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On-line distance education research final report

To	Ministry of Education
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Introduction

Online distance education refers to the delivery of curriculum when the teacher and learner are separated by time and space and when distance learning methods are enabled via the internet (Ali, 2017). Full time online distance learners receive all the curriculum online while supplementary learners receive some curriculum online while still attending and receiving curriculum from a face-to-face education service provider.

The development of online distance education in Aotearoa New Zealand ('New Zealand') follows a long history of distance education provision and builds from the identified benefits of online learning (Alexander-Bennett, 2016; Morrison, Morrison, & Ross, 2016; Zheng, et al., 2016; Wright, 2010). However, authors have identified a paucity of research on online distance education in New Zealand (Barbour, 2011; Barbour, Davis, & Wenmoth, 2011; Lai, 2017; Tiakiwai & Tiakiwai, 2010) and overseas experience reinforces the need for effective regulatory control and policy support within sector (Hasler-Waters, et al 2014; Molnar, et al, 2017; Watson, et al, 2014).

Research questions

The Ministry of Education commissioned Cognition Education to conduct research on the factors that drive student and teacher success in online distance education. The over-arching question addressed by the research was:

What lessons can be drawn from existing online providers about teaching and learning in online environments and what conditions are necessary to support student progression and achievement?

Four main areas related to online distance education were examined, with a range of sub-questions addressed under each. The main areas were.

1. The differences between online and face-to-face teaching and learning
2. The delivery of pastoral care, guidance and support in an online context
3. Required dispositions and competencies of online students.
4. The development of online learning content and materials.

The research also undertook limited examination of how stakeholder relationships were brokered and managed within the supplementary context as well as the collection and management of student information. The research did not evaluate current online distance education practice in relation to either quality or outcomes. The following summary of key findings focuses on areas 1-3 above.

Research methods

Document review

Relevant policy and programme documents were reviewed by the research team to build further understanding of online distance education in New Zealand. The review informed all the research tools developed and the interpretation and analysis of the research findings.

Literature review

A targeted literature review was conducted to identify best practice and contemporary issues in online distance education. The review was particularly focused on New Zealand literature and was used to inform the research design, data analysis, and reporting.

Key informant interviews

Thirteen current providers of online distance education in Aotearoa New Zealand were interviewed either in person, by telephone, or by video conference. Three of these interviews were with staff from one large provider of online distance education and five participants were Māori or Pasifika providers.

Online survey

An online survey was conducted of teaching and non-teaching staff from provider organisations of online distance education in New Zealand. One hundred and eighty staff submitted a completed questionnaire.

Student interviews

Focus group or individual interviews were conducted with a diversity of students currently engaged in either supplementary or full time online distance education. The interviews were conducted either face-to-face, over the telephone, or by video-conference. All students interviewed were 16 years and over and were engaged in secondary schooling. A total of 27 students were interviewed with 15 of these Māori or Pasifika students.

What has been learnt about online teaching and learning?

Effective online teaching and learning is, at its core, a demonstration of effective teacher pedagogy. Effective teacher pedagogy in face-to-face settings is likely to transfer to effective teacher pedagogy in online settings. The core difference is the willingness, ability and intent of online teachers to develop an online pedagogy that effectively uses appropriate digital tools and distance methods to enable learner success. The deliberate acts of online teaching made by online teachers inevitably impact learner success. Effective online teachers therefore need to be able to effectively translate and transfer known principles of effective teaching and learning, to the online environment.

When working with diverse learners, key informants utilised a range of pedagogical approaches to respond appropriately to learner expectations, needs and aspirations. Online learners in this research still expected a relationship with their teachers and uninterrupted time with them. They valued authentic teacher engagement, demonstrations of teacher care, and teachers who responded to their unique needs and context. Students felt more assured of their progress when they knew their interests, and needs were visible and were being actively monitored. What this highlighted is that while student expectations of teachers were similar to that of a face-to-face setting, teachers in turn needed a suite of online teaching skills to meet these expectations. This confirms that the choice of online tools, activities, and student/teacher interactions, and how these intersect, influence learner engagement, and in turn, learning outcomes.

Evidence from this research consistently suggests that online distance education systems require the capacity and capability to be adaptive and responsive to individual student needs, preferences, and aspirations. The identification of this as a critical success factor is consistent with increasing recognition through most education systems that learning outcomes are enhanced when learning programmes are tailored to meet learner need. While this is in keeping with learner-centred and more collaborative teaching approaches, this research also shows that both teachers and learners can derive benefit from the manner in which the online environment supports more individualised teaching and learning.

Key informants described advances in technology as better enabling best practice in an online environment. They also described current technologies as increasingly blurring face-to-face and online teaching and learning. Attention by teachers currently to ensure that the online learning infrastructure is accessible, is understandable. A greater focus on pedagogically driven practice may become more evident in the future as the technological infrastructure and online skills and confidence become more embedded. For example, key informants reported that teaching and learning online was becoming easier and more focused on pedagogy as virtual connections between teachers and learners became more assured and fit for purpose.

Conditions supporting progress and achievement

Modes and methods

The research findings confirm that online distance education is currently delivered in New Zealand through a variety of synchronous and asynchronous modes. The use of both modes in tandem, and complemented by face-to-face engagement when appropriate, is indicated as important for success. This view is consistent with the majority of online teachers surveyed in this research who reported using face-to-face methods. However, the demand for face-to-face contact also varied across online students, indicating that it should not be assumed that face-to-face contact will be sought, appropriate, or required by all students. Providers are also using virtual means to enable teacher and student interaction.

Face-to-face support is supported by previous research which shows that face-to-face interaction is often preferred by Māori online students as it provides critical academic, social, and cultural support. Whether current practice models enable sufficient face-to-face contact with students, was not directly examined in this research.

Asynchronous modes of delivery reported by teachers showed a common use of standard practices such as email, uploading content, and document sharing. The less frequent use of newer online tools and capability suggest online practice is still developing, a conclusion supported by other findings in this research.

Limited face-to-face time with students has been previously suggested as a reason for teacher directed approaches and students in this research also suggested this. Students also reported varying degrees of interaction with their other online learners as well as differences in the extent to which they sought such interaction. Key informants acknowledged that available tools and practices to support more collaborative and student lead learning were still developing. Recent technological advances in synchronous face-to-face contact, between teachers and students, and students and students, were supporting this growth.

