level educators noting strong retention (ABC Life Literacy Canada, 2020, July 6; ACE Aotearoa, 2020). Prior to COVID-19 continued engagement with learning online is reported as an issue (Peterson, 2013) with learners preferring the idea of blended

approaches (Jeffrey et al., 2012; Li et al, 2018). However, the response to using technology during lockdown, in Aotearoa New Zealand and internationally, has shown learners do engage when other options are not available. Using technology to learn became the means for social connectedness with learning as the driver and connectedness as an outcome. It will be interesting to note the extent to which engagement and subsequent retention is maintained once face-to-face learning returns as an option.

The case studies in Appendix Four show the extent of high engagement. The online classes run in workplaces had 100 percent attendance, and while attendance does not equal engagement the fact that some of the learners were connecting in the evenings after work shows the extent to which they valued the opportunity to learn.

> The first couple of sessions were good. They were all logging on – some in their garages, kids jumping off the ceilings. They were committed and engaged in a way that was unique and I put this down to the culture of Counties Power. (Tutor)

A range of pedagogical practices are required

The continuum of delivery from fully asynchronous to fully synchronous requires different pedagogical practices. But the literature indicates that relationships, development of connectedness to educators and other learners are key elements. This finding is supported in the case studies where tutors recognised the importance of whakawhanaungatanga, especially when people are coming new into programmes or in workplaces where employees are from different regions of Aotearoa New Zealand.

> Whakawhanaungatanga is still needed. I share about me and my journey and then go around the room in order on the screen. … I never ask for anything personal from them if I've not met them before, but I share something personal about me. (Tutor)

Litster et al., (2014) conclude that blended learning is the "most highly recommended" approach for foundation level learners. However they note that this is not based on robust studies and there have been no measure of outcomes in relation to technology-enabled delivery. It is also the approach recommended in the provider survey and the case studies.

This finding that blended learning is a sound approach is supported by Li et al., (2018) who report that foundation learners value the face-to-face interaction with tutors combined with the opportunity to study in their own time.

> With flexible online access and additional support to meet students' individual needs outside the classroom, the present findings confirm … that students can benefit from the extra resources and support provided by the blended learning environment … the online component allowed them to keep up with the work when they were not able to attend face-to-face (p. 17).

What it takes to learn with and through technology – the enablers

- There are four factors at play for foundation level learners in relation to technology-enabled learning: the agency they have over their learning; their literacy and numeracy skills; their digital literacy skills; and their access to technology.
- Learners also require interaction with their educators and their peers.

- Technology-enabled learning requires educators to be familiar with the technology, content and pedagogy along with needing to develop relationships with learners and provide learning, pastoral and technical support for them.
- Tertiary Education Organisations provide the systems and infrastructure and support the professional development of staff.
- Policy makers (Tertiary Education Commission and Ministry of Education) provide funding mechanisms that allow technology-enabled learning.

Enablers happen at each layer of the system – macro, meso and micro. Currently the direction has been set by central government through *The Digital Inclusion Blueprint* (Department of Internal Affairs Te Tari Taiwhenua, 2019). From an education perspective the direction has been set by the Tertiary Education Strategy (TES) (Ministry of Education, 2020.) where language, literacy and numeracy, along with digital literacy, are seen as important for education and employment.
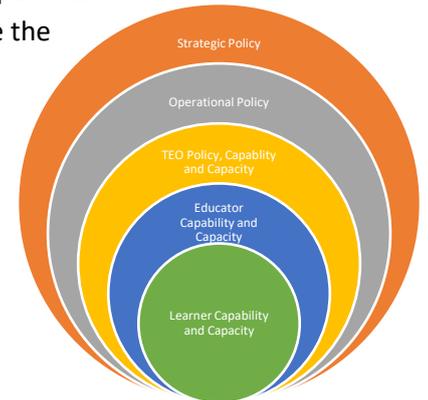
The learners

Provides flexibility and widens access

Providing learning opportunities through technology has a number of advantages that are well canvassed in the literature including, flexibility, convenience, and access to learning opportunities that mean learners have more choice about what, when and where they study (Alkema & Neal, 2019; Comer, Lenaghan, & Sengupta, 2015; Covelli, 2017; Knightley, 2007; Panda, 2020; Stone, 2017). However, the overall approach must be student-centred and Yates, Brindley-Richards and Thistoll, (2014, p. 39) stress the need to pay attention to, "the mix of the human and the technological".

Learners' disposition impacts on their ability to engage

Underneath the opportunities rest the enablers in terms of agency, beliefs about learning, dispositions, skills and knowledge learners bring. Of these Whitten (2020, p. 14) notes the importance of agency with learners needing to, "*believe* they can learn, that they can overcome difficulties, and that their *actions* are the primary contributor to success."

This starts with their motivation, readiness and sense of comfort adults have with learning through technology, the disposition they have towards this form of learning, and the extent to which they have a sense of self efficacy and agency over their learning (Comer et al., 2015; Gal, Grotlüschen, Tout & Kaiser, 2020; Hutchinson, 2016; Litster et al., 2014; Whitten, 2019; 2020). Litster et al., (2014) also note that learners need study skills, but that these can be taught though technology.

It is not clear the extent to which foundation level learners are ready for technology-enabled learning and herein lies an issue and maybe a contributor to Whitten's (2020, September 8) findings. He points out that online learning has not delivered for lower-skilled adults in the way it has for those with higher skills. He reports they participate less, learn less, struggle to transfer the learning, and don't retain as much knowledge as they do in face-to-face learning environments.

But the literature written in the COVID-19 environment shows the situation is changing. Adults are wanting to stay engaged with learning and this has helped or led them to use technology. For

example, second language learners at a Private Training Establishment with no previous experience of using technology for learning, "…have taken to Google Classroom like ducks to water and are already submitting work and making comments".

> Getting online can be a struggle for some older people with very limited access to data of technical know-how. I had two learners in their 70s with no skills or experience with online technology. Initially it seemed that neither would be able to join [classes], but both were really keen to learn how and persevered until they were successful … they know how to annotate worksheets and one has learned how to email me his homework. It's the first time he's ever sent an email! (ACE Aotearoa, 2020, p. 2).

Learners need interaction with others

Covelli (2017) notes learners need interaction with others – learners and teachers, given that online learning can be lonely. Li et al's., (2018) study found interaction with others was a critical factor for student learning. These interactions can happen synchronously, face-to-face online or by phone, or asynchronously through emails and discussion boards. These approaches acknowledge that learning is both a social and cognitive process (Hodges, Moore, Lockee, Trust, & Bond, 2020, March 27).

Interaction and connection between tutors and learners, and learners and learners was also noted in the case studies as being important. While learners were able to interact in online classrooms with tutors and also had the opportunity to interact with each other, they are reported as missing that casual interaction that happens in the face-to-face environment.

> The learners can't interact in the same way. They can't chat casually. For example, when they don't understand something they can't quickly ask the person sitting next to them. And they don't say it to the whole class online. They can do private chats, but it is not easy. (Programme Manager)

Learners need literacy, digital literacy skills and support

Learners also need literacy skills (Yates et al., 2014; Shaw et al., 2015; Stone, 2017), along with the digital skills and digital literacy or someone who can help them with the technology (Shaw et al., 2015). Those with lower levels of literacy are likely to need "intensive face-to-face support" (Fletcher et al., 2010). The provider survey shows that those most in need of support are those who are not familiar with the technology or have lower digital literacy skills. This is also borne out in the case studies where, for example, learners needed to be taught how to use the video conferencing service Zoom and the Microsoft Teams platform for their online classes.

> Logistically we were teaching them how to find Zoom and then use it remotely. Trying to get this across to someone who doesn't have English is hard. They have concerns about the app, about having an account. I spent a lot of time on the phone making sure everybody, including the teaching team, was happy and okay. (Tutor)

The provider survey showed support took different forms with the most common being on demand support by phone or email, followed by proactive support using these two mechanisms. Additional support is a common theme across the case study sites where it is described as "really, really important". This support included some of the tutors conducting pre-lesson phone calls and in workplaces IT staff setting up computers and helping learners to log on and get familiar with the platforms being used. In home settings whānau were often the support.

> A couple of older guys at the first session were struggling, they didn't know how their system operated … [they] couldn't figure it out. A child of theirs would come along, "Just go there Dad". (Tutor)

However, when circumstances dictate, the skills levels of adults are not as influential as previously thought, as shown in the example below.

> Youth employment programmes have often relied heavily on one-to-one coaching and individualised support … [so we] immediately recognised the barriers created by lockdown … [We shifted to video conferencing and] had six youth jump on our first call and three weeks later … the same six youths attend every Tuesday, Wednesday and Thursday (ACE Aotearoa, 2020, p. 5).

Which learners need support

The PIAAC data show those with no qualifications have the lowest levels of PS-TRE and many of those in foundation-level learning are likely to fall into this category. An American study (Horrigan, 2016) looked at adults' readiness to use technology for learning and found that while nearly half of them felt ready and /or prepared, these adults were younger, came from higher socio-economic groups and had higher education levels.

However, the age factor may not be as influential as some of the research shows. Litster et al., (2014) report that while we assume younger people are more interested using technology and have better digital skills than those in older age groups, this is not always the case. They cite a European study where elderly women engaged, "with enthusiasm and without reticence", which is in keeping with the learners in their 70s in the ACE Aotearoa (2020) example above.

In the survey providers say younger people are less likely to require support than their older counterparts and in the case studies there are examples of younger employees supporting older ones in a reverse of the usual tuakana-teina relationship in workplaces.

> The younger learners helped the older guys with the technology. Having used PCs at school the younger members of the class learnt their way around Chrome Books quickly. The more mature learners took this support really well. Culturally [Samoan] you usually see the elders in charge, but there was an appreciation that each had a role to play. (Operations Manager)

> … and these two kids have always been on phones and were very good at this and teaching the others. They formed a 'WhatsApp' group for the class and it is still active … it has carried on post-class. On Friday one guy loaded all the photos from the projects into a collage with music. (Tutor)

Markers such as age and qualifications are surface features that are easily seen and subsequently attributed to the difficulty people have in engaging with learning with / through technology. Beneath these features are the deeper concepts around learning dispositions, agency, and self-efficacy as reported by Whitten (2020) that impact on adults' persistence and drive to learn. There are sufficient indications in the literature and the case studies to say that, with support, adults of all ages can learn with technology when they start to recognise they can learn in this way and have the drive and motivation to do so. It also takes educators and employers to believe that adults can learn in this way.

> I was sceptical about learning via zoom – but the uptake and positivity was so good. It kind of just happened. We didn't need to do much more than set it up. (Operations Manager)

However, while COVID-19 was the extraordinary circumstance that provided the catalyst for adults to start engaging in this form of learning it remains to be seen whether this level of interest can be maintained.

> At the end the learners were probably a bit sick of it. They wanted to and were ready to go back to class. [It's hard] with family and kids running around. And they just wanted to have physical contact. (Tutor)

Literacy skills and digital literacy skills can develop at the same time

A key point in the literature is it is not about needing to develop traditional literacy and numeracy skills first and then digital skills. Litster et al., (2014, p. 61) point out adults can develop both skills at the same time. "Learning technology can be used to teach literacy skills, ICT skills and communication skills simultaneously, and this combination can increase learners' employability."

This finding is also supported in the case studies. In the synchronous environment once adults were supported to log on and became were familiar with the technology, they learnt the programme content while at the same time developed their digital skills for learning and their wider lives.

> During Covid they became very good at computers and even on their phones. They downloaded Zoom to their phones and also used Canva on their phones. .. They have Samoan family meetings on their phones and a Tongan lady used Canva to do the church bake sale church posters. They have taken it home. Their kids are really proud … (Tutor)

The educators

The educator is key

The overwhelming theme to come through in the literature and case studies is the educator is key – both for content and connection with learners. In higher education, Jeffrey et al., (2012) report the creation of learning experiences are the single most important determinant of the quality of the learning environment. Stone (2020, July 3; 2017) and Hughes (2020, June 19) emphasise the role of the educator in the engagement process. Here it is about getting to know the learner, making regular contact and offering relevant and timely support. They also report that when educators are engaging, learners are more likely to engage with each other.

> Ultimately, effective online education requires an investment in an ecosystem of learner supports, which take time to identify and build. Relative to other options simple online content delivery can be quick and inexpensive, but confusing this with robust online education is akin to confusing lectures with the totality of residential education (Hodges, et al., 2020, March 27).

The provider survey shows educators used a range of ways to contact learners. In the main this was on demand by phone, email or messaging. The case studies also show educators making considerable effort to support learners, especially at the outset when they were unsure about the technology. In workplace learning programmes, employers were able to provide IT support for their employees in the initial stages.

> The learners at the beginning were very, very wary. They never knew how to get online. The supervisor would come in to hook them on to the wifi. It worked well. Two-three sessions and they didn't need the supervisor – they learnt off each other. (Tutor)

In vocational settings Yates, et al., (2014) note the need for educators to provide prompt feedback to encourage engagement. They also talk about the need for educators to be proactive rather than waiting for learners to contact them and the need for educators to make connections between learners so they can share ideas. Li et al., (2018) say direct interaction and support are "critical" for learning.

Relationships and interaction are needed

Work in Aotearoa New Zealand highlights the importance of relationships for Māori learners, "If I don't have a connection with the student and even their whānau then I can't be an effective teacher" (Tiakiwai & Tiakiwai, 2010, p. 28). This research highlights the importance of whanaungatanga to Māori learners along with taking blended approaches that allow for kanohi ke te kanohi. This finding is supported by Yates et al., (2014) who also note the importance of connection to whānau and the need for connections between students, including a peer mentoring service.

What is perhaps important here is that while the mode of delivery is different in that it includes technology, the pedagogical and relational underpinnings do not differ for Māori and Pacific people. In their work with foundation learners in workplaces, Kerehoma, Alkema, Murray and Ripley (2019, p. 5) note

> … skilled facilitators operate in a holistic way that acknowledges employees' culture, their way of thinking, and their values. Space is provided for employees to bring their culture into the training room and allows for recognition that learning is about the cognitive, affective, and emotional domains - ako, manaakitanga, and wairuatanga.

The Metro Performance Glass case study in Appendix Four notes the importance of whakawhanaungatanga and manaakitanga - fostering relationships and promoting the wellbeing of the learners. The tutor in this workplace talks about the importance of connections, of providing space for learners to get to know each other, and of showing interest in employees' learning.

> It's not just about the technology – it's the manaaki. Creating manaaki is all about being in there with them, showing I have an interest in their journey. I show my mistakes – talking with mute on. We give things a go – we are all in this together. (Tutor)

Suni and Ulberg (2020, September 8) highlight the importance of connectivity and relationships for Pacific people in the online environment. This thinking is expanded by Hughes (2020, June 19) who reports that in online environments students of all ethnicities want good relationships and a sense of belonging.