Previous research asserts that online distance education generally requires more student-centric, inquiry-based, facilitative and flexible teaching methods. While key informants conferred, the setting of individual learning tasks was the most commonly reported teaching method by the online teachers surveyed. In comparison, more student-lead and collaborative teaching methods were much less frequently used. This result is consistent with previous research which has shown the actual online teaching practices often do not align with what is accepted practice.

Learner engagement

Findings throughout this research reinforce relationship building and student engagement as essential foundations to success. The findings show that teachers and learning support persons use both synchronous and asynchronous tools to develop relationships and engagement. However, practices reported by online teachers showed that more individualised methods were more frequently used than collaborative methods. This finding further supports the conclusion that while the need for collaboration is understood and accepted by providers, current practice is not always aligned.

Communities of online learners

The ability to create communities of online learners is considered a core benefit and strength of online distance education. Methods used by online teachers in this research to build communities of online learners revealed an emphasis on ensuring that students could access and participate in the online environment. However, most teachers also reported a focus on developing family/whānau support and involvement, as they provided further support away from the online environment. This approach is a known success factor for positive educational outcomes.

This research is consistent with other studies which report that online collaborative learning is not sought by all online learners. This research also shows that some students can benefit from online teaching practices which support more independent learning approaches. Similar findings showed that online students may also have existing or alternative channels through which they receive pastoral care support.

Previous research also shows that online learners can feel little sense of community or connection with their online peers. This research finds similar evidence of this. The need for flexible and responsive delivery systems are again reinforced. Also emphasised is the need for teacher skill in ensuring that teaching approaches used to develop self-managing and self-regulating learners do not result in learners feeling isolated, unsupported, or left behind in their learning.

Teacher dispositions and competencies

Findings from this research indicate that effective online teaching is grounded in the same principles and objectives of face-to-face pedagogy. This finding supports the conclusion that effective online distance education teachers are first and foremost, effective teachers. In saying this, fundamental pedagogical principles might look different within an online environment and may require different practices. Effective online teachers therefore need the skills, experience and knowledge to translate and transfer effective pedagogy to online. This requires the ability to use online tools and affordances effectively and appropriately. This includes the ability to integrate face-to-face interaction and practices and tools that are not technologically based (i.e. blended learning approaches). In addition, teacher dispositions and competencies highlighted in this research as necessary for online success are largely similar to what would be identified for face-to-face teachers. Not surprisingly, a base level of both digital competence and confidence, is also important.

Teacher dispositions and competencies highlighted in this research included the ability to effectively:

- teach from a position of teacher as facilitator and guide, rather than expert, while also having deep subject and curriculum knowledge
- establish and maintain collaborative, supportive and trusting teacher/student relationships, which are learning focused, and which overcome transactional distance
- establish and maintain collaborative, supportive and trusting student to student learning relationships
- build and sustain teacher and instructional presence; including learning programmes that are responsive to students' interests, needs, abilities, aspirations and progress, and which sustain engagement
- use teaching approaches, modes and methods which build learner agency and autonomy, self-management and resilience, while also delivering the teaching guidance and supports required by learners
- demonstrate teacher care, engagement and follow-through, by using a range of practices; guidance, encouragement, promptness and accessibility, are all important
- set and maintain high expectations for learners and for learning outcomes
- translate and transfer relationship-based and kaupapa Māori learning principles and practices when working with Māori learners and within Māori settings
- communicate regularly with their students and in ways that establish trust and which demonstrate teacher care

- communicate, using an increasing range of online tools, and communication tailored for effective online transmission and receipt
- provide clear and succinct feedback which requires minimal elaboration to ensure that learners understand meaning, intent, sentiment and next learning steps
- collate and interpret a range of data and indicators, including online data analytics, to 'know thy learner' and inform evidence based guidance and direction.

Reflecting the curricula

Personalised teaching and learning embodies many principles, values and key competencies from the New Zealand Curriculum. Tailored, individualised teaching and learning is also recognised in the literature as a key benefit and affordance of online distance education - as well as a core challenge. Providers described a range of online affordances that supported personalisation. In general, the methods reported by online teachers to tailor their teaching appeared little different to face-to-face teaching. Providers were also implementing a range of strategies to achieve more tailored and individualised programmes of learning. Providers expected that rapidly developing data analytics would continue to enhance the level of responsiveness achievable.

Professional development of online teachers

Teacher quality is central to effective teaching and learning. This research reinforces this premise within the online environment. It is also well established in the literature that it is how well technology is used as a pedagogical tool that makes the difference. Such evidence reinforces the importance of appropriate professional learning and development (PLD) for online teachers. Similar to previous research, this study shows that professional development needs are currently addressed primarily through the existing resources of online distance education providers. Within the VLN, providers appear to draw heavily from the resources, skills and experience available within each regional cluster. Larger providers report more centralised programmes of support, commensurate with their scale and resources.

Similar to previous studies, survey respondents in this research were more likely to have engaged in online education PLD that related to technology and the use of technology. These findings are not surprising and are consistent with the view of key informants that effective online teachers require digital competency and digital confidence. Reflecting the on-going emergence of online pedagogy, high proportions of respondents had also engaged in more pedagogically focused PLD.

Learning support

This research identifies variability in the range of supports provided, yet reinforces the importance of learning support and pastoral care for online learners. Participants emphasised the importance of a key support professional that guides, supports and advocates for learning and well-being.

eDeans (VLN) and Learning Advisors (Te Kura) were the primary providers of learning support identified in this research. The clear distinction between the role of eTeacher and the role of learning support person was common within both contexts. As an advocate for online learning success, key informants stressed that the role of the learning support person did not extend to direct teaching inputs.

Findings throughout this research and previous research shows that learning support persons have the most frequent contact with students, and are more likely than teachers to have in-person face-to-face contact with students. For both learning support roles, the importance of open and timely communication, and need for a complementary, partnership relationship based on trust and mutual confidence, was emphasised.

Despite its importance, previous studies have shown the quality and effectiveness of learning support provided in online environments can vary. Some evidence of such variability is provided in this research. Reasons for this would appear to include limited means and incentives available to providers through which home schools can be held to account for their performance in providing

learning support. It is also critical that organisations providing learning supports have the necessary IT infrastructure, capacity and capability to do so.

Variance in the type of support provided also reflected the need to tailor support to individual needs and contexts as well as different approaches by home schools to providing learning support. For example, not all students require, want, or can participate in face-to face contact regularly. In both VLN and Te Kura, parents and family/whānau also undertake critical support roles. Parent and whānau support a key ingredient for online learning success; a nurturing and learning-positive home environment is a consistent factor for successful students.

Monitoring

Survey respondents reported a range of indicators and measures used by their organisations to monitor the engagement of online students in their learning. Commonly used measures were similar to those used in a face-to-face environment. Indicators and measures used to monitor student progress and achievement were also similar to those used in face-to-face schooling. The most frequently reported follow-up in the event that students were at risk of disengagement or underachievement involved the three main support persons - teacher, learner support person, and parents/caregivers/whānau. The critical role of each, and need for effective communication between all three, is reinforced. However, monitoring of supplementary students heavily depends on the home school support as there can be minimal parents/caregivers/whānau involvement under this model. Some of these students interviewed felt it was easy to 'fly under the radar', reinforcing the need for systematic monitoring, early intervention when appropriate, and prompt involvement of parents/caregivers/whānau as necessary.

Face-to-face follow-up was less frequently reported by survey respondents, a finding consistent with other findings in this research. Resolution was typically and initially sought through telephone and through an online communication means. Face-to-face meetings were considered in most cases as a method of escalation if telephone or online contact was unsuccessful, and therefore generally only occurred if required. However, Māori and Pasifika interviewees commented on the extent to which their language teachers went to enable face-to-face interaction, which they found extremely beneficial.

Pastoral care

Pastoral support through the IT system was the type of pastoral care support most frequently reported by providers as being always or sometimes available to full time online learners. Surprisingly, a fifth of survey respondents reported that academic guidance and support was either sometimes, rarely or never available to full time online learners. Other forms of pastoral care reported as less readily available to full time online learners included life-skills support, self-care conversations, mental health services, physical health services, spiritual support, and student run peer support groups. Some full time students considered their health and well-being to be the domain of other professionals and reported examples of how these needs were being met from outside the education system.

The reported availability and frequency of pastoral care to supplementary learners was similar to full time students. This result may suggest that providers generally do not distinguish the pastoral care needs of full time and supplementary learners. Access and availability of mental health services was again reported to be low for supplementary students, indicating this to be an issue across the education system, rather than unique to the online environment.

Overall, the learning support and pastoral care findings suggest the importance of a fit-for-purpose approach. Capacity and capability to identify and address needs through timely, safe and appropriate interventions is self-evident, as is rigorous monitoring of quality and outcomes.

Learner dispositions

Evidence from this research indicates that a balanced approach is required when considering the issue of learner disposition and competencies required for learning success within the online environment. A balanced approach means that the provision of online distance education is designed on the understanding that:

- some learners will be at particular risk in the online environment and that effective protections to mitigate this risk are required
- providers of online distance education have a responsibility to develop within online learners the dispositions and competencies required to participate in online learning and to be successful online learners
- as the diversity of students engaged in online learning increases, the capacity and capability of the system to effectively address diverse learning needs, must also increase
- a range of wider social, economic, and cultural factors within the learner's context will have influence in learner success and must also be enabled or mitigated through service design
- professional care and judgement is required when determining access to online learning environments.

Learner dispositions identified as most important by participants in this research were largely consistent with those previously identified in the literature. These included self-managing, motivated, focused, diligent, and resilient. Other dispositions highlighted in the literature include time management and technological ability and interest. Learner dispositions highlighted by providers and students in this research also tended to focus on those that supported participation and engagement in the online model of learning. While question design may have influenced these findings, a focus on participation related dispositions is consistent with other findings in the research; that is, that online pedagogy is still developing.

Previous research has identified a range of teaching practices that actively develop required learning dispositions and competencies, while also ensuring that learners receive the guidance and support in their learning that they require. Previous New Zealand research also shows that online teachers understand and seek to fulfil their role in developing self-regulated learners and student engaged in knowledge creation.

As digital natives, it is widely acknowledged that today's students bring considerable existing online experience, skills and capability. However, it is also recognised that young people can lack the skills and understanding necessary to purposefully use digital technologies for educational purposes. Developing an understanding of how digital skills may be best utilised for learning remains a core role of the online teacher. Online providers also have a responsibility to develop and provide learning tools and experiences that fully utilise online functionality and benefits. As digital platforms and modes converge, and become more 'routine', greater importance may be given by teachers and learners to dispositions which enhance learning engagement, access, participation and outcomes.

Acknowledgements

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1. Introduction

Background

Online distance education refers to the delivery of curriculum when the teacher and learner are separated by time and space and when distance learning methods are enabled via the internet (Ali, 2017). Full time online distance learners receive all the curriculum online while supplementary learners receive some curriculum online while still attending and receiving curriculum from a face-to-face education service provider. These learners are also referred to as 'dual enrolment' students. They receive tuition from a teacher employed by the online provider school while being enrolled in their home or recipient school. Under this model, the boundary between face-to-face and distance education converges (Barbour & Wenmoth, 2013), however, the source and place of learning remain different (Ali, 2017).

Brief history

The development of online distance education in New Zealand follows a long history of distance education provision (Ali, 2017). Printed media and the postal system were initially used and this approach developed further in the 1920's and 1930's through the use of radio, television, telephone, and film. The late 1960's saw the electronic transmission of resources while computer mediated teaching and learning was introduced in the late 1980's and early 1990's. With the introduction of computers, face-to-face and two-way distance audio and video communication was possible. Pedagogy developed in tandem over this period towards more learner-centred approaches, enhanced learner participation, and more a facilitative approach to teaching and learning. More recently, the networking of computers with high-speed telecommunication technologies has enabled even more collaborative and interactive approaches (Ali, 2017).

Provision of online distance education

Online distance education in New Zealand is currently primarily delivered by Te Aho o Te Kura Pounamu ('Te Kura'), networks of primary and secondary schools grouped in regional clusters, and a variety of tertiary institutions and private education and training providers.