> In Aotearoa New Zealand we have an obligation under the treaty. More than that we have an obligation to our learners to develop an environment in which they recognise themselves. The use of teo reo and tikanga Māori in our work could include the inclusion of pepeha and whakatauki and use of references in our work. To add to that sense of relationship we also have a range of tools to enable the building of community across our learners, encouraging learners to share ideas, form study groups and interact with other learners all adds to that sense of belonging.

This idea is further promoted by Khoo and Cowie (2010) who found that peer interaction and collaboration in post-graduate education led to greater knowledge and understanding than would t

have been possible by individuals on their own. These researchers also talk about the need for authentic contexts to engage learners. From a theoretical perspective this is pretty much a given in the adult education sector in that adults are engaging in learning that is relevant and engaging for them, and is learning that will help them to achieve their goals for learning, life and/or work.

Educators need to be familiar with technology

Underpinning educators' ability to make connections are their skills with technology. Nichols (2020, June 19) talks of the need for expertise across three areas – technology, pedagogy and content and acknowledges the challenge of being an expert in all three areas.

> As an educator you will have some proficiency across these. Most of it will likely be in the content knowledge area. You will also know enough to teach well and have enough technical knowledge to answer emails, use a management system, create slides and author your own website. To what extent can you go beyond this? I remember thinking making an effective and instructional video was straightforward until I had tried it. … Many of us are not the pedagogical or technological experts we think we are.

Literature written since the arrival of COVID-19 shows educators have quickly come up to speed with using technology (ACE Aotearoa, 2020) as the, "capacity to deliver was built on the fly" (Centre for Policy Development, 2020). The case studies reinforce this idea with one education provider likening it to "knitting a sock while wearing it".

> COVID lockdown forced me to be a teacher in a virtual classroom. It was going to happen, but I am better because of it. I know more and can do more. It's extended my confidence. Throw me anything, almost, and I can do it online. On a normal scale it would have taken much longer … we achieved it in less than that and had to grow, extend, change, adapt to what was happening. (Tutor)

> I did a lot of reading about technology-enabled learning – it's important for me to do this. I learnt about social presence and student-to-student relationships. The development of this is harder in an online environment. … [while it] enhances student teacher relationships, I'm not sure about student-to-student, although break out rooms can come close. (Tutor)

However, Hodges et al., (2020, March 27) warn that such emergency responses, while responding quickly to learner and organisation need, require further investigation. But in saying this, what has been set up provides a platform for further work and leaves educators and organisations in a better state of preparedness than they otherwise might have been.

From their COVID-19 experience ACE Aotearoa (2020) identify key practices to operating in the online environment that are underpinned by valuing, "people over platforms". These practices resonate with the research and include:

- focusing on the pedagogy, not the platform
- understanding learners – their capability to use and access to technology
- creating effective learning experiences that include knowing about online etiquette
- the importance of interaction with people, resources and activities
- giving yourself a break and recognising that delivering learning in this way is new.

Tertiary Education Organisations and Employers

Organisations need to have policies, systems and technology

In the main, Tertiary Education Organisations (TEOs) have been setting their own direction based on learner / employer / industry demand and getting on with the job and supporting their educators and learners to deliver and undertake learning with technology.

> The institution must create systems that are conducive to learning, teachers need to offer both academic and non-academic support, and students must be active learners who are willing to contribute (Yates et al, 2014, p. 32).

TEOs have responsibility for the frameworks, technology systems and the development of resources that are key to engaging learners. Here it is about well-designed resources that differ from those used in face-to-face teaching situations (Stone, 2020, July 3; 2017), it is about content and delivery designed specifically for online learning.

Given the challenge of needing expertise across three areas, organisations need to think about technology-enabled learning being delivered by a team with experts in each of the fields – technology, pedagogy, and content. As Nichols (2020, June 19) points out learning designers have a key role to play in defining pedagogy and that the key role to be played by teachers is their content knowledge.

> You need to know your institutional strategies for online teaching, the support services on offer, your fit as a teacher in terms of the overall student experience, you need to be aware of the opportunities and constraints that apply based on your formal role as a teacher, your appetite for transformation and the range for technological, pedagogical and content knowledge you bring to bear.

In response to COVID-19 providers have not really had time to think about fully formed strategies and policies and have developed these as they have gone along. In terms of technology, given that most of the delivery was synchronous, providers went with what was easy to access and used by learners. For example, Zoom was used in three of the case studies and Microsoft Teams in another given it was the platform used by the company. They then delivered much the same content as they would have in the face-to-face environment, albeit supported by online resources and activities.

In the workplace learning environment, employers took on considerable responsibility in terms of providing technology, or applying to the Technology Access fund for Learners (TAFL) so their employees could learn in the online environment. They also provided the IT support for things such as log-ons and familiarising employees with technology systems and work protocols for its use. This worked well where employees were on devices in classrooms in workplaces.

> There were capability issue with connecting. Lots and lots of ups and down, challenging situations, but it was great that they persevered. (HR Director)

TEOs need to invest in the professional development of educators

Getting educators knowing about and feeling comfortable with using technology requires investment in professional development. While this was the case pre-COVID-19 (Fletcher et al.,

2010; Hutchinson, 2016; Jeffrey et al., 2012) it is also the case in the COVID-19 environment where the shift to the online delivery has been a, "swift learning curve" (Galt, 2020, June 15). In the Aotearoa New Zealand context this has been a challenge that has been accepted.

> Two days prior to lockdown I had little insight into what the implications for tutoring would be … How to build the centrepoints of trust and rapport? How to structure the class? How best to support people online? … There was a LOT more admin and prep than I gave credit for. Everyone needed emails, calls, texts, links, reminders, more calls (ACE Aotearoa, 2020, p.4).

What is being talked about here is an investment in infrastructure and systems. In the COVID-19 environment many TEOs have been agile and switched to technology to provide temporary access to learning. However, Hodges et al., (2020, March 27) point out, while this has worked as a crisis response it is not sustainable in the longer term, where an investment in an ecosystem that supports student learning is required.

Professional development was key to supporting educators for the swift uptake of technology-enabled learning. This included a combination of centralised professional development as described in the English Language Partners and Edvance case studies in Appendix Four and educators undertaking their own learning through reading, and exploring and experimenting.

> My network helped. They did PD and put it into the *Slack* channel … little by little I discovered the collaborative approach and that the virtual classroom can be collaborative. … On the Zoom whiteboard you can get people to write stuff on it, you can share screens … I can write in a document and share my screen and they can see it. (Tutor)

The learning from the COVID-19 response needs to be taken into account

Nevertheless it will be important to take the learning from the quick responses forward. Here teachonline.ca (2020, April 22) reports that in Canada there are five key lessons which, in the main resonate with what has been stated above:

- technology cannot replace the educator and there is ongoing need for student support
- content on its own is not enough, educators need to find ways for students to engage meaningfully with it
- good instructional design matters and it is not simply about putting content online
- student-to-student interaction and self-study are important
- assessment can be challenging to do online.

The response developed by providers during the COVID-19 lockdown shows they have been innovative with the technology and connecting with learners. They may not have had the time to fully think through their pedagogical approaches but they can take this learning forward as they continue to consider how to better and more frequently use technology to reach adult learners.

> What we have learned has shaped how we will adapt in the future. More and more learners want quick and convenient access to classes. They want short courses that equip them with the skills they need to compete in the workplace; either to progress through to management positions or to seek new employment (ACE Aotearoa, 2020, p. 7).

Operational and Strategic Policy

At the macro level in the system the role of the Tertiary Education Commission (TEC) for operational policy and the Ministry of Education (MoE) for strategic policy is to enable, give permission to, and fund the sector to deliver foundation level programmes using technology. Current funding mechanisms favour face-to-face delivery in the foundation sector, but it might be timely to reconsider this in the light of the objectives in the Tertiary Education Strategy (Ministry of Education, 2020) and to build on what we know is possible in light of the use of technology during COVID-19.

Technology-enabled delivery would support and enable "barrier free access" which contributes to the overall achievement of Objective 2 of the Strategy. The other enabler from the Tertiary Education Strategy perspective is to recognise and support the capability development of the educator workforce. This helps to "incentivise and support TEOs to develop and strengthen teaching capability and excellence".

The Technology Access Fund for Learners (TAFL) is an example of an enabling mechanism. The $20 million fund helped TEOs to support learners' to access technology-enabled tertiary education and training. TEOs could use the funding for devices, internet connections, operating systems and technical support.[5] As the case studies show, this fund has been well received and appreciated by TEOs, employers and learners.

> It opened up an opportunity through COVID. We wouldn't have run classes … the need is there … .and it [the training programme] was a level of motivation in a difficult time … (Operations Manager)

> The learners are more adept and confident. It's great that some places got the laptops. We can now use them in the normal normal, not just the COVID normal. (Tutor)

The barriers to technology-enabled learning

- Learner capacity, capability and access, but this can be built with support
- Educator capacity, capability, pedagogical approaches and delivery models, but this can be built through professional development

The literature and the provider survey identify a range of barriers to delivering and using technology for teaching and learning. These barriers relate, in the main to learner motivation, capacity, capability and access; TEO capacity, capability, pedagogical approaches and delivery models; and to the policy settings / funding condition that allow for this type of delivery.

Learners' motivation, capacity, capability and access

Barriers for learners start with their capacity – the time they have to undertake study in and around their work, whānau and community lives. Then it is about access to technology and their skills – digital, literacy and numeracy, and independent study skills (Horrigan, 2016; Onah, n.d.; Yates et al.,

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[5] See https://www.tec.govt.nz/funding/funding-and-performance/funding/fund-finder/technology-access-fund-for-learners/

2014). Learners also like to have a face-to-face connection at some point in their study (Hughes, 2020, June 19; Jeffrey, 2012; Peterson, 2013; Stone, 2020, July 3; Yates et al., 2014).

Li et al., (2018) looked at a range of factors that impacted on blended learning for foundation level learners. They have mixed findings about age, with some of the research saying older people engaged more with asynchronous learning; other research that younger people did; and still other research that found age was not related to success in blended learning programmes. The same findings apply to gender.

However, what Li et al., (2018) do conclude is that those with lower education levels (those who did not complete high school) were less likely to engage in the asynchronous activities. The same applied to learners who had negative or interrupted education experiences or had learning and/or a physical disability, but those who require assistive technology rate online learning more highly than those who do not. Foundation learners are also reported to have low access to technology, lack confidence in its use, and avoid using it for learning.

The provider survey indicates that learners are not that competent, with providers saying around half their learners have 'enough skills to get by'. A bigger issue for foundation level learners is their lack of access to technology or access to data/wifi/internet. To a certain this was overcome by the TAFL fund and where workplaces provided the learning space. This issue was followed by learners' lack of digital literacy skills and this was able to be overcome in synchronous learning environments.

Nevertheless, the literature, the provider survey and the case studies show the barriers are not insurmountable. Learning in a synchronous, online environment is possible for many adult learners in the foundation sector.

> The often come in not that competent and build their skills making them have enough skills to get by. The idea is that they then continue to grow those skills in and outside of work. (Provider, survey)

Educators' capacity, capability and readiness

The capability and capacity of educators to deliver online has been highlighted during COVID-19 when providers had to switch to online approaches. This was particularly the case in the ACE sector.

> Staff having to learn how to use platforms, and how to facilitate sessions…; volunteer tutors not being confident with online delivery; not being able to access resources in the office; difficulty in accessing digital devices or mobile phones for learners; poor connectivity ; demands on the wifi at home, with multiple family members using the internet; the fact that online teaching is more demanding in terms of time; the difficulties in teaching practical skills online; difficulty in providing pastoral support on the phone; difficulties in assessing learner needs remotely … (ACE Aotearoa, 2020, p. 19)

An additional barrier in planned circumstances can be the resources and pedagogies used by education providers and the ways in which they are presented (Peterson 2013; Yates et al., 2014). Fraillion (2019) notes that in 2013, "computers were most commonly being used to access digital textbooks and workbooks, rather than provide dynamic, interactive pedagogical tools". Covelli (2017) points out the need for constructivist approaches that are learner-centered, interactive and collaborative. Nichols (2020, June 19) suggests shifts have been made in this area and the case

studies confirm that in terms of delivery during COVID-19, these were the approaches that were taken.

However, it not clear from this research the extent to which education providers are familiar with technology enabled pedagogies and how these work with foundation level learners. The findings from the provider survey suggest education providers may be more familiar with these pedagogies than might have been expected given that there had been little technology-enabled delivery to foundation level learners.

As with the barriers for leaners, the barriers for educators are not insurmountable. Their emergency response during COVID-19 lockdowns showed their willingness to learn about technology and how to use it for teaching and learning. It also highlighted the learner-centric approach taken by educators in the foundation sector.

Conclusion

This research shows foundation-level learners can engage with online learning. The literature points to observable barriers such as age, lower levels of qualifications, lower literacy, numeracy and digital skills, and lack of access to technology. But, what the literature does not get to is the unobservable and perhaps unknown factors related to the learners themselves and the extent to which they see themselves as agentic learners, capable of learning with and through technology.

Foundation-level learners have traditionally been conditioned to learn through transmissional pedagogic approaches whereby they're told how to solve a problem, rather than through a heuristic approach that allows them to discover solutions (Whitten, 2020). To a certain extent this was the approach taken in the case studies, but this was for expediency in relation to getting learners underway. Once learners were familiar the technology and in a synchronous environment they started to develop a sense of agency, a determination to continue to learn, and felt they were part of digital workforces and communities.

While the literature (Fletcher et al., 2010) notes learners need to be proficient with the technology in order to learn, this has been debunked by Li et al., (2018) and during the COVID-19 experience. ABC Life Literacy Canada (2020) shows while there has been hesitancy on the part of education providers to use technology as a delivery mechanism because of the access and skills of their learners, these have, to a certain extent been overcome when circumstances have determined that this is the only way forward for learning.

> Despite its challenges, remote program delivery can be successful. It allows organizations to potentially reach more people, especially those who face barriers to in-person programs or live in isolated communities. By offering remote learning, literacy practitioners can ensure their learners can continue developing their literacy skills outside the classroom, and even explore an entirely new set of skills.

The same thinking applies in the Aotearoa New Zealand context where ACE Aotearoa (2020) highlights the adaptability of organisations, educators, and learners in terms of the uptake of synchronous online learning. This finding is also supported in the case studies in Appendix Four.

In foundation education, as in all education, technology-enabled learning has the capacity to substitute, augment, modify, or redefine practice. In the case of COVID-19 the response has been 'redefining' whereby it has forced providers to modify their practice as a short-term solution. Building from this, educators need to continue to find innovative solutions to teaching foundation level learners.

It may be that the success of online learning in the ACE sector (ACE Aotearoa, 2020) during the COVID-19 lockdown can be attributed to the synchronous nature of the delivery and that personal connections were still able to be made with educators and other learners. This removed the sense of isolation often felt in online learning environments and firmly catered to the affective and emotional domains of the learning process. The challenge, and to a certain extent the unknown, is how to maintain engagement levels; how to ensure adults continue to develop their skills; how to give them the skills to further develop.

What we have learnt from this research is that, contrary to the anecdote that foundation level learners cannot learn through technology, these learners can engage with this learning mechanism when the need arises. We have also learnt that providers can quickly adapt their delivery models, but these will need refinement if delivery is to go beyond an emergency response to something fixed and complementary to face-to-face delivery.

During COVID-19, technology-enabled learning at the foundation level provides the same access to learning that those in polytechnics and universities have as a matter of course. What's at stake here is equity and ensuring that foundation level learners have the same access to education as their higher-level learning counterparts and subsequently the same opportunities for skill development. If this approach is not allowed for, "the poor get poorer and the rich get richer in terms of skills" (Whitten, 2020, September 8). Along with this comes the sense of belonging and inclusion felt by the foundation learners in workplaces as they access and use technology in workplaces, "We're in a Teams meeting".

Considerations for the future

While this research has provided answers to some of the questions we do need to know more about the outcomes. For example, during COVID-19 we have seen learners engage, but it is not just about being engaged, it is what happens a result of this engagement. In addition, we still need to know more about the nexus between digital skills/literacy and numeracy, and the capability of learners to undertake online learning in asynchronous environments. There are indications in the literature (van Deursen, 2016; Wicht, 2019) and in the case studies and provider survey that it may not be the issue it was thought to be.

In 2020 it is also timely to review the current focus on traditional literacy and numeracy given the work being undertaken on digital inclusion and the extent to which being able to operate in a digital world contributes to peoples' general wellbeing (Department of Internal Affairs Te Tari Taiwhenua, 2019), social connectedness (ABC Life Literacy Canada, 2020) and social and labour market inclusion (Iñiguez-Berrozpe, & Boeren, 2019). The Tertiary Education Strategy can act as an enabler to progress this.

With the right infrastructure, it's possible to rethink academic structures that have in many ways been unchanged since the Victorian period, and come out with options that are more inclusive and flexible. It won't be cheap, but … it may be the best investment we make (Marques, 2020, May 11).

References

ABC Life Literacy Canada. (2020, July 6) *Literacy groups learn to adapt to online program delivery*. [Blog Post]. Accessed 18 August 2020 at https://abclifeliteracy.ca/blog-posts/literacy-groups-learn-to-adapt-to-online-program-delivery/

ACAL. (2020, August). *ACLA Aug eNews.* Accessed 26 August 2020 at info@acal.edu.au

ACE Aotearoa. (2020). *Adult and community education newsletter.* Wellington: Author.

Alkema, A. (2020). Foundation Level Workplace Training Programmes. *Journal of Learning for Development –J4LD,* Vol 7(2), 218-232.

Alkema, A. & Murray, N. (2019). *Reach of workplace literacy and numeracy fund 2018 and impact of employer-led strand.* Wellington: Skills Highway.

Alkema, A. & Murray, N. (2020). *Reach of workplace literacy and numeracy fund 2019 and impact of employer-led strand.* Wellington: Skills Highway.

Alkema, A. & Neal, T. (2020). *ODL and workplace learning TVET programmes in New Zealand*. Burnaby, British Columbia: Commonwealth of Learning.

Anderson, H. (2017). *Designing the bridges: Highlights from Ako Aotearoa supported foundation bridging and LLN research projects.* Wellington: Ako Aotearoa.

Australian Government Department of Education, Skills and Employment. (2020). *Foundation skills for your future program: Digital literacy skills framework April 2020.* Accessed 18 August 2020 at https://docs.employment.gov.au/system/files/doc/other/digital_literacy_skills_framework_accessible.pdf

Bali, M. (2016). *Knowing the difference between digital skills and digital literacies, and teaching both.* [Blog Post]. International Literacy Association. Accessed 21 July 2020 at https://literacyworldwide.org/blog/literacy-now/2016/02/03/knowing-the-difference-between-digital-skills-and-digital-literacies-and-teaching-both

Centre for Policy Development. (2020). *Putting language in place: Improving the adult migrant English program.* Melbourne and Sydney: Author.

Comer, D., Lenaghan, J., & Sengupta, K. (2015). Factors that affect students' capacity to fulfil the role of online learner. *Journal of Education for Business*. Vol 90, 145-155.

Covelli, B. (2017). Online discussion boards: the practice of building community for adult learners. *The Journal of Continuing Higher Education.* Vol 65, 139–145, 2017 DOI: 10.1080/07377363.2017.1274616

Department of Internal Affairs Te Tari Taiwhenua. (2019). *The digital inclusion blueprint: Te mahere mō te whakaurunga matihiko.* Wellington: Author.

Department of Internal Affairs Te Tari Taiwhenua. (2020). *2020 digital inclusion action plan.* Accessed 29 October 2020 at https://www.digital.govt.nz/digital-government/digital-transformation/digital-inclusion/digital-inclusion-action-plans/2020-digital-inclusion-action-plan/

Diep, A., Zhu, C., Cocquyt, C., De Greef, M., Vo, M., & Vanwing, T. (2019). Adult learners' needs in online and blended learning. *Australian Journal of Adult Learning.* Vol 59 (2), 223-253.

Digital Inclusion Research Group. (2017). *Digital New Zealanders: The pulse of our nation – A report to MBIE and DIA.* Accessed 13 August 2020 at https://www.mbie.govt.nz/dmsdocument/3228-digital-new-zealanders-the-pulse-of-our-nation-pdf

Farrell, L., Newman, T. & Corbel, C. (2020). Literacy and the workplace revolution: a social view of literate work practices in Industry 4.0, *Discourse: Studies in the Cultural Politics of Education*, DOI: 10.1080/01596306.2020.1753016

Fletcher, J., Nicholas, K., & Davis, N. (2010). Supporting adults to address their literacy needs using e-learning. *Journal of Open, Flexible and Distance Learning.* Vol 15(1), 17–29.

Fraillon, J. (2019). *Digital literacy: Myths and realities.* Paper presented at the Australian Council *for* Educational Research Conference, August, 2019. Accessed 21 July 2020 at https://research.acer.edu.au/cgi/viewcontent.cgi?article=1357&context=research_conference

Gal, I., Grotlüschen, A., Tout, D., & Kaiser, G. (2020). Numeracy, adult education, and vulnerable adults: a critical view of a neglected field. *ZDM Mathematics Education*. Vol 52**,** 377–394. https://doi.org/10.1007/s11858-020-01155-9

Galt, J. (2020, June 15). Big CLD Blether. [Blog post]. Accessed 29 July 2020 at https://blogs.glowscotland.org.uk/glowblogs/eslb/category/cld/adult-learning/

Gekara, V, Snell, D, Molla, A, Karanasios, S., & Thomas, A. (2019). *Skilling the Australian workforce for the digital economy.* Adelaide: NCVER.

Guiney, P. (2016). *E-learning provision, participation and performance.* Wellington: Ministry of Education.

Hadziristic, T. (2017). *The state of digital literacy in Canada: A literature review.* Ottawa: Brookfield Institute for Innovation and Entrepreneurship.

Hodges, C., Moore, S., Lockee, B., Trust, T., & Bond, A. (2020, March 27). *The difference between emergency remote teaching and online learning.* EDUCAUSE. Accessed 26 August, 2020 at https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning

Horrigan, J. (2016, September 20). Digital Readiness Gaps. Internet & Technology. Accessed 18 August 2020 at https://www.pewresearch.org/internet/2016/09/20/digital-readiness-gaps/

Hughes, A. (2020, June 19). *Tertiary teaching online: pedagogy and practice.* [Webinar] Tertiary Education Commission. Accessed 18 August. 2020 at https://www.tec.govt.nz/assets/Publications-and-others/Webinars/Tertiary-teaching-online-pedagogy-and-practice-webinar-transcript-19-June-2020.pdf

Hutchinson, V. (2016). *Breaking barriers: Research report – using digital technologies for adult literacy teaching, learning and assessment.* Accessed 28 July 2020 at https://epale.ec.europa.eu/sites/default/files/using_digital_technology_for_adult_literacy.pdf

International Federation of Library Associations. (2017). *IFLA statement on digital literacy.* Accessed 26 August 2020 at https://www.ifla.org/publications/node/11586

Iñiguez-Berrozpe, T., Boeren, E. (2019). Twenty-First Century Skills for All: Adults and Problem Solving in Technology Rich Environments. *Tech Know Learn*. Accessed 18 August 2020. https://doi.org/10.1007/s10758-019-09403-y

Jeffrey, L., Milne, J., Suddaby, G., & Higgins, A. (2012). *Strategies for engaging learners in a blended environment.* Wellington: Ako Aotearoa.

Karanasios, S., Gekara, V., Snell, D., & Thomas, A. (2019). *Skilling the Australian workforce for the digital economy: Support document 1: a review of digital skills frameworks*. Adelaide: NCVER.

Kerehoma, C., Alkema, A., Murray, N., & Ripley, L. (2019). *Hīnātore: Empowering Māori and Pacific people through workplace learning.* Wellington: Ako Aotearoa.

Kis, V. & Windisch, H. (2018). Making skills transparent: Recognising vocational skills acquired through workbased learning. *OECD Education Working Papers*, No. 180, OECD Publishing, Paris. https://doi.org/10.1787/5830c400-en.

Knightley, W. (2007). Adult learners online: students' experiences of learning online. *Australian Journal of Adult Learning*. Vol 47 (2), 264-288.

Khoo, E. & Cowie, B. (2010). A framework for developing and implementing an online learning community. *Journal of Open, Flexible and Distance Learning.* Vol 15 (1), 47-59.

Lapuh Bele, J. & Rugelj, J. (2007). Blended learning - an opportunity to take the best of both worlds. *International Journal of Emerging Technologies in Learning (iJET).* Vol *2*(3). Accessed 5 August, 2020 at https://www.learntechlib.org/p/44913/.

Li, J., Kay, R., & Markovich, L. (2018). Student Attitudes Toward Blended Learning in Adult Literacy and Basic Skills College Programs. *Canadian Journal of Learning and Technology / La revue canadienne de l'apprentissage et de la technologie.* Vol 44(2).

Litster, J., Mallows, D., Morris, M., Redman, R., Benefield, P., & Grayson, H. (2014). *Learning technology in adult English, maths and ESOL/ELT provision: an evidence review.* BIS Research Paper Number 196. London: Department for Business, Innovation and Skills.

Marques, C. (2020, May 11). *Covid pandemic has given the world a great online learning experiment.* [Blog Post] The Print. Accessed 14 August, 2020 at https://theprint.in/opinion/covid-pandemic-has-given-the-world-a-great-online-learning-experiment/418818/

Mayer, D. (2016). *Exploring perspectives on adult language, literacy and numeracy.* Adelaide: NCVER.

Ministry of Education. (2020). *The statement of national education and learning priorities (NELP) and the tertiary education strategy (TES).* Wellington: Author. Accessed 19 November 2020 at https://www.education.govt.nz/our-work/overall-strategies-and-policies/the-statement-of-national-education-and-learning-priorities-nelp-and-the-tertiary-education-strategy-tes/

Ministry of Education, & Ministry of Business Innovation and Employment. (2016a). *Skills and Education: Survey of Adult Skills*. Wellington: Authors.

Ministry of Education, & Ministry of Business Innovation and Employment. (2016b). *Skills at Work: Survey of Adult Skills*. Wellington: Authors.

Ministry of Education, & Ministry of Business Innovation and Employment. (2016c). *Skills in New Zealand and Around the World: Survey of Adult Skills*. Wellington: Authors.

National Adult Literacy Agency (NALA). (n.d.).*Literacy and numeracy in Ireland.* Accessed 5 August 2020 at https://www.nala.ie/literacy-and-numeracy-in-ireland/

National Adult Literacy Agency (NALA). (2020). *Literacy now: The cost of unmet literacy, numeracy and digital skills needs in Ireland and why we need to act now.* Dublin: Author.

Nichols, M. (2020, June 19). *Tertiary teaching online: pedagogy and practice.* [Webinar] Tertiary Education Commission. Accessed 18 August 2020 at https://www.tec.govt.nz/assets/Publications-and-others/Webinars/Tertiary-teaching-online-pedagogy-and-practice-webinar-transcript-19-June-2020.pdf

OECD. (2016). *Skills Matter New Zealand*. http://www.oecd.org/skills/piaac/Skills-Matter-New-Zealand.pdf

OECD. (2019). *Getting skills right: Future-ready adult learning systems.* Paris: OECD Publishing. Accessed 18 August 2020 at https://doi.org/10.1787/9789264311756-en

Onah, D., Sinclair, J., & Boyatt, R. (n.d.). *Dropout rate of massive open online courses: Behavioural patterns.* The University of Warwick. Accessed 28 July 2020 at https://warwick.ac.uk/fac/sci/dcs/people/research/csrmaj/daniel_onah_edulearn14.pdf

Open Polytechnic: Kuratini Tuwhera. (2020). *Te-Pūrongo ā tau: Annual report 2019.* Lower Hutt: Author.

Panda, S. (2020). Furthering research and development in technology-enabled learning. *Journal of Learning for Development – JL4D.* Vol 7 (1), 1-4.

Pham, M. (2020, June, 2). *Beyond COVID-19: a summary of our advice to ministers.* Accessed 26 August 2020 at https://medium.com/@digitalcouncilnz/beyond-covid-19-a-summary-of-our-advice-to-ministers-1bd52e76a607

Peterson, R. (2013). *Why do students drop out of MOOCS?* Accessed 28 July, 2020 at https://www.nas.org/blogs/article/why_do_students_drop_out_of_moocs

Shaw, D., Tham, Y., Hogle, J., & Koch, J. (2015). Desire: a key factor for successful online GED adult learners. *Journal of Research and Practice for Adult Literacy, Secondary and Basic Education.* Vol 4 (1), 21-*35.*

Stone, C. (2020, July 3). *How to support and engage tertiary learners in an online environment.* [Webinar] Tertiary Education Commission. Accessed 18 August 2020 at https://www.tec.govt.nz/assets/Forms-templates-and-guides/Webinar-2-complete-set-of-QAs-for-website.pdf

Stone, C. (2017). Opportunity through online learning: Improving student access, participation and success in higher education (NCSEHE 2016 Equity Fellowship Final Report). Perth, Australia: Curtin University, National Centre for Student Equity in Higher Education. Accessed 18 August 2020 at https://www.ncsehe.edu.au/publications/opportunity-online-learning-improving-student-access- participation-success-higher-education/

Suni, P., & Ulberg, S. (2020, September 8). *Supporting vulnerable learners: Learner agency as a resilience factor in the Covid-19 crisis: Challenges and opportunities.* Accessed 15 September 2020 at https://www.youtube.com/watch?v=4olbdxbf5qU&feature=youtu.be&fbclid=IwAR2smwrErWgj1CYB4iLiHe7H2vHjiyyh3vitpEz99UtRljL7tBYZ6L9NP-w

Te Wānanga o Aotearoa. (2020, September 29). *Te Wānanga o Aotearoa covid withdrawal research.* Presentation to the Tertiary Education Commission.