Te Kura has been the main provider of primary and secondary distance education in New Zealand since 1922. The organisation has a statutory requirement to ensure access to education by students who, for various reasons, are unable to attend a face-to-face school. The school delivers to New Zealand students both in New Zealand and overseas, and provides full time and supplementary learning online distance learning. The school began to digitalise their learning materials and move to an online distance education model in 2008, a transition that continues today.

Supplementary online distance education is also currently delivered by networks of primary and secondary schools grouped together in regional clusters. Member schools provide eTeachers who deliver online courses to students who would otherwise be unable to access this curriculum. The situations determining the provision of these services are detailed later in this report. Historically, this national movement was known as the New Zealand Virtual Learning Network Community and the abbreviation 'VLN' is used throughout this report to refer to learners and teachers in this context. The history and development of the VLN have been previously documented in detailed (Bolstad & Lin, 2009; Compton, Davis & Mackey, 2009; Wenmoth, 2011).

Currently, eligibility for online distance education services from either Te Kura or VLN providers are determined by need and by targeting students benefiting most from these services. These include students who are unable to engage in their schooling face-to-face schooling, identified priority learners, and students who otherwise have limited access to curricula choices.

There are currently different models of supplementary online distance education delivered in New Zealand. VLN course typically comprise one hour of synchronous face-to-face class time per week and three hours of self-directed study time supported by the home school. In the Te Kura supplementary and full time context, synchronous, face-to-face contact is undertaken when and as

required by students. This approach follows the philosophy of Te Kura that 'one size fits one' and that education should be student-centred and tailored to individual needs as far as possible.

Māori engagement in online distance education

Previous research in New Zealand has identified the potential of online distance education to be appropriate and effective for Māori (Tiakiwai & Tiakiwai, 2010; Waiti, 2005). When cultural values and practices are integrated appropriately, online approaches can complement and support culturally responsive pedagogy (Tiakiwai & Tiakiwai, 2010). The importance of ensuring that online learning programmes for Māori integrate face-to-face (kanohi ki te kanohi) interactions between teachers and students, and students and students, has been widely discussed (Porima, no date; NZCER, 2014; Tiakiwai & Tiakiwai, 2010). Direct face-to-face contact is important because it develops whānaungatanga, an important foundation for Māori educational achievement (Pihama, et al, 2004; Waiti, 2005).

Online distance education also has the capacity to facilitate iwi (tribal) specific and kaupapa (theme) specific teaching and learning (Tiakiwai & Tiakiwai, 2010). Online learning environments can be facilitative of peer and collaborative learning and therefore particularly supportive of Māori and Pasifika students (Wright, 2010). Acknowledging that relationship based learning supports Māori educational achievement, Alexander-Bennett (2016) reports that a relationship building approach is embedded within the practice of FarNet, a VLN cluster located in Northland.

However, previous studies have also identified that indigenous students and those from lower socio-economic status backgrounds can face barriers to accessing online distance education. These include limited ICT literacy, lack of access to technology and technological supports, and a lack of confidence (Gray & Beresford, 2008; Reedy, 2011).

Benefits of online distance education

Previous research has identified many benefits from online distance learning. These include greater flexibility and choice, and the enabling of collaborative, inquiry-oriented, and student-centred learning (Morrison, Morrison, & Ross, 2016; Zheng, et al., 2016). Online distance education can also improve access to education for priority or disadvantaged learners as well as for those who would not otherwise be able to access a full range of curriculum subjects (Alexander-Bennett, 2016). Teachers actively using online teaching technologies report positive impacts on pedagogy (Wright, 2010). These include becoming more focused on student-centred, active and interactive learning, and being more closely connected to students' prior knowledge and experience. Active engagers also understand that the affordances[1] of online tools and platforms can provide students with particular opportunities to transform and construct new knowledge (Wright, 2010).

Need for research

Authors have previously identified a paucity of research on online distance education in New Zealand (Barbour, 2011; Barbour, Davis, & Wenmoth, 2011; Lai, 2017; Tiakiwai & Tiakiwai, 2010). Overseas experience has also shown that any expansion of online distance education must be controlled by appropriate legislative and quality controls (Hasler-Waters, et al 2014; Molnar, et al, 2017; Watson, et al, 2014).

[1] An affordance is a characteristic of an environment that makes certain types of behaviour or practice possible.

2. Research questions and methods

The Ministry of Education commissioned Cognition Education to conduct research on the factors that drive student and teacher success in online distance education. The following section details the questions addressed by the research and the research methods used.

Research questions

The overarching question addressed by the research was:

What lessons can be drawn from existing online providers about teaching and learning in online environments and what conditions are necessary to support student progression and achievement?

The four main areas and sub-questions examined in the research were as follow.

1. Differences between online and face-to-face teaching and learning
1.1. What is the range of teaching methods and modes of delivery used in online distance education?
1.2. What is the balance between interaction with teachers and working independently in current online distance education?
1.3. To what extent do face-to-face teachers support online teaching and learning?
1.4. How students learn to socialise, interact with teachers, and whether or not this can or does take place outside of normal schooling hours.
1.5. What dispositions and competencies do online teachers need to succeed in the online environment?
1.6. How does online teaching reflect the values, principles and key competencies of the curricula?
1.7. What are current approaches to the professional development of online teachers?
2. The delivery of pastoral care, guidance and support in an online context
2.1. How is pastoral care, guidance and any other additional support provided at different year levels and in response to differing student needs?
2.2. Is pastoral care, guidance and any other support the same or different in an online context and across supplementary vis-a-vis full time tuition.
2.3. How can the quality of pastoral care, guidance and support be identified?
2.4. How do providers measure student attendance (engagement), progress and achievement?
2.5. How do providers respond when students aren't engaging?
2.6. How is support provided to disengaged learners and students at risk of not achieving? What outcomes have been seen?
3. Required dispositions and competencies of online students.
3.1. What dispositions and competencies do students require for success within an online learning environment?
3.2. Do necessary dispositions and competencies differ for students learning online full time or through supplementary tuition?

4. The development of online learning content and materials.
4.1. How online courses are developed and how this differs for supplementary tuition compared to full time tuition.
4.2. The timeframes and costs involved across providers and learning platforms[2].
4.3. How the quality of course content and materials can be identified. What does quality look like in materials and content?
4.4. The level of duplication or rework of existing classroom materials required. To what extent is there duplication in content and material development? Why does this occur?
4.5. What use is made of overseas course content and materials, and if so why?