Tiakiwai, SJ., & Tiakiwai, H. (2010). *A literature review focused on virtual learning environments (VLEs) and e-learning in the context of te reo Māori and kaupapa Māori education.* Wellington: Ministry of Education.

teachonline.ca. (2020, April 22). *Five key lessons learned from faculty and instructors moving their courses online as a result of the COVID-19 pandemic.* Accessed 2 September 2020 at https://teachonline.ca/tools-trends/five-key-lessons-learned-faculty-and-instructors-moving-their-courses-online-result-covid-19

Tertiary Education Commission. (2015). *Literacy and numeracy implementation strategy 2015-2019.* Wellington: Author.

UNESCO. (2018). A Global Framework of Reference on Digital Literacy Skills for Indicator 4.4.2, Information Paper No.51, UIS/2018/ICT/IP/51, http://uis.unesco.org/sites/default/files/documents/ip51-global-framework-reference-digital-literacy-skills-2018-en.pdf.

United Nations. (n.d.). *Literacy teaching and learning in the COVID-19 crisis and beyond.* Accessed 26 August, 2020 at https://www.un.org/en/observances/literacy-day

Van Deursen, AJ., & van Dijk, JA. (2016). Modeling traditional literacy, internet skills and internet usage: An empirical study. *Interacting with computers.* Vol 28 (1), 13-26.

Whitten, D. (2019). *Learner agency in adult literacy and numeracy.* Presentation to the Skills Highway Forum, Auckland, 4 December, 2019.

Whitten, D. (2020). *Learner agency in adult foundation-level education: Exploring adults' lifelong-learning capacity through the integration of learner agency, language, literacy and numeracy.* Wellington: Ako Aotearoa.

Whitten, D. (2020, September 8). *Supporting vulnerable learners: Learner agency as a resilience factor in the Covid-19 crisis: Challenges and opportunities.* Accessed 15 September 2020 at https://www.youtube.com/watch?v=4olbdxbf5qU&feature=youtu.be&fbclid=IwAR2smwrErWgj1CYB4iLiHe7H2vHjiyyh3vitpEz99UtRljL7tBYZ6L9NP-w

Wicht, A., Reder, S., & Lechner, C. (2019). *Sources of individual differences in adults' digital literacy skills.* Proceedings of the Weizenbaum conference 2019.

Yao, C. (2019). A case of Chinese adult learners' English acquisition in a blended learning environment. *Australian Journal of Adult Learning*. Vol 59 (1), 115-135.

Yates, A., Brindley-Richards, W., & Thistoll, T. (2014). Student engagement in distance-based vocational education. *Journal of Open, Flexible and Distance Learning, 18*(2), 29–43.

Appendix One: Methodology

Research Question

The key research question for this work is:

- How worthwhile is technology-enabled learning in foundation level programmes?

The sub-questions are:

- What is happening nationally and internationally with online learning for foundation level learners?
- What are feasible models for the delivery of online learning in the foundation sector?
- What are the barriers and enablers to online learning for foundation level learners?
- What are the benefits and drawbacks of online learning for learners, providers, employers, and the TEC?

Research Approach

The research used a multi-method approach using four data collection methods:

- An evidence review
- Interviews with key sector informants (ACE Aotearoa; Rural Education Activities Programme (REAP); English Language Partners New Zealand (ELPNZ))
- An online survey of providers of foundation level programmes (mainly workplace literacy providers)
- Four case studies (mainly workplace literacy programmes)

Evidence review

The research started with an evidence review of what is happening / has happened in New Zealand and overseas in countries such as Australia, England, Scotland, Ireland, countries involved with the European Literacy Policy Network (ELINET),[6] and the United States of America. These countries were selected given the tracking of their literacy and numeracy policies that has already been undertaken.[7] The evidence review included research, evaluations, policy and position statements, strategies, practice case studies, webinars and blogs.

The material was limited to that published over the last 10-15 years and available electronically. The subject range terms included, e.g., 'online learning', 'blended learning' 'digital literacy' with Boolean searches, e.g., related to types of learners, types of settings. Once sourced, each piece of literature was key-word-searched for information related to topic areas. Following this a snowball method was applied whereby the reference lists of publications were checked for additional sources.

Survey

The evidence review was used to inform a survey of providers who deliver programmes to foundation level learners (mainly in workplaces). It was run using the Survey Monkey platform. The purpose of the survey was to provide the opportunity to as many providers as possible for their input and subsequently capture a wider range of views than was possible in the case studies.

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[6] See https://elinet.pro/research/
[7] See https://www.skillshighway.govt.nz/sites/default/files/documents/International%20workplace%20literacy%20policy%20summary.pdf

On 23 September a weblink to the survey was sent to 59 providers on TEC's database of workplace literacy and numeracy providers. Three emails bounced. A link to the survey was also sent out in the ACE Aotearoa e-newsletter in early October 2020. In total 24 providers completed the survey. This low response rate means the findings of this survey are an indication of what is happening with technology-enabled learning in the foundations sector and with workplace literacy and numeracy programmes in particular.

Case Studies

Five organisations were asked to participate as case studies, with one failing to respond to the request. This was not followed up given the busy time that providers were having. A purposive (convenience) sampling approach was used in order to get different approaches to online learning (Cohen et al., 2000; Bamberger, Rugh & Mabry, 2006) with cases being selected on the basis they were willing to participate and in a position to answer the research questions (Yin, 2014).

The explanatory case study approach (Yin, 2014) was used. This explored "why" and "how" questions and allowed for explanation and description based on different perspectives and interpretations of the tertiary education organisations, employers, and learners (Merriam 1998; Yin, 2014).

The case studies were conducted in two ways. Two of the case studies were undertaken on work sites where there were interviews with employer representatives and education providers, along with interviews via Zoom with tutors. One case study was conducted at the provider's premises and supported with reports from the employer. The fourth case study was conducted via Zoom interviews and from written documentation. Sixteen interviewees participated in the data collection for the case studies.

Case Study Data Analysis

Given the explanatory nature of the studies, each case was analysed separately in a descriptive manner so that the story of each case could come through. This was followed by analysis at a cross-case level using Charmaz's (2006) constant comparative approach. This approach means looking across the cases to identify commonalities and differences in participants' thinking and experiences and then making a further comparison to the literature.

Ethics

The Tertiary Education Commission's Ethics Committee approved this research.

Strengths and limitations
- Strengths include:
  - The amount and variety of literature in the evidence review
  - The use of the evidence review to inform the survey and interview schedules
  - Validity that comes from having honest and rich data from participants
  - Data triangulation that comes from the different methods and different data sources.
- Limitations include:
  - The small number of case studies, along with the convenience sampling approach, and the low response rate in the survey means the findings are indicative rather than generalisable.

Methodology References

Bamberger, M., Rugh, J., & Mabry, L. (2006). *RealWorld evaluation: Working under budget, time, data, and political constraints.* Thousand Oaks, CA: Sage Publications Inc.

Charmaz, K. (2006). *Constructing grounded theory: A practical guide through qualitative analysis.* London: Sage Publications.

Cohen, L., Manion, L., & Morrison, K. (2000). *Research methods in education: 5th edition*. New York: RoutledgeFalmer.

Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass Inc.

Yin, R. (2014). *Case study research design and methods: Fifth edition*. Thousand Oaks CA: Sage Publications.

Appendix Two: Provider Survey Responses

This is a fundamental literacy and Covid19 has proved this even more. F2F is always great as connection is more natural but the world we now live in means that everyone must adapt to the reality and not get left behind. We have the adult teaching skills, passion and patience to empower learners to engage and to support employers to believe their employees have the ability to learn in this environment should it be necessary and build a resilient future proof workforce.

The survey process

This survey represents the views of 24 adult literacy and numeracy providers. On 23 September a weblink to the survey was sent to 59 providers on TEC's database of workplace literacy and numeracy providers. Three emails bounced. A link to the survey was also sent out in the ACE Aotearoa e-newsletter in early October 2020. In total 24 providers completed the survey. This low response rate means the findings of this survey are an indication of what is happening with technology-enabled learning in the foundation sector and with workplace literacy and numeracy programmes in particular.

Who answered the survey

The providers deliver programmes funded through Intensive Literacy and Numeracy (ILN) - 10; ILN ESOL – 4; Workplace Literacy and Numeracy (WLN) – 16; Adult and Community Education (ACE) – 9; and Student Assessment Component (SAC) – 9. Of the 19 who delivered technology enabled learning, 10 were using this approach pre-COVID-19.

Preparedness for delivery

Of the nine who started delivery during COVID-19, six said they were either 'somewhat' or 'very' prepared. However, in saying this the responses in Figure A2-1 below show all the providers were reasonably well-placed to deliver in this way.

Figure A2-1: State of preparedness to start delivery during COVID-19 (n=9)
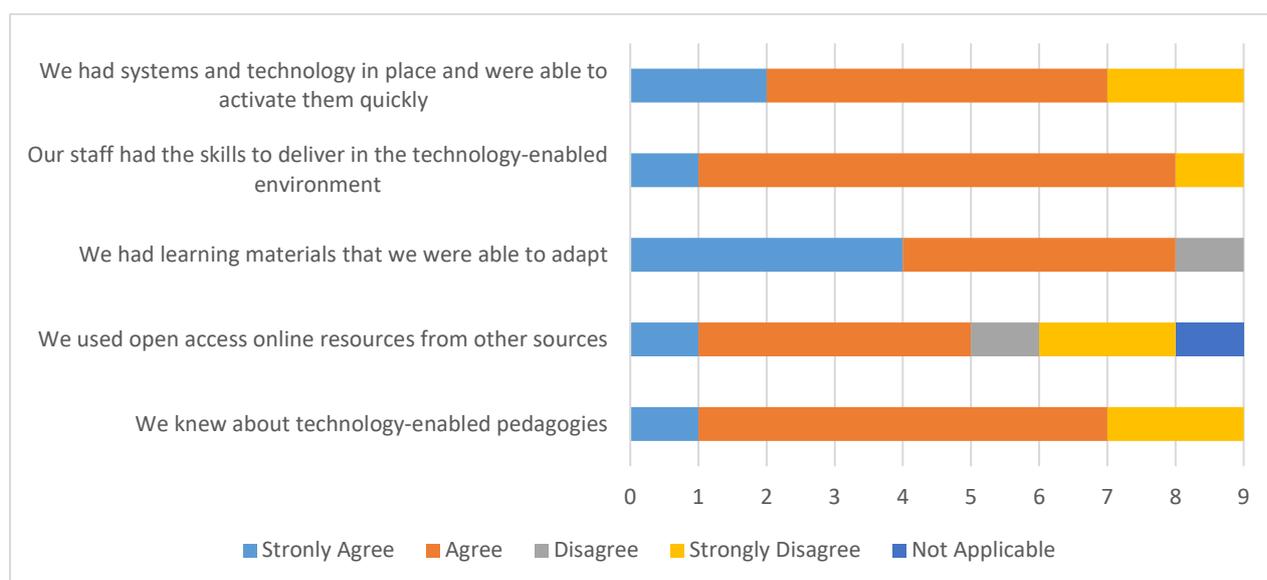
Of these nine, seven are looking to continue with technology-enabled delivery in the post COVID-19 environment given that it has "proved very worthwhile during Covid". The two who were more circumspect would like to continue, given the merits of a blended approach.

> We would like to where possible. Low level learners need the face to face delivery. A blended approach has proven acceptable.

> I would like to be able to deliver WLN through blended learning as I believe it has a lot of merits, however it is not in our delivery plan.

While numbers are small, a point of interest in A2-1 is teacher capability and familiarity with technology-enabled pedagogies are higher than the literature suggests they might be. It is also at odds with the data collected in the case studies and key informant interviews which suggests lower levels of readiness.

Rationale for delivery types

Providers (n=18) are using a mix of delivery options.

- Five are using synchronous online classes only
- Thirteen are using a blended approach
- Two are using all three approaches – synchronous, asynchronous, and blended.

Providers' rationale for using technology-enabled learning is shown in the figure below.

Figure A2-2: Rationale for technology-enabled learning (n=18)
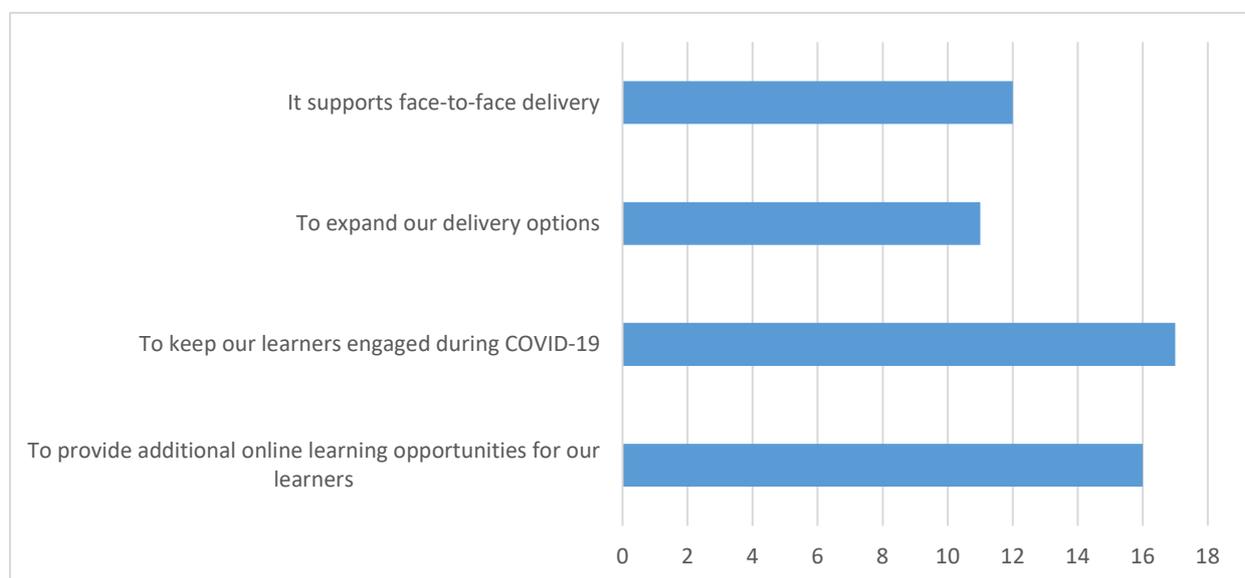
Of note in these responses is the hint of providers' learner-centric thinking. Evidence of this is also provided in their comments.