The research also provided initial insights into the brokerage and management of stakeholder relationships as well as roles and responsibilities regarding the collection and management of student information. These areas were examined in relation to the supplementary context only.

The reader should note that this research did not evaluate current online distance education practice in relation to either quality or outcomes.

Research method

The following methods were used to undertake the research.

Document review

Relevant policy and programme documents were reviewed by the research team to build further understanding of online distance education in New Zealand. The review informed all the research tools developed and the interpretation and analysis of the research findings.

Literature review

A targeted literature review was conducted to identify best practice and contemporary issues in online distance education. The review was particularly focused on Aotearoa New Zealand literature although key overseas references were also reviewed. The review was used to inform research design, data analysis and interpretation, and reporting.

Key informant interviews

Thirteen current providers of online distance education in New Zealand were interviewed either in person, by telephone, or by video conference. Three of these interviews were with staff from one large provider of online distance education, and five participants were Māori or Pasifika providers.

The interviews participants were selected to represent the diversity of current providers of online distance. During recruitment, all interview participants received detail about research so they could make a fully informed decision to participate. Participation in all interviews was voluntary and anonymous. All interviews were recorded with the consent of participants. Analysts worked directly from the recorded audio of each interview and from notes taken during each interview.

All interviews were conducted using a semi-structured interview guide (see Appendix 1) and at a time and place of convenience to each participant. All interviews with Māori informants were conducted by a Māori researcher fluent in Te Reo Māori.

Online survey

An online survey was conducted of teaching and non-teaching staff from provider organisations of online distance education in New Zealand (see Appendix 2 for the questionnaire). Questionnaire design was informed by the document and literature review, the key informant interview findings, and the research objectives. Participation was voluntary and anonymous.

[2] The methods used in the research did not enable reliable data on timing and costs to be collected. Rigorous data would have required methods beyond the scope of this research.

The survey was conducted between 8 and 20 November 2017. Distribution to the sector was supported by sector representatives interviewed in the research as key informants. A total of n=113 questionnaires were completed by Te Kura staff and n=67 by staff from other provider organisations. The findings in this report are reported at the level of the total sample (n=180).

All percentages reported are calculated from the total number of respondents (the 'base'). In cases different numbers of respondents responded to individual question items within questions. Therefore, for some questions the base is shown as a single figure (i.e. n=x) while in others a range is shown (i.e. n=x-x).

Student interviews

Focus group or individual interviews were conducted with full time and supplementary students currently engaged in online distance education. The interviews were conducted either face-to-face, over the telephone, or by video-conference. Whether group or individual interviews were conducted was determined by student availability and location.

All interviews were conducted using a semi-structured interview guide. Different versions of the guide were developed for the full time and supplementary context (see Appendices 3 and 4). Each interview tool was also modified appropriately when used for group interviews. In overview, the student interview covered:

- the experience of online distance education including comparisons to face-to-face
- engagement and interactions with teachers and other students
- modes of delivery and methods
- involvement of parents/caregivers/whānau
- expectations and demands on teachers and students
- learning supports and pastoral care
- dispositions and competencies required for success.

All students were 16 years and over and were engaged in secondary schooling. All participants received detail about research so they could make a fully informed decision to take part in an interview. Participation in all interviews was voluntary and anonymous.

Table 1 shows the number of students interviewed by key demographic characteristics.

Table 1: Student participants in online distance education interviews

	Ethnicity		Location	
	Maori	Non-Maori	Urban	Rural
Male	1	3	2	1
Female	14	9	11	0
Total	**15**	**12**	**13**	**1**

Stakeholder workshop

The key research findings were workshopped with sector stakeholders to ensure that data analysis and interpretation was informed by sector knowledge and experience.

Research limitations

The following limitations in this research should be noted.

- The research sought to address an extensive number of sub-questions. Findings are therefore limited for some sub-questions.
- The research did not have the timeframes or resources required to directly observe online distance education practice. This limits the extent and depth to which current practices were able to be described. It also limits the extent to which the research provides data on how online teaching reflects the values, principles, and key competencies of the New Zealand curriculum.
- This research was not an evaluation of current online distance education practice. Nonetheless, all key informants interviewed were current providers of online distance education and this may have influenced their reports of current practice, lessons learnt and key success factors.
- Attempts were made to interview a diversity of students by gender, ethnicity, level of achievement, type of online learning, and primarily lower socio-economic context. However, the final sample of student interviewed was primarily a convenience sample that comprised students who were able to be recruited within short timeframes and the end-of-year timing of the research. The research team was reliant on online distance education providers identifying student interview participants and this may have also influenced the types of students interviewed.

3. Online teaching and learning

Introduction

- Rather than discuss differences between face-to-face and online pedagogy, many informants preferred to discuss teaching and learning as increasingly comprises face-to-face and online dimensions.
- Some students interviewed had a similar view, describing online as an integral part of their learning, utilised when and as required. They saw their participation as reflecting the system's ability to respond to the uniqueness of learning needs, and to different learning contexts.
- Full time students appreciated the flexibility and choice offered and that they could self-pace their learning, all within a structured and planned programme.
- Some students described a consistency in their online learning process they had experienced, regardless of provider or subject area. This added to their confidence in their ability to navigate and manage their learning online.

Modes of delivery used

Background

- Online distance education is delivered through synchronous and asynchronous modes. Typically, both modes are used to complement respective strengths and weaknesses (Ali, 2017).
- Synchronous modes enable real-time, simultaneous and interactive communication between teachers and students over multiple sites (Ali, 2017). Tools include videoconferencing, chat, live streaming and other forms of instant messaging. Identified limitations of synchronous modes include getting participants online at the same time, and challenges facilitating larger group interaction (Branon & Essex, 2001).
- Asynchronous modes enable anywhere and anytime learning as learners are able to access educational materials and complete work in their own time (Ali, 2017). The learner has time for reflection and can self-pace their learning (Bonk & Zhang, 2006; Skylar, 2009; Meloni, 2010). Coursework is delivered and facilitated through a variety of channels including web, email and message boards.
- In a recent study of a NZ VLN, eTeachers reported using a range of asynchronous digital tools including Google+ community, Padlet, Knowledge Forum, and social media such as Facebook (Lai, 2017).
- Identified limitations of asynchronous modes include a lack of immediate feedback, students not engaging frequently enough, and students experiencing a lack of connection within the learning environment (Branon & Essex, 2001).

Survey findings

The survey respondents in this research, who were online teachers, were asked about synchronous modes of delivery used (see Table 2).

- *Video/web conferencing* and *face-to-face contact* were the two most frequently reported modes used followed by *telephone conferencing* and *chat/messaging* (see Table 2).
- Forms of live streaming were reported to be relatively infrequently used.

Table 2: Modes of synchronous delivery used

"Please tick the modes of delivery that you have ever used synchronously (in 'real time') as an online distance teacher"

Modes of synchronous delivery used	(%)
Video/web conferencing (e.g. Zoom, Skype, Google Hangouts)	87
Face-to-face contact	84
Telephone conferences	61
Chat / messaging (e.g. Vokle, Yammer, Facebook Messenger)	56
Other live streaming	14
Live streaming (e.g. Livestream)	10
Live demonstrations (e.g. Ustream)	10

(n=130)

- It was notable that some key informants felt that current funding models did not allow them adequate face-to-face time with students. This was frustrating when in their professional judgement additional face-to-face contact would support progress and achievement.
- Note that survey findings above do not provide any understanding of the extent to which teachers feel they currently have sufficient face-to-face contact with students.

The online teachers responding to the survey were also were asked to identify the asynchronous modes of delivery they used (see Table 3).

- Almost all teachers (95%) reported the use of email, with the uploading of content (92%) and document sharing (81%) also common.
- Newer online tools such as webinar, wikis, micro-blogging, and podcasts were reported to be less frequently used.

Table 3: Modes of asynchronous delivery used

"*Please tick the modes of delivery that you have ever used asynchronously (in 'students time') as an online distance teacher"*

Modes of asynchronous delivery used	(%)
Email	95
Uploaded content (e.g. presentations, workbooks, other print)	92
Document sharing	81
Text messaging	71
Through a Learning Management System (e.g. LMS based discussion boards)	67
Networking platforms (i.e. LinkedIn, Facebook, Google+, Pinterest, Instagram)	39
Video streaming (e.g. YouTube)	37
General discussion forums (i.e. Reddit)	36
Virtual sticky boards (i.e. Padlet)	33

Modes of asynchronous delivery used	(%)
Webinar (e.g. GotoWebinar, Bigmarker)	19
Wikis	19
Micro-blogging (i.e. Twitter, Tumblr)	7
Podcasts	7

(n=129)

Online student findings

- Students described using a wide variety of learning technologies and tools.
- Student opinion on the range of tools available varied. Some acknowledged that the tools enhanced respective learning activities, whereas others voiced frustration about the fragmentation of learning experiences across platforms.

  When all the activities are on different platforms, it can be quite annoying. It would be better if it was all just one system. Google apps are easiest to use (Online distance education student)

Teaching methods

Background

- The online environment requires student-centric and facilitative teaching methods (Alexander-Bennett, 2016; Ali, 2017; Diaz & Entonado, 2009) and provides students with the opportunity for greater control over their learning (Ali, 2017).
- Half of the eTeachers in Lai's (2017) New Zealand study reported using inquiry-based practices such as flipped learning[3] and knowledge building models.
- The online teacher often learns alongside the learner in the role of mentor, problem-solver and support person (Bennett & Barbour, 2013; Jeurissen, 2015). These online practices reflect principles of ako and a tuakana/teina learning relationship (Tiakiwai & Tiakiwai, 2010), and in this respect, are not new practices.
- It has been observed that both the strengths and limitations of synchronous and asynchronous tools require online teachers to adopt more facilitative and student lead teaching approaches (Murphy & Rodríguez-Manzanares, 2009, cited in Barbour, 2015). Key informants in this research conferred, noting for example that the online environment did not suit "*...stand and deliver teaching...*" nor "*...a teacher as expert...*" approach.
- Despite the apparent need for more facilitative and student-centred practices (Barber, Taylor, & Buchannan (2014), research has shown that online teachers can emphasise the use of teacher-focused practices (Murphy & Rodríguez-Manzanares, 2009; Barbour, 2009). The limited use of collaborative assignments has been previously reported (Tuwhangai, 2010). Earlier New Zealand research also concluded that online teaching was often teacher-directed and dominated by teacher talk (Bolstad & Lin, 2009). The challenge of developing rapport with online students was later suggested by Barbour (2015) as a reason for this contradiction. Limited face-to-face time may also increase the pressure on teachers to cover as much content as possible during synchronous class time. Some students in this research also suggested this.
- Concern has been expressed that online learning might lead to an emphasis on the development of computer skills over academic and thinking skills (Wright, 2010). However, this argument runs counter to common assumptions about online learning, in particular that it supports collaboration, co-construction and new knowledge development (Wright, 2010).

[3] Flipped learning is a type of blended learning that reverses traditional teaching and learning by emphasising the delivery and engagement in instructional content outside of the classroom.

- Lai's (2017) New Zealand study concluded that inquiry-based teaching can and is being implemented in online settings through a range of practices and technologies (e.g. one-to-one guidance, small-group tutorials, synchronous and asynchronous tools).

Survey findings

All online teachers responding to the survey were asked to identify the teaching methods they used as well as the frequency each method was used. Questions were also asked about methods used to build student engagement and to build communities of online learners.

- The teaching method survey result showed some consistency with previous findings of high use of teacher-focused practices. Three-quarters of the teachers surveyed reported they frequently set individual learning tasks (see Table 4). In comparison, more student-lead and collaborative teaching methods were much less frequently reported.

Table 4: Online teaching methods used

"Different teaching methods are listed. In your online teaching, do you use each method frequently, sometimes, rarely or never?"