> We have known for a long time that empowering learners to be competent and confident using technology is fundamental to a resilient workforce. We take the fear away and give them the chance regularly to learn (and practise) new skills.

At the time of lockdown we provided technology enabled programmes to 'keep learners engaged during COVID-19'. However we very quickly realised the enormous benefits to learners (because they told us about them). Some learners have difficulty getting to class regularly due to family care responsibilities …, circumstances (e.g. only has transport for half a week …; or someone who works shifts and cannot get to every session ... now they can join another session at a different time) and perhaps the biggest win is areas where there is not a big enough cohort of learners to start a class but by delivering on line we can have learners from all across New Zealand in a class. … We have learners from really remote areas now joining …

Learners' access to technology

Just under half the providers (7) thought most of their learners had access to technology that is suitable for learning in terms of devices and connectivity. Over half (10) thought this was the case for some of their learners with only one saying this was the case for a few. Five providers commented on access with the key point being about devices which, as is borne out in the key informant interviews, is usually a phone which is not that suitable as a learning device.

Connectivity an issue with many learners in rural communities. Also access to appropriate devices can be a barrier especially for whānau who do not have much discretionary spend available to them.

However, as the comment below shows and this is also borne out in the key informant interviews, the recent literature and the case studies, that with determination and persistence learners have coped with learning using technology

[Over 2000 foundation level learners] accessed technology enabled classes during lockdown and many have continued post lockdown (and again in the second Auckland lockdown). That represented around 53% of our learners who were enrolled at the start of lockdown. The majority of our learners were low level - they did incredibly well not only getting online but also how they learned online …

Learners' digital competence

While there are some issues around access, the digital competence of learners seems to be more of an issue. Here no one thought their learners were very competent, just over half (11) thought learners 'had enough skills to get by' and seven thought learners were not that competent. A thread in the comments was that the learning programme provided the opportunity to teach learners about the technology so that they could learn with it.

They often come in not that competent and build their skills making them have enough skills to get by. The idea is that they then continue on to grow those skills in and outside of work.

We keep the digital component light - i.e. they are in small classes with a teacher and a lot of face time either in small groups (using break out rooms) or learning together (teacher using powerpoints and interactive learning processes). Some teachers with more advanced learners are loading work to padlets etc. which learners also access. Some learners were not very competent but with the help of family and the teachers they got going and joined class.

In keeping with the comments about competence levels, 10 providers had to support 'some' of their learners and eight had to provide support for 'all' of their learners. Those who need support fall into a variety of categories as shown in Figure A2-3 below.

**Figure A2-3: Who needs support to learn with technology (n=18)**
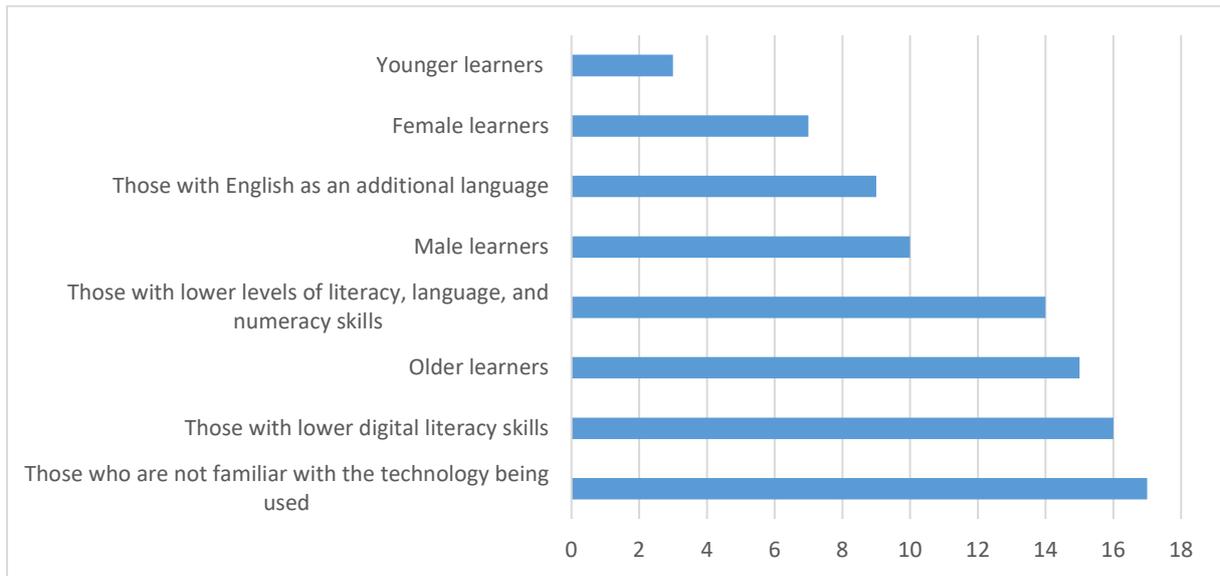
That fewer younger learners require support is in keeping with the literature which shows younger people are more technically savvy than their older counterparts. However, the literature also shows that while they are more technically savvy this does not necessarily mean they are better able to learn in this way.

Support for learners

The literature and the case studies show most learners need support. Providers do this in a number of ways as shown in A2-4.

Figure A2-4: Support for learning (n=18)
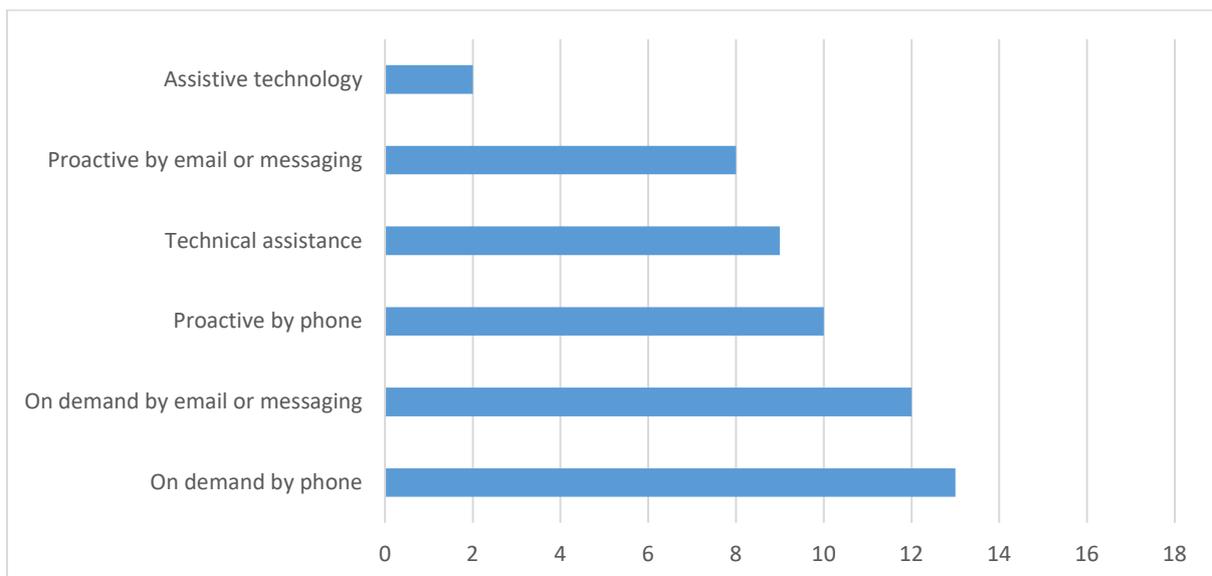
Of note is the slightly larger number of responses related to 'on demand' than to proactive support. It is not clear from this work the extent to which this matters for persistent and resilient learners, but it is likely to make a difference for those who do not feel comfortable and consequently do not

seek support. One provider noted support provided by family members and this finding is also shown in the case studies and key informant interviews.

> Family members supported other family members to get online. They were an amazing source of help … The family members were often in contact with the teachers until the person got online. …

Learners' attitudes

Figure A2-5 shows providers think learners are more positive about blended approaches to learning. This finding is supported by the literature and by providers' comments.

> It needs to be supported with face-to-face (synchronous or in person). Asynchronous tools have proven worthwhile if blended with synchronous delivery. We need to provide devices. It is not a quick fix - it is a supporting educational tool.

> I think, if all tutors were trained in how to deliver blended learning, in ways that supports engagement, it could be a really effective way to deliver WLN. I feel it requires more of a commitment from the learner as they need to do some of it outside the work hours. The lessons often feel more personal then too.

Figure A2-5: Attitude towards technology-enabled learning (n=18)
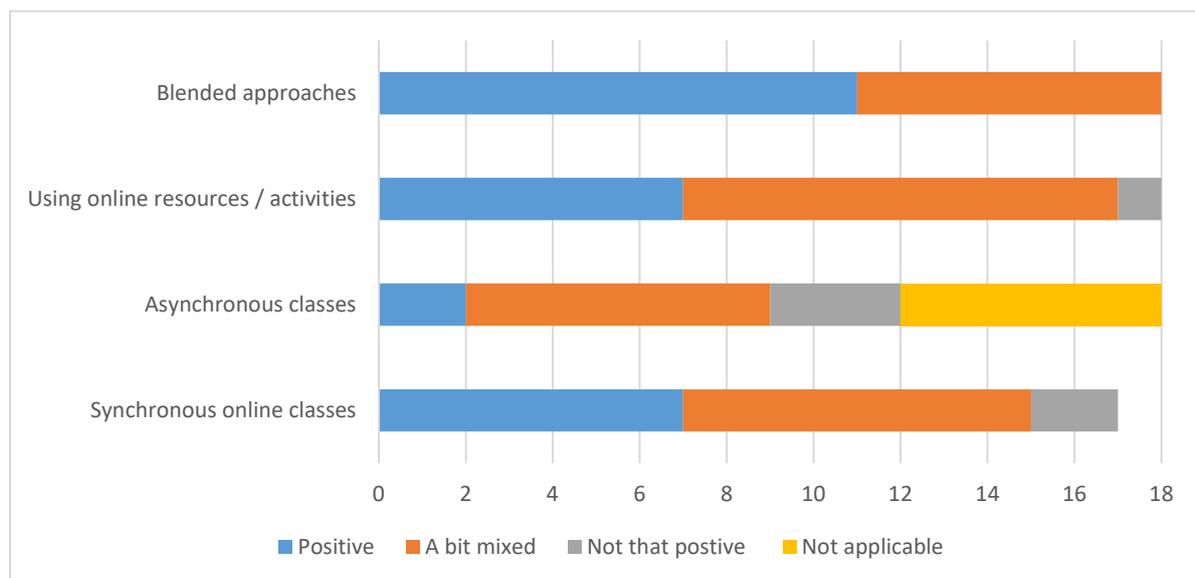
In relation to online resources, one provider noted,

> Animated and interactive online resources offer flexible options to help engage and support learners with a wide range of different abilities.

Overall providers feel that learner engagement and retention in technology-enabled programmes is good. However they do expect that this might taper off in a post COVID-19 environment.

Advantages of technology-enabled learning

Providers see a range of advantages associated with this form of teaching and learning as shown in Figure A2-6. Again, while the numbers are small, the pattern is interesting. In keeping with the

literature, the strongest advantages relate to flexibility in terms of access and time and the additional learning opportunities it provides.

Figure A2-6: Advantages of technology-enabled learning (N=24)
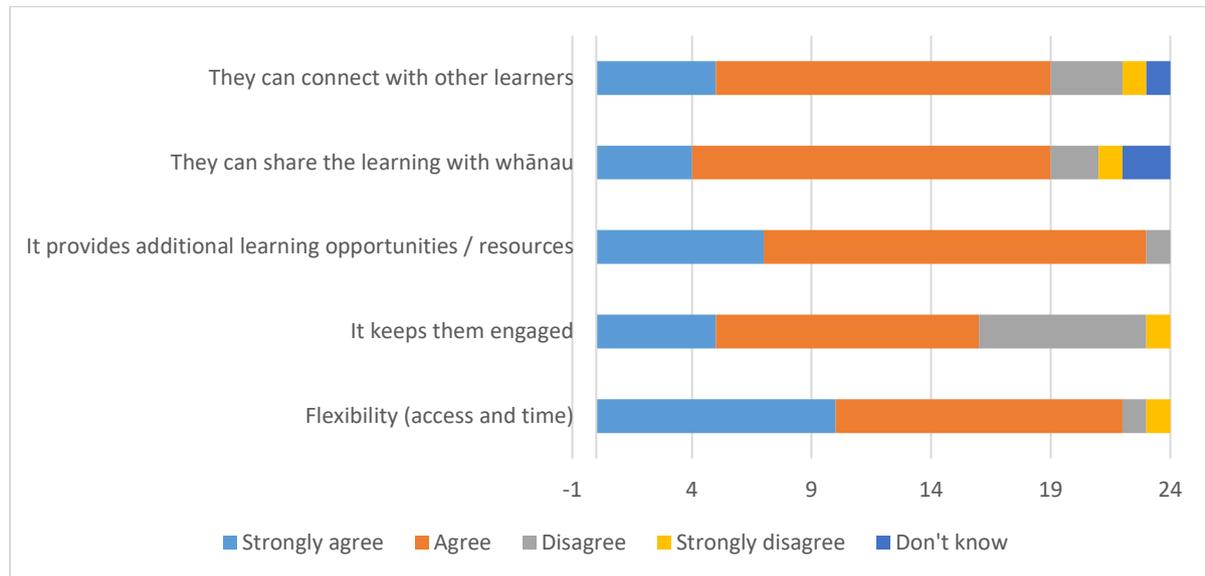
The least advantageous aspect relates to engagement where a third of the providers disagree with the idea that this form of learning is engaging. This is in keeping with providers other comments where around half of them (13) say their learners were positive, but needed support to stay engaged. And five thought their learners had not really engaged with it as they either did not have the skills or the access to technology.

> Those who can engage do and love it, those who don't I help them learn so they can participate online but it is not the majority of how WLN is fun for us we do more face to face. Anything else is over and above unless covid.

> … Those that can access it were by and large motivated by it and really liked it. Some needed support to get on and participate but engagement with the learning and the technology was high (small groups helped). 47% of our learners could not engage because they did not have technology (main reason) or the skills to use it - this is something that can and should be addressed to provide equity of access for foundation level learners (targeting the isolated first of all).