Online teaching methods used	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Individual learning tasks	75	20	3	-	3
Scaffolding	57	30	7	2	5
Direct instruction	39	46	11	1	3
Quizzes	38	41	14	3	4
Problem-based teaching	30	45	17	4	4
Student-led inquiry	30	40	23	3	5
Project-based	26	39	23	6	6
Small group collaborative	20	44	22	8	6
Large group collaborative	10	26	41	18	6
Ability grouping	8	16	35	31	10
Games based learning	6	28	35	25	6
Tuakana Teina	7	30	21	16	3

(n=103-122)

Online student findings

- Supplementary online learners interviewed also described the experience of teacher-centred methods during synchronous class time. Students attributed this to the need for teachers to adapt their approach to the available contact time. This time was often used to explain the week's learning and learning activities. Limited time and opportunity for group work and engaging with other learners was also reported. This dynamic and impact was compounded by increasing class size. Students' lateness to class and technological glitches could further erode the time actually available for teaching.

- Despite only having one allocated synchronous class hour a week, one teacher interviewed allocated another half an hour after the class to ensure he was available to provide further support as required.
- Students provided varying descriptions of their interaction with other learners during synchronous class time. Some rarely engaged with other learners as the teacher largely facilitated discussion and contributions. More passive or teacher directed engagement was reported as particularly common in core-subject classes such as mathematics and science. Students generally perceived these subjects to be less conducive to collaborative or interactive work online.
- A greater level of student-to-student engagement was reported for subjects with smaller classes and for special interest or extension subjects such as Classics, Graphic Design and Scholarship English. The nature of these subjects, smaller classes and the subject passion of teachers, were all factors believed by students to support greater student interaction. Greater levels of online interaction were also reported at specific times of the year, for example during exam time.

  It's good to get tips and tricks from other students, as they might have skills or experiences from their schools that we haven't had at ours, so you'll often see more students connecting on Google+ during exams. (Online distance education student)

- Consistent with all the findings above, students and key informants interviewed believed that class sizes of 15 to 20 students were optimal for synchronous classes. Classes larger than this were often spilt in two and the class repeated each week. Bolstad and Lin (2009) concurred with the smaller class strategy, noting that online classes of around 10 students were likely to provide a more focused learning environment, and an environment more supportive of collaborative learning.

Building student engagement

Background

- Building learner engagement in their learning is critical, regardless of whether teaching and learning occurs face-to-face or online (Louwrens, & Hartnett, 2015). However, connecting and building rapport with online learners is particularly important in reducing the transactional distance[4] between online teachers and their students (Murphy & Rodríguez-Manzanares, 2008).
- Connectedness and relationship based learning enhances learning success for Māori learners (Bishop, et al., 2003) and ā-tinana (in person) and 'kanohi ki te kanohi' (face-to-face) connections are important for online Māori learners (Tuwhangai, 2010). Initial wānanga may be undertaken to support this; a strategy reported by providers in this research.
- Student engagement comprises behavioural, cognitive, and emotional dimensions and all are important in the online environment (Louwrens, & Hartnett, 2015).
- Behavioural engagement includes attendance and meeting expectations related to learning practices. Cognitive engagement refers to how personally invested learners are in their learning and includes deep thinking and self-regulation. Emotionally engaged learners are comfortable with and connected to the learning environment, other learners, and their learning.
- Behaviour engagement is considered to be required for emotional engagement, and emotional engagement required for cognitive engagement (Gibbs & Poskitt, 2010, cited in Louwrens, & Hartnett, 2015). Student-to-student feedback requires emotional engagement and demonstrates and builds cognitive engagement (Louwrens, & Hartnett, 2015).

[4] Transactional distance is the sense of distance or separation from the teacher experienced by online learners.

- Following the above, social presence, cognitive presence, and teaching presence are therefore critical factors that engage online learners (Louwrens, & Hartnett, 2015). Social presence is the extent online learners feel connected to one another and their teacher. Social presence develops emotional and then cognitive presence.
- Cognitive presence is the extent learners are "…able to construct meaning through sustained communication" (Garrison et al., 1999, p. 89, cited in Louwrens, & Hartnett, 2015). Interaction and collaboration are key to cognitive presence which in turn supports emotional and cognitive engagement (Louwrens, & Hartnett, 2015).
- Positive social presence or connectedness in an online learning environment leads to students feeling emotionally comfortable and therefore emotionally engaged in the learning environment. Gibbs and Poskitt (2010) argue that social presence is a core requirement for cognitive engagement.
- Teaching presence[5] includes the design and facilitation of education activities, including level of difficulty, student interest, and having clear purpose (Louwrens, & Hartnett, 2015). Disengagement can occur when learning activities are uninteresting, irrelevant, too hard, or too difficult (Burger et al., 2012, cited in Louwrens, & Hartnett, 2015). Adequately scaffolding learners throughout the learning journey is important.
- Lai (2017) used Self-Determination Theory as a theoretical framework for understanding how student motivation and engagement in learning could be fostered online. This theory asserts that satisfying three psychological human needs, autonomy, competence, and relatedness, will have a positive effect on learning motivation and engagement. Pedagogical practices effective in meeting these needs will therefore enhance motivation and engagement. Such practices include enabling student agency (e.g. over learning design, having choice), providing academic support, clear learning structure and constructive/enabling feedback (that enables students to exercise control and develop a sense of competences), and developing positive teacher/student relationships and student/student relationships.

Survey findings

Online teachers responding to the survey were asked what methods they used to build the engagement of online learners and how frequently methods were used (see Table 5).

- Reflecting the previous survey findings on teaching methods, individualised methods were generally more frequently reported than more collaborative methods.
- Of all methods examined, peer-to-peer teaching, learning and assessment methods were least frequently reported. This finding is consistent with the earlier findings on general teaching methods used.

Table 5: Methods used to build student engagement in online learning

"Methods to build student engagement in learning are shown. In your online teaching, do you use each method frequently, sometimes, rarely or never?"

Methods used to build student engagement in online learning	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Prompt, personalised student feedback by the teacher	86	11	2	-	2
Relationships with students based on high expectations and non-deficit thinking	75	17	3	1	5
Students provided a choice of topics within a programme	64	26	6	2	2

[5] Teacher presence is a broad term encompassing the establishment and demonstration of teacher identity, beliefs, attitudes, style and practice, for the purpose of realising worthwhile educational outcomes

Methods used to build student engagement in online learning	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Time spent introducing and getting to know each other	60	31	6	1	3
Culturally responsive / inclusive teaching strategies	62	33	2	-	3
Access to anytime/anyplace learning opportunities	58	28	9	1	4
Access to information in different formats	55	38	2	-	5
Communication with student's learning support person and/or base school teacher	54	37	7	1	2
Co-construction (e.g. goals, success criteria, learning activities)	48	38	8	4	3
Student monitoring of their own progress	46	43	6	1	4
Development of community relationships, involvement and support	37	50	7	2	4
Learning focused relationships with parents/caregivers/whānau	37	40	18	1	4
Face-to-face interactions between teachers and students	36	42	18	2	2
Peer-to-peer teaching, learning and assessment	23	36	31	5	4

(n=114-126)

Key informant findings

- Consistent with the literature, key informants stressed the importance of building online engagement and connections before beginning any subject related content, "*...connection first, content later...*"
- No different to face-to-face teaching, online teachers needed to collate previous achievement data and other background information on their students. This might entail making contact with the home school eDean, for example, to understand family background or other context.
- According to one VLN informant, relationship building may be the primary focus for the first two weeks of class. The likelihood of students' engaging in effective online learning was unlikely should the initial connection not be sufficiently established.
- This same informant (above) stressed the importance of 'humanising' the online environment and normalising the online relationship. The online environment could present quite unique ways to achieve this. For example, logging in from home provided opportunities for parents and care-givers to also engage.
- Some informants described the use of flipped learning strategies to maximise the amount synchronous classroom time available to engage students in discussion, active problem solving and deeper. This has also been identified as an online strategy by other authors, with content management emphasised as the student's responsibility during self-study periods (Barbour, 2015; Lai, 2017).
- However, as illustrated through the experience of some learners in this research, teaching skill is required to ensure that learners do not experience such strategies as a lack of teacher support or as being left alone to learn in isolation.

Online student findings

- Some students interviewed reported that opportunities to meet face-to-face with their teacher and other learners in their class helped to build engagement and connection. Some felt that without this initial connection, a genuine and authentic online community would be difficult to establish.
- One student in a Samoan language class was clear that to work effectively with others, they first needed to know who their classmates were, how they connected, and their respective approaches to learning. Building an online community first required, "*...connections with people in the real world...*" She discussed the actions of her teacher to achieve this including regular visits to each learner as well as their families when possible. While this student had not met the other learners in her class in person, shared attributes across learners (e.g. culture, learning objectives) and the teacher's effort to develop family like connections, had built strong relationships. These bonds were reinforced as the teacher regularly encouraged the students to draw upon personal stories and experiences during synchronous class time.
- When also interviewed as part of this research, the teacher above reported that their online student numbers had continued to increase and that student achievement was positive.

  My teacher is always connecting with the students on a personal level. Always asking about their lives outside of their learning. (Online distance education student)

- The importance of teacher presence is reinforced by these student findings. Learners from the language class valued the teacher's regular updating of online learning resources and the posting of feedback. They were motivated to log in regularly to access new resources or next step learning advice. The means of communication took multiple forms, including notifications via Facebook and phone messaging. Despite the distance and virtual nature of this dialogue, the students' felt prioritised by the teacher's responsiveness. The teacher's actions demonstrated teacher care (Klem & Connell, 2004) and an ability to humanise online education (Barber, Taylor, & Buchannan, 2014). Both these factors were also identified by key informants in this study as important success factors.

Building communities of online learners

Background

- It is widely accepted that learning is a social process (Ali, 2017). Learning is best undertaken collaboratively, regardless of whether face-to-face or online (Bonk & Zhang, 2006; Diaz & Entonado, 2009; Er et al., 2009; Martinez-Caro, 2011). A sense of learning community is necessary to sustain educational experiences (Garrison & Kanuka, 2004). Creating a family-like environment enhances the learning process and outcomes for Māori (Bishop and Berryman 2006).
- The ability to create communities of online learners is considered a core benefit of online distance education (Bereiter, 2002; Scardamalia, 2002; Scardamalia, et al., 1989). The affordances of online tools in connecting teachers and learners is considered a core benefit of online teaching and learning (Bereiter, 2002; Bereiter & Scardamalia, 1989, 1993; Scardamalia, 2002; Scardamalia, et al, 1989).
- Collaborative learning is reported to enhance online learning outcomes and the satisfaction of online learners with their learning (Diaz & Entonado, 2009; Er et al., 2009). According to Barber, Taylor, & Buchanan (2014) a sense of ownership over the online learning environment and investing in community building activities, are essential for engaging and maintaining student engagement as well as learners' willingness to take risks in their learning.
- Evidence for the above is provided by Bolstad & Lin (2009). They found that online students who would consider learning online again were more to have experienced organised discussions with other students in their online class compared to those students unlikely to consider further participation.

- Just as in the face-to-face classroom, the online teacher has a critical role in facilitating collaborative learning through online communities (Diaz & Entonado, 2009). Lai (2017) cites previous studies (Anderson, 2008; Zhao et al., 2005) and his own study supports the premise that the complementary use of synchronous and asynchronous tools is needed to build online relationships and online learning communities.
- Practices previously reported as being effective in facilitating shared online learning include supporting to students to initially get to know each other, facilitating opportunities for discussion before and during synchronous class time, enhancing student agency and autonomy, and use of peer feedback (Bolstad & Lin, 2009).
- It should be noted that while online students often desire more contact with their online peers (Bolstad & Lin, 2009; Tuwhangai, 2010), others enjoy and benefit from more independent learning (Otsuka & Stevens, 1997, cited in Jeurissen, 2015). Er et al (2009), for example, observed that online can be particularly enabling of students expressing their thoughts without judgment or interruption from other students.
- Technological developments are increasingly enabling a more collaborative pedagogy (Elbaum, McIntyre, & Smith, 2002). This was frequently observed by key informants in this study and was evidenced by current practice examples. These included virtual break-out rooms and chat functions that are able to be used concurrently with synchronous video-conferencing.
- Research shows that despite the importance of collaborative learning, online learners can feel little sense of community or connection with their online peers (Bolstad & Lin, 2009). Few online learners in Lai's (2017) study agreed their online peers related well to one another and only 28% (n=9) of eTeachers strongly agreed or agreed this was the case. However, 47% (n=15) of eTeachers reported that they supported their students to work together and learn collaboratively and 69% (n=22) desired further understanding of how to develop online communities of learning.
- Māori learners in another New Zealand study experienced distance learning as hindering opportunities