> Our learners prefer to learn in a face to face environment and they also miss the social interaction of other young people - they also like getting away from their home environment as many live in low socio economic situations and need to have time away from that.

> There is a wide variety of responses. Some are comfortable with cellphone technology and fb but their literacy skills and digital skills limit the extent of engagement on other platforms such as google docs etc.. Several have limited wifi/no wifi so we use the local library if we are not in their workplace. In workplaces where devices are provided many are too unfamiliar with the digital process to engage if at all. It causes great stress.

On the flip side of advantages are the drawbacks as shown in figure A2-7. In keeping with findings described above it is not surprising that access and skills are the key aspects that are seen as

drawbacks. The strong response to lack of social connection to others reinforces the idea of learning as a social process. It is also in keeping with the case studies where some learners were really keen to return to face-to-face classrooms post lockdown.

> I spent a lot of time keeping in touch and guiding them by phone text and zoom if family were there to help them it was hard work but worth it. Not all had access to internet or device at home.

> Once lockdown was over some learners were very keen to get back to class and to see each other in person. For others this was not a priority. However we know that with low level learners the best form of learning for longer periods of time is def face to face. For these learners though an opportunity for some in-person learning and some online learning is a great option.

Figure A2-7: Drawbacks of technology-enabled learning (N=24)
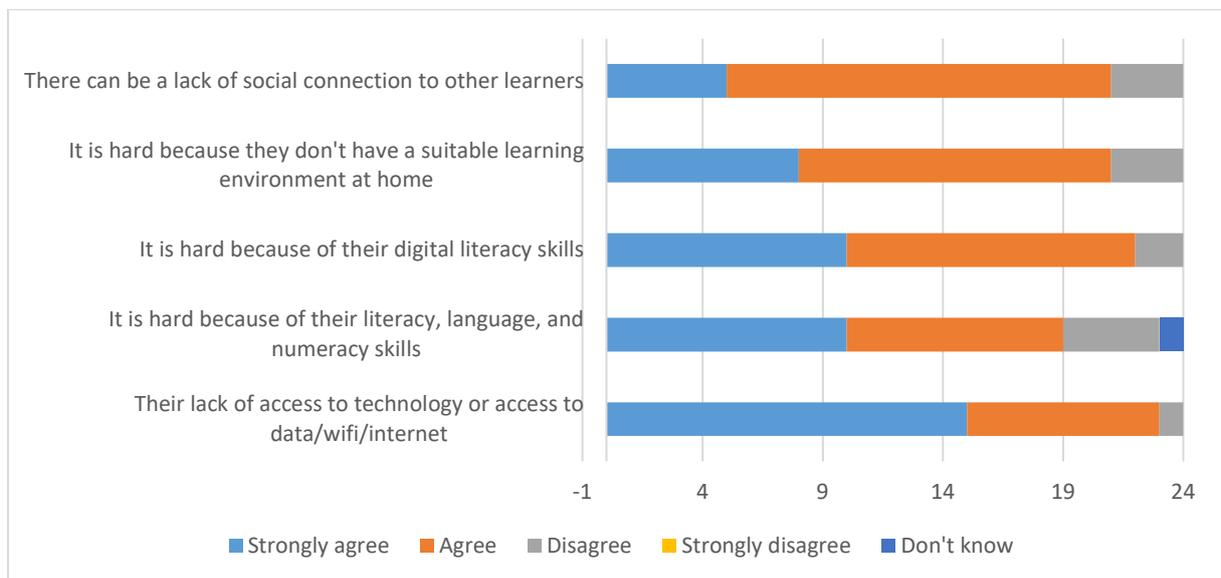
The literature identifies a range of factors associated with the success of technology-enabled learning and the providers' response shows they agree with these. As Figure A2-8 shows the strongest success factors relate to tutors' capability and support and learners' self-efficacy, self-determination and/or regulation. These the same factors as in the face-to-face environment.

Figure A2-8: Factors contributing to success (N=24)
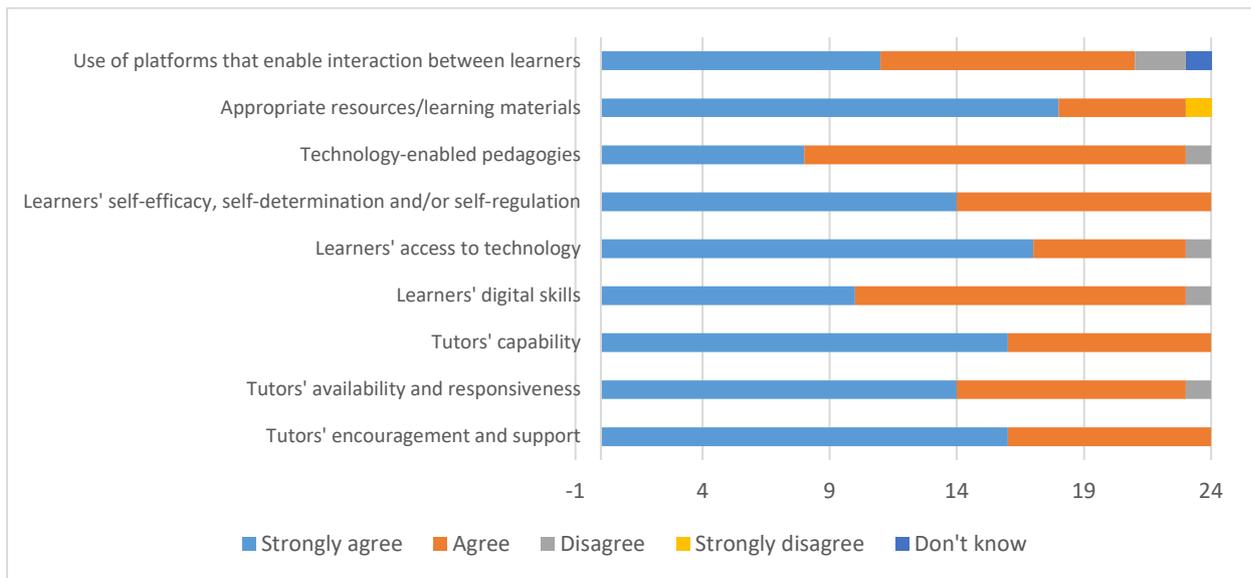
Providers who don't use technology-enabled learning

Six providers do not deliver technology-enabled learning and have a variety of reasons for not doing so. While the numbers are very small (6) the reasons, in the main, relate to digital access and digital skills. One provider gave an 'other' reason as being they prefer face-to-face teaching. All these providers deliver WLN and includes ITPs (2) and PTEs (4). The comments hint at the reasons for this which relate to preparedness, employers being too busy to have training, and the funding conditions. Of note in this figure is that providers do not think do not think staff capability prevents them from offering technology-enabled learning.

Figure A2-8: Reasons for not offering technology-enabled learning
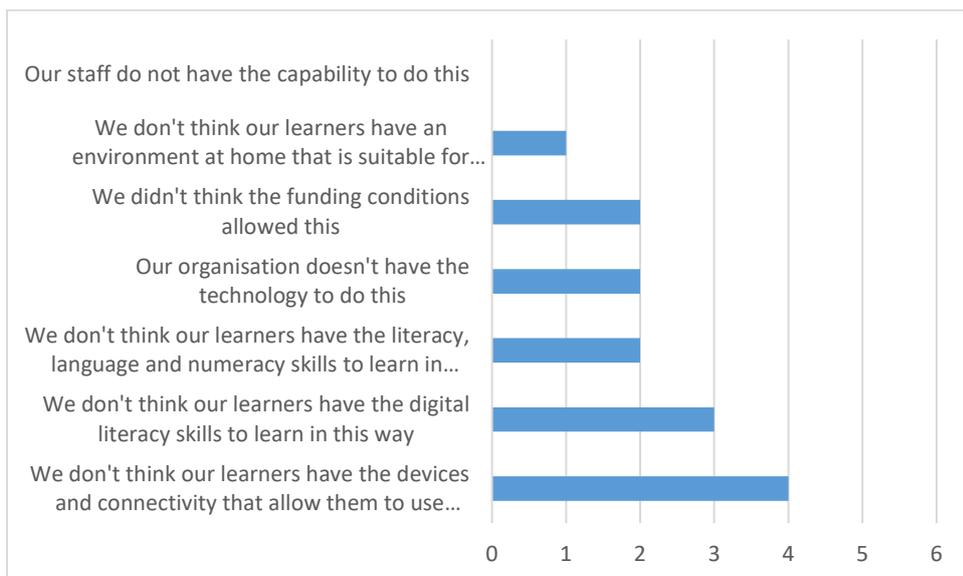
We would have liked to introduce technology-enabled learning. However, during the lockdown the employers did not want to continue classes as the workers were essential workers who worked long hours.

The TAFL fund was amazing but we are limited in using the devices due to the conditions. We would love to be able to use these devices in the classroom as part of the programme content - vs ONLY for online learning/access to online learning. We are also extremely limited in delivering digital literacy topics due to WLN funding conditions.

Providers had the opportunity at the end of the survey to provide additional comments. In summary these related to:

- the benefits for the learners and the extent to which it "opens up a new world"
- the importance of upskilling workers so they can deal with the technology they have in their workplaces
- the need for TEC to invest in professional development for educators.
  - This is a fundamental literacy and Covid19 has proved this even more. F2F is always great as connection is more natural but the world we now live in means that everyone must adapt to the reality and not get left behind. We have the adult teaching skills, passion and patience to empower learners to engage and to support employers to believe their employees have the ability to learn in this environment should it be necessary and build a resilient future proof workforce.
  - The lockdown opened a whole new world of learning for our learners (we never for one moment imagined they would be able to engage at the level they did). They were incredibly motivated, excited to be online and learning with each other, pleased about accessing classes they would not have been able to access, and pleased for the opportunity. ... It is absolutely critical that providers can continue to deliver foundation level programmes in this way and that a mix of synchronous and asynchronous learning be supported through the funding model.

Appendix Four: Case Studies

Brighter Minds at Metro Performance Glass (Metro Glass)

> Although implementing the Brighter Minds programme has been a massive task and we were thrown many challenges along the way, it has certainly allowed Metro to add value to our people and increase skills and knowledge nationally. (Learning and Development Manager)

Key points

- Company:
  - Had an established training culture
  - Provided technology for learning
  - Offered a programme that met employee and workforce development needs
  - Prepared to work in partnership with the education provider
  - Prepared to work through logistical challenges
  - Acknowledged the role of training in succession planning and workforce resilience
- Education Provider
  - Developed a bespoke training programme incorporating the business needs
  - Prepared to be innovative and flexible in meeting company needs around content and technology – used the company platform
  - Developed the capacity and capability to deliver in the online environment
  - Provided support outside of the programme (phone calls, texts, Teams)
- Learning through technology
  - Provides for content and technology learning
  - Brings workforce and geographical equity
  - Provides the opportunity for flexibility and continuity of programme delivery

Getting started

Metro Glass has 940 employees across four manufacturing sites, along with 12 regional sites whose primary function is sales and installation. Employees have a range of roles including plant-floor labourers, apprentices, through to office staff. The company acknowledges the need to grow its own staff.

> Our people are the key to unlock our value proposition and critical relationships with customers. To cultivate this we are investing in our people, their capabilities, and our support systems (Metro Performance Glass, 2020).[8]

In line with this, over the last few years Metro Glass has grown the number of apprentices from 20 to over 90, put 120 staff through a programme on courageous conversations, and 70 through the Brighter Minds programme. Half of the latter programme was funded by the Tertiary Education Commission's (TEC) Employer-led Workplace Literacy and Numeracy (EWLN) Fund.

As with many other businesses in Aotearoa New Zealand, Metro Glass scaled back its operations on March 25 2020 in response to the COVID-19 Level 4 lockdown. At this time the company was "about to start, ready to go" with the Brighter Minds leadership programme centred around 'The Metro Way'. This is Metro Glass's vision and values – safety; product and process quality; our customer, our people; and owning our work (Metro Performance Glass, 2020).

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[8] Metro Performance Glass (2020). *Annual report 2020.* Auckland: Author.

As with many businesses it was a time of uncertainty about how long lock down might last and the impact on the business and the staff. While "there were too many things up in the air" conversations with the education provider, Education Unlimited, kept going. There was a commitment from senior management who recognise the benefits of training, and "patience" from the training provider as changes to the programme were worked through.

These changes meant a shift to a Level 3 New Zealand Certificate in Business (Introduction to Team Leadership) through Competenz which had not been the original intention for the programme. The driving force behind going down the formal qualifications pathway was the desire by employees to have qualifications, rather than just a certificate of acknowledgement that is traditionally awarded on completion of workplace literacy and numeracy programmes.

Metro Glass put the offer of training out to staff thinking they,

> Might get half the number, but it exceeded expectations … It just took off. We expected 10-15 and got 70. Some were funded by TEC and Metro Glass made up the difference. (HR Director)

The logistics

Across-site delivery is a challenge in many workplace programmes. In face-to-face situations getting to geographically dispersed places to deliver to three or four staff is not viable. Delivering online made this possible with the added bonus that people from across regions were able to connect together in online classrooms using Microsoft Teams. Metro Glass selected this platform as it was used company wide.

Starting to use the technology for teaching delivery was not as straightforward as first thought. Microsoft Teams was the company platform and there was an assumption that all employees would know how to use it. However, not all employees had access to it and needed to be set up with email addresses and log-ons, then be taught how to email and how to communicate appropriately on the company system. Along with this was the need to purchase more laptops for regional centres and this was done using the TEC's Technology Access Fund for Learners (TFAL). Then on top of this was the need for IT support for set up and log on. While this worked well at the four manufacturing sites it proved more difficult at the smaller regional distribution and sales' sites, "It was hard for them, but they stuck with it."

> There were capability issues with connecting. Lots and lots of ups and downs, challenging situations – but it was great that they persevered. (HR Director)

The programme delivery ran through synchronous online classrooms scheduled at different times and employees were timetabled to attend a particular day/time. This meant tutors had to deliver the same content at the same pace. Sometimes tutors were in the room with a group of learners with others who were coming in online. When the second COVID-19 lockdown happened in Auckland, the plant was able to operate and continue with lessons. Here the Auckland tutor operated from home and employees attended in their work bubbles, or sat by themselves for sessions.

> When COVID hit [level 3, second lockdown] we had people sitting in cars for sessions. They had to stay in their work bubbles and couldn't come into a room with others. There were strict protocols for shifts, break times, work bubbles, segregation … All the protocols had a big impact on production, but we let people leave for sessions. It would have been easy to say "no". (Learning and Development Manager)

Having the training embedded in the business in worktime possibly contributed to the ability to keep it going when the situation changed with employees, "not realising what was going on behind the scenes". In terms of the overall logistics

> It was challenging, frustrating and time consuming. We needed to be fluid and innovative and bring people on the journey… (HR Director)

Programme Delivery

As the literature shows, delivering synchronously in an online classroom environment shares similar pedagogies with face-to-face delivery, but some of the aspects are more challenging. For example, whakawhanaungatanga, getting to know each other and making connections is important and especially so in this programme given employees were from different regions of Aotearoa New Zealand.

> Whakawhanaungatanga is still needed. I share about me and my journey and then go around the room in order on the screen. … I never ask for anything personal from them if I've not met them before, but I share something personal about me. (Tutor)

Additional support is described as "really, really important". For this programme it took the form of one-to-one pre-programme phone calls from the tutor to the employees about what they would be doing and what they might be asked to share. In some cases, face-to-face meetings were also possible. Both inside the virtual classroom and outside the tutor sees manaaki and showing vulnerability as being important parts of the process.

> It's not just about the technology – it's the manaaki. Creating manaaki is all about being in there with them, showing I have an interest in their journey. I show my mistakes – talking with mute on. We give things a go – we are all in this together. (Tutor)

The classes were made up of those who met the criteria for EWLN funding and those who did not. This was seen as a plus from a teaching and learning perspective in that it created tuakana-teina relationships. Sessions lasted one and half hours, but this was shown to be not quite long enough given that arrival at class, logging in, and testing the technology were involved before the teaching started. However, part of showing up on time to class was about "walking the talk" of leaders who need to lead by example in workplaces and arrive at meetings on time. Future programmes will run in two-hour sessions which the tutor sees as a decent amount of time for six to 10 learners.

The first part of the programme delivered in 2020 enabled the employees to complete a unit standard required for the Level 3 New Zealand Certificate in Business (Introduction to Team Leadership) and the remainder of the learning will be picked up in February 2021 when the programme restarts. This saw employees complete improvement projects and 32 of them are to be presented online and nationwide to managers. One of the sites chose a Dragon's Den approach to pitching their solution and were thrilled at their capability to undertake projects like this and use technology to research the content for them and to ultimately deliver their presentations.

The results for employees

Employees recognise they are better prepared for their roles as leaders. They are no longer just "good cutters" but now have the skills and confidence to manage their teams. And this contributes to succession planning and "builds workforce resilience".

> They are changing the way they manage their teams. We are now seeing more regular one to one meetings that are documented and they are getting new buy-in. (HR Director)

While the course has taught soft skills in terms of leadership, the employees have also come away with digital skills. The latter is of particular importance, not just for the skills alone, but for the sense of belonging it brings. The tutor talked about an employee who has not previously used Microsoft Teams and when interrupted during a session, commented, "We're in a Teams meeting".

> They are chuffed and embrace the change. They are part of it. When COVID hit the technology was handy, they could take it home, log in and still be part of it. (Tutor)

Learning to use the technology was challenging for some and not others, "There was a massive mixture. Some knew literally nothing and some were really savvy". Having to learn in this way led to speeding up the development of digital skills, "As people had no choice which shows how adaptable people can be". It was not a case of the younger ones being more tech savvy than the older ones. Both the tutor and the Learning Development Manager gave examples of struggles from both these age groups. However there is a sense of surprise that the younger ones who struggled did so given their use of technology on a daily basis, but this is in line with the literature that the use of technology for learning differs from that used for social connection.

Learning to use technology for work has transferred over to employees' home lives where they are now more confident users. For example one employee had the tutor help him download Zoom to his phone so he could connect to his son in Germany more often. The tutor described this as "priceless". Employees also have more confidence around their teenagers in relation to being able to have more conversations with them about technology. They are also able to conduct everyday activities such as booking travel online and shop online – but are encouraged to read before doing this.

Comment

So are online classes the way to go? They provide an opportunity for learning that would otherwise not be available to Metro Glass employees across the country. Social connections were able to be made with many employees in the room together albeit learning online with their own devices. Employees in the regions were able to connect with and share thinking and learning with other employees with whom they would not usually have contact.

But the tutor thinks there is still a place for face-to-face delivery and that the blended approach is the best way to go so it will be interesting to see what happens when Metro Glass resume their programme in 2021.

Life Health Foods: From novices to experts!

> COVID lockdown forced me to be a teacher in a virtual classroom. It was going to happen, but I am better because of it. I know more and can do more. It's extended my confidence. Throw me anything, almost, and I can do it online. On a normal scale it would have taken much longer … we achieved it in less than that and had to grow, extend, change, adapt to what was happening. (Tutor)

Key Points

- Company
  - Continued with a training programme in spite of scepticism about the move to learning online
  - Accessed the Technology Access Fund for Learners (TFAL)
  - Supported employees to use the technology
  - Acknowledged the role of training in preparing their workforce to cope with the digitalisation of the plant in the near future
- Education Provider
  - Recognised the opportunity and the need to shift to technology-enabled learning
  - Developed the capacity and capability to deliver in the online environment
  - Used a range of tools, platforms and resources to support literacy and numeracy learning
- Employees
  - Can learn in the technology enabled environment provided they have support
  - Younger learners supported older ones to use the technology
  - Developed literacy and numeracy skills along with digital skills
  - Able to use technology at work and in their wider family and community lives

Background

Life Health Foods is an Auckland based food manufacturer providing plant-based food. At their factory in Avondale, the company employs around 150 staff, including office workers, logistics and production staff. The company is proud of its diverse workforce with staff from over 20 countries and speaking 35 languages.

Life Health Foods has two drivers for upskilling their workforce. Firstly to provide opportunities to individuals, who as they work full-time do not have time to attend learning elsewhere. Secondly, the manufacturing plant is going through a considerable upgrade introducing new computerised machinery that they want current staff to be able to use.

> We want to grow our staff. We want to encourage the young ones. If they have their own dreams, but have to help mum, dad, their family we want then to get on, get a better education (Production Manager)

As part of this upskilling process Life Health Foods has been running workplace literacy and numeracy programmes for three years. Starting out this was for small numbers of employees and this grew as more people came forward and wanted to be part of it. However the company realised that 40 hours was insufficient time for people to reach a level of literacy and numeracy that meant they would be able to continue on their own learning path.

> Key learnings were lost for those at certain levels of literacy when the initial classes ended and there was nothing to support retention of learnings and growth. We did initially believe through accessing Pathways Awarua, listening to the radio, reading to their kids and getting involved in team meetings

that literacy skills will continue to develop. We soon realised that for all but a few of the more self-motivated individuals additional support was needed through ongoing training. (Operations Manager)

Starting with technology

Life Health Foods had an established culture of training when the Level 4 COVID-19 lockdown happened in late March 2020. As an essential service, work continued at the company, but so too did training, with the challenge of how to continue in an environment where the tutor could no longer be in the room with the employees.

While not as much training happened during the first lockdown having access to the TEC's Technology Access Fund for Learners (TFAL) meant the company was able to buy Chrome Books for employees. Training would not have happened without this fund, described as "a practical and accessible solution to continuing learning throughout 2020" by the training provider and making a "huge difference" by the Production Manager.

> It opened up an opportunity through COVID. We wouldn't have run classes … the need is there … .and it [the training programme] was a level of motivation in a difficult time … (Operations Manager)

> The learners are more adept and confident. It's great that some places got the laptops. We can now use them in the normal normal, not just the COVID normal. (Tutor)

To begin with the Operations Manager was sceptical about whether those with English as a second language would be able to learn in an online environment and would keep attending the programme. As it turns out, attendance was 100 percent.

> Initially I thought online learning was daunting. Setting up Zoom meetings was daunting for me! One of supervisors was the key … and the learners had a sense of wonder – they were like little kids. (Production manager)

> I was sceptical about learning via zoom – but the uptake and positivity was so good. It kind of just happened. We didn't need to do much more than set it up. (Operations Manager)

> The learners at the beginning were very, very wary. They never knew how to get online. The supervisor would come in to hook them on to the wifi. It worked well. Two-three sessions and they didn't need the supervisor – they learnt off each other. (Tutor)

The set up happened behind the scenes. Here Upskills, the training provider, recognised the opportunity that online learning would provide for employees and support the social responsibility the company had to its employees. In the COVID-19 environment this expanded to thinking around wellbeing and connectedness that became so important in lockdown.

Upskills had two key roles at the start of the digital journey. Firstly, was to convince Life Health Foods of the importance of continuing to upskill staff and that this could be done digitally, and secondly to support them in their application for TAFL that would enable this to happen. Then the company's IT person stepped in and supported the setup of the devices for learning. Here, log-ons, systems and access to the internet at work were provided. There was also ongoing technical support for those who were having difficulties. The training provider sees "the tech support person is key".

Teaching and Learning with Technology

Some of learning groups at Life Health Foods had had two face-to-face learning sessions when the online programme started. For them the new sessions meant employees in a classroom together, albeit masked and sitting a metre apart, and the tutor coming in online.

Shifting the teaching to online was a steep learning curve for the tutors and training provider.

> I ran around like a headless chicken – I didn't know what to do. I'd never delivered 100 percent online before. (Tutor)

One of the tutor's main worries was how to be collaborative in the online environment, paying attention to concept of ako and not delivering in a university lecture kind of way. Building tutor capability had to happening quickly – and this was through tutors reading about online learning and collaborating online as a wider team of tutors with each of them taking responsibility for different aspects.

> My network helped. They did PD and put it into the *Slack* channel … little by little I discovered the collaborative approach and that the virtual classroom can be collaborative. … On the Zoom whiteboard you can get people to write stuff on it, you can share screens … I can write in a document and share my screen and they can see it. (Tutor)

From the initial panic, learning about collaborative pedagogies and the various resources, programmes and platforms happened quickly. Both the tutor and the learners came to terms with learning in the digital environment. The Production Manager describes the learners as a family, with a sense of belonging. Here each person had a role to play and wanted to help each other. While there was, "a little bit or trepidation" from some learners, the younger learners excelled in a tuakana-teina way with the older ones.

> The younger learners helped the older guys with the technology. Having used PCs at school the younger members of the class learnt their way around Chrome Books quickly. The more mature learners took this support really well. Culturally [Samoan] you usually see the elders in charge, but there was an appreciation that each had a role to play. (Operations Manager).

> … and these two kids have always been on phones and were very good at this and teaching the others. They formed a 'WhatsApp' group for the class and it is still active … it has carried on post-class. On Friday one guy loaded all the photos from the projects into a collage with music. (Tutor)

What it means for learners

The tutor thinks learners require a certain level of literacy and numeracy to be able to learn with technology, but these skills develop along with digital skills. For example learners started typing into Zoom chats, started taking photos of forms and sending them in the WhatsApp chat. They also became familiar with using a digital whiteboard, and platforms such as Intuto, tools such as Canva. The result of having to use technology for learning has resulted in more digitally skilled employees. However, while these can be seen as quick digital wins, the education provider sees this as learners having developed the digital basics from which they can build.

The Production Manager has seen the benefits in the workplace in terms of a growing use of literacy and numeracy skills in a digital environment. For example, employees are now sending emails, doing reports of daily tasks that supervisors used to do. He has also noticed the growing confidence in oral communication where employees, particularly those with English as an additional language, who were too scared to speak up, now have the courage to speak up at and raise issues at tool box meetings. "The leaders have grown exponentially."

The growth in literacy and numeracy skills as shown by the change in practices means people are keen to continue learning and move on to Level 3 certificates in food and beverage processing.

> People want to get qualifications. They see progress and growth and they are hungry for quals. The guys from Africa and the Islands don't have formal quals and they are hungry for more. .. As a manager I like to see this. (Production Manager)

The new digital skills have been taken beyond the workplace and into family and community lives. Here there are examples of employees now having email addresses, being able to use Zoom to connect with families at home and overseas, and being able to use software to make posters for their church group.

> During COVID they became very good at computers and even on their phones. They downloaded Zoom to their phones and also used Canva on their phones. .. They have Samoan family meetings on their phones and a Tongan lady used Canva to do the church bake sale church posters. They have taken it home. Their kids are really proud … (Tutor)

Comment

So are online classes the way to go? For Life Health Foods they provided an opportunity for learning that would otherwise not have happened during the COVID-19 lockdowns in Auckland. Upskills, the training provider sees those with lower literacy and numeracy skills perhaps being better served in the face-to-face environment, both for learning and for the relationship building and whakawhanaungatanga that is especially important for trust and confidence building for these learners.

But learning with technology has opened up a wider world for these learners who now have some capacity and capability to continue their learning journey at home should they want to. The company will continue to use technology for research projects and for access to Pathways Awarua.

English Language Partners New Zealand: Building capability in the online environment

> I have interactive classes. I can slip into peer or group work and you can move around the classroom – Zoom has breakout rooms. You're a big face, so you can't go in quietly! But you do need to adjust to the process. (Tutor 1)

Key Points

- Education Provider
  - Provided licences and professional development
  - Has used the experience to look at flexible delivery models for the future
- Tutors
  - Undertook professional development provided by national office
  - Undertook their own professional reading
  - Built on their initial experience of using technology in the face-to-face environment
  - Provided a range of support in addition to the teaching
  - Taught learners how to use the technology as well as the programme content
- Learners
  - Were willing to learn in the technology-enabled environment
  - Were familiar with applications used for social connection
  - Had technology that was not fully suited to learning – mainly phones
  - Some had trust concerns in relation to platforms and applications
  - Engaged with technology-enabled learning during lockdown, but many were keen to get back to face-to-face

Getting started

In late March 2020 English Language Partners New Zealand (ELP) was forced to think completely differently about how to deliver learning programmes to over 7000 English language learners in their 22 centres across New Zealand.[9] Their learners have varying levels of English, ranging from very little to sufficient to be undertaking the level 2 New Zealand Certificate in English Language (NZCEL) or learning to write for academic purposes.

> In March on the Saturday it was announced – lockdown. On the Monday we thought maybe we'll move to Zoom. We'd practised this before – all the teachers had practised just in case. On Monday I sent a Zoom link to everyone [NZCEL learners] and we went for two months completely online via Zoom. (Tutor 2)

From the national office perspective the initial driver was to give learners as much contact as possible. Many learners would have been feeling a sense of isolation and may have been struggling to understand the public health messaging, so maintaining a learning programme was the opportunity for connection. "We didn't want our learners to be stranded – the start was to make contact." Up until this time, while ELP had used technology in the classroom (e.g., use of tablets for the Literacy and Numeracy for Adults Assessment Tool (LNAAT), platforms such as Kahoot, and applications such as Quizlet.) and had run professional development for these, they had not considered using technology for the full delivery of programmes.

> Pre lockdown we had been doing basic tablet skills, but had not gone as far as communicating via Zoom. It was a challenge. It happened quickly. … In our classes we have a team including a bilingual assistant and child care assistant … We contacted learners and reassured them that everything was

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[9] For more information see https://www.aceaotearoa.org.nz/file/ace-aotearoa-winter-newsletter-2020pdf

okay. Then we figured out quickly that they all had WhatsApp so we created a class group of learners and this kept them in touch with each other. (Tutor 3)

While centres made contact with their learners, national office set up support for building the capability of centres to do this. This started with purchasing Zoom licences and then using this programme for delivery. At the same time national office offered training in the use of Zoom and followed this with weekly drop in sessions where tutors were able to ask questions and share their own learning with others. This had the added benefit of connecting tutors together at a national level in a way that had not previously been done and was appreciated by the tutors. "There is interaction. They meet each other, chat and email in ways not done before." It has also had an added bonus of getting some standardisation across centres in terms of curriculum and delivery.

Tutors were at different stages of capability and readiness, with the majority having some idea about technology and a preparedness to learn how to use it.

I did a lot of reading about technology-enabled learning – it's important for me to do this. I learnt about social presence and student-to-student relationships. The development of this is harder in an online environment. … [while it] enhances student teacher relationships, I'm not sure about student-to-student, although break out rooms can come close. (Tutor 1)

I was quite confident because before Zoom I'd already used technology in class – it's part of my every day teaching. (Tutor 2)

It was a bit stressful, but I didn't worry and learned along the way. I attended seminars that national office offered – where they talked through the Zoom functions. One of our team was reluctant and I spent a lot of time with her. She kept trying to dissuade us, tried to make learners think it was hard, but I said, we have to make this work. (Tutor 3)

The tutors noted that most of the learners were "pretty tech savvy" and once they were shown how to do things, were pretty responsive. A tutor also commented that underestimating how savvy they are is a mistake – "if they can video call their families, they can video call me." From the learners' perspective there was a willingness to engage with learning in this way. This is in spite of having limited technology that is not overly conducive to learning. For example in one literacy class of 17 most only had phones – and some only had basic phones that did not support Zoom that was used for online classrooms. In addition shared technology in homes was reasonably common.

Logistically we were teaching them how to find Zoom and then use it remotely. Trying to get this across to someone who doesn't have English is hard. They have concerns about the app, about having an account. I spent a lot of time on the phone making sure everybody, including the teaching team, was happy and okay. (Tutor 3)

In that class group there were some who couldn't access Zoom [7 out of the 17 learners] and then use it remotely … that is not to say they would not have been willing. I learnt it was important to think about my class in two different ways – the face-to-face Zoom and something else alongside this. (Tutor 3)

This "something else alongside" was the WhatsApp group that had been set up by the tutor. Here those not able to access Zoom were able to get support from the tutor and also acted independently with each other. It's not clear from this study whether this sense of learner agency was anticipated by the organisation, but it shows it can 'accidently' develop when the situation drives learners to work in this way.

A community group purchased laptops for learners in one of the tutors' groups. However, as the tutor pointed out, these on their own are not enough to ensure they will be used. Some of the

learners continued learning with their phones as they did not know how to use the laptops, even though the tutor supported them to do this. Here she used the analogy of, "Why give man a fish if he doesn't know how to cook".

Conditions for learning

Using technology widens access to learning. For ELP this means being able to provide programmes to learners in more provincial regions where there are often not enough learners to make up a class.

> We were able to get students from across New Zealand – Taranaki, Southland, Northland (Dargaville), the Hutt, Bay of Plenty – the provincial centres. (Tutor 2)

Along with geographical equity it was easier for learners in workplace learning programmes to attend classes at the end of working day. Being able to learn from home rather than going home from work and back out again to an evening class made huge difference.

Access to technology is one thing, having trust in it and being able to use it for learning developed during the time that technology was used in the learning programmes. What also needs to be accounted for is the idea that these learners are in home environments where there are other calls on their time. One of the tutors noted the challenges that arose for her learners whose programme ran for four hours a day from Monday to Thursday, followed by two hours on Friday. While it was a novelty at first, the challenges of children running around and needing to make meals for their families got to be a bit much.

> At the end the learners were probably a bit sick of it. They wanted to and were ready to go back to class. [It's hard] with family and kids running around. And they just wanted to have physical contact. (Tutor 2)

However one of the positives to come out of learning with the family around was the sharing and support that evolved. One tutor talked about families learning together in the one hour daily sessions that were run for those with lower English skills. Here there were examples of children sitting in on sessions and participating – for example children taking tablets out to the garden to show other learners in the sessions what the family was growing. These were "golden moments". Having supportive families meant learners were, "happy and open to taking risks to learn." And when children went back to school, learners were better prepared to sign on to the technology and use it themselves.

Social interaction with peers is an important enabler of learning. While this does happen in the online classroom environment, ELP has found this aspect has not worked as well as in the face-to-face environment.

> The learners can't interact in the same way. They can't chat casually. For example, when they don't understand something they can't quickly ask the person sitting next to them. And they don't say it to the whole class online. They can do private chats, but it is not easy. (Programme Manager)

Where to from here?

So what does the future hold? While technology-enabled delivery worked during lock down there is a sense that this is not the way all the learners want to go. While they appreciate the opportunity they had, there is something about the social process of learning and social interaction that is important to some of these English language learners. "Learning a language is about having the opportunity to practise and this lends itself to synchronous learning."

As a result of the learning from the fully online approach ELP is looking to move to a blended approach. This provides the opportunity for direct teaching along with the time learners need to undertake language learning activities in their own time, such as reading, speaking with family. This opportunity to practise outside of the classroom environment not only helps with learners' skill development, but also encourages agentic learning behaviours that are required if they want to undertake future learning.

> I think very firmly that it is about a blend of synchronous and asynchronous and the extent of the blend is optional. The reality is that it [synchronous online] is very intense – and we took five minute breaks to get around this. Learners need to be disciplined, listen and ask questions. (Tutor 1)

Comment

From an organisation and teaching perspective there have been a range of benefits in relation to technology-enabled teaching. ELP now has a wider range of options on offer to learners; has come up to speed on the technologies and pedagogies required for teaching in this environment; has some more standardised approaches; and has grown a community of practice across the country. The challenge for the organisation is to maintain this.

For learners, technology enabled them to continue learning at a time when there was no other option. "They just had to do that and as a teacher I noticed a lot more learning." Their readiness and engagement with learning in this way appears to be high given their attendance rates across the various programmes. They also learnt digital skills along with the language and literacy skills that were part of the programme content. However for those with very low levels of language this was a particular challenge.

The extent to which full-time, face-to-face learning environments are a certainty in the future is unknown. What ELP has learnt is that technology-enabled learning is feasible for English language learners, but more challenging for those with lower language skills and for those who lack the digital skills to learn in this way.

Edvance: Making the move to technology-enabled learning

> It was a steep learning curve for all involved, but one that showed the mettle and attitude of everyone concerned, and for those that had hardly touched a computer before and were dialling in from their own homes with no one there to support their initial connectivity. It proved to me the attitude and engagement to the programme before we had even begun. (Tutor)

Key points

- Education Provider
  - Built from the technology they knew was widely accessible
  - Had tutors who wanted to develop their capability to deliver in the online environment and were prepared to invest their time to do this
  - Saw an opportunity to offer programmes in an online environment
  - Delivered in synchronous, online classroom environments
- Company
  - Provided technology for learning
- Employees
  - Overcame the initial difficulties associated with learning this way
  - Persevered in the online classroom environment in spite of preferring the face-to-face option
  - Recognised the opportunity available to them
  - Appreciated the increased knowledge and skills they developed
  - Developed digital skills along with the knowledge and skills of the programme content

Getting started

On 15 March 2020 Edvance had had 29 programmes running for 200+ learners. As a result of the Level 4 lockdown on 25 March 2020 there were zero learners! So how does an education provider with limited experience in technology-enabled learning deal with this situation? The answer was to, firstly look to clients who wanted to continue with learning programmes using technology, and then look at the technology, the platforms and the types of delivery that would suit their learners in both workplace literacy and numeracy programmes and intensive literacy and numeracy programmes.

For the former it was about getting company buy-in to start or continue with training. This was challenging given that in the face of the COVID-19 level 4 lock down, companies did not know what this meant for their businesses. And training – in the main - was off the agenda in the short term. Learners enrolled in programmes funded through the Intensive Literacy and Numeracy (ILN) Fund were a little different as they had come to these programmes as individuals. Here learners were not coming into an online environment with people they didn't know as they had already met and set up Face Book Messenger groups.

Edvance opted for G-Suite for Education given their knowledge of how widely this is used in the compulsory education sector. Along with this, the organisation applied to the Tertiary Education Commission's Technology Access Fund for Learners (TAFL) and purchased Chrome Books, "They're robust, used in schools and affordable," but, "It took three months to get them as they were out of stock". While using Google Classroom, Meet and other G-Suite tools was seen as a straightforward option it still required support from tutors, programme managers, along with IT support in order to get learners ready and able to log in and use it for learning.

> It's been great. The learners just needed to get a gmail address and we helped some to do this. If we don't set them up then they can't get in. Getting into Google Meet and into a classroom was a learning curve at the start … it didn't take learners long – it's user friendly. (GM, Education Provider)

Having tutors online at the same time was the equivalent of face-to-face classroom environment. Having tutors use the same technology was also helpful as it meant they had the same interface as learners and were able to guide them through issues. However, Edvance also recognised it was not simply a matter of putting a tutor online and learners would stay engaged. They had to take cognisance of the pedagogy associated with delivering in this way.

To this end, Edvance built the capability of their tutors through professional development, including one-to-one training, mentoring, a resource bank, and a webinar. Tutors were introduced to ways of working online - including resources, activities, and the technology itself. This was followed up with observations of each other's sessions around "bravery with technology". Staff engagement was also maintained by daily catch-ups during lock down to support tutor learning and wellbeing.

> In terms of capability – I think about 20 percent were ready [to move straight online]. The tutors learned on the job. They had support and encouragement … they put themselves forward, were highly engaged and wanted to build their capability. (GM, Education Provider)

While the tutors learnt "about" online delivery, learning to "do" online delivery came with practice and a preparedness to adapt, experiment, recognise when things were not working and "drop them".

Programme delivery and results

Technology-enabled learning for employees

Prior to lockdown Edvance had started a programme with Counties Power and agreed to continue with this. This company owns and operates the electricity distribution network that services farms and businesses in the Counties area. The learning programme, a mix of communication, teamwork, diversity, and leadership skills was intended to be delivered face-to-face, and the company showed their continued commitment to training by purchasing Chromebooks for the employees. Prior to delivering the programme, the tutor delivered a trial lesson to the management team so they would have a good understanding of what the employees would be doing.

Before lockdown the tutor had met the 10 employees and tested them, but had not established a relationship with them. Given the importance of relationships he was concerned about this and also about the extent to which the content of the programme was suited to online delivery.

> It was new. It was a leadership communication course and I felt it might be hypocritical to teach a course like this in this way as face-to-face is best. If I'd had to do it for too long I was worried about the restrictions of the technology for some of the team work activities. (Tutor)

So here is a company prepared to support the learning through the provision of the technology and a tutor who is prepared to come quickly up to speed and deliver in this way. But what about the readiness of learners? To start with, "Some of them were not that computer savvy … There were teething issues, but they persevered". There was the added bonus that all learners had access to the internet.

> So this initial challenge proved to be something that bound everyone together, and allowed us to get to know each other in the first couple of sessions in a way quite different than any of us had anticipated, which ended up being a real strength. (Tutor)

> The first couple of sessions were good. They were all logging on – some in their garages, kids jumping off the ceilings. They were committed and engaged in a way that was unique and I put this down to the culture of Counties Power. (Tutor)

Having the "kids jumping off the ceiling" had the added bonus of having them there as problem-solvers.

> A couple of older guys at the first session were struggling, they didn't know how their system operated … couldn't figure it out. A child of theirs would come along, "Just go there Dad". (Tutor)

An advantage of this programme was that the employees all knew each other – they were already a work whānau, so there was a sense of ease at the start of the programme in spite of being in the online environment. As with other programmes run during lockdown, attendance at sessions was high. "They didn't miss a session, even though they were an essential service. They might do a full day at work and then log on at night." Another advantage was using the same devices, meant it was, "Easier to help them and they would help each other".

With Counties Power technology was the enabler, but the course content was vital for developing the employees' knowledge and skills and connecting theoretical aspects to the employees' practice. Here, the tutor, rather than the technology, was key to developing leadership skills that were at the core of the programme and made the difference to the employees' knowledge and skills.

> [X] took a while to get onto the course at the start with our Zoom sessions etc, but once this was overcome, he really took off. … he had a promotion into a further position at Counties Power on the week of the graduation. His graduation presentation showed his incredible professionalism and ability to communicate complex ideas … (Provider report)

At the end of programmes Edvance collects learner evaluations and in relation to the Counties Power there are three points of note. Firstly what they enjoyed most was the course content and interactions with others. Secondly, for some, the technology and getting used to logging on and learning in this way was challenging. Finally was the desire to get back to the face-to-face environment.

The latter is interesting as the learners recognised the opportunity that the online environment provided in a time when it was not possible to be in a virtual classroom and likewise appreciated the ease with which they were able to switch from learning with technology, to face-to-face, and back to technology in the second Auckland lockdown.

Intensive Literacy and Numeracy (ILN)

In line with seizing the opportunity with workplaces, Edvance was also able to shift their thinking to new ways of doing business through online delivery in programmes delivered through the ILN fund. Their promotion of this delivery model attracted 70 learners for one programme and seven for another. One of these was a Pre-entry Preparation Programme (PEP) for police. Here online classes were offered to individuals. The tutor thinks the content of this programme lends itself to the online environment. For example, teaching numeracy is easier to do in this environment than leadership skills. It also has the added advantage of being able to offer programmes to individuals across the county, thus widening access to learners from different regions, while also shortening the travel time commitments for individual learners.

Comment

So are online classes the way to go? For Edvance it seems to be a case of 'yes, but'. The 'yes' comes for programmes that widen access to learning such as that delivered to individuals in the PEP programmes. Here a blend of motivated people and content that suits online delivery combines to make this approach work. The added bonus of this type of delivery is that digital skills develop at the same time as traditional literacy and numeracy skills.

The 'but' comes from where there is an option for face-to-face. The Counties Power employees wanted to return to this form of learning for the increased social interaction, and the tutor thought face-to-face was better suited to the content of the learning programme. However in programmes such as this, the tutor thinks there is an opportunity for blended / hybrid approaches in the future. Online synchronous learning can be used for interaction and activities while, for example, completing written work can be undertaken in the asynchronous environment.

> The whole thing is a positive. They [learners] were forced into new ways of doing things and it is one more thing they know how to do. (Tutor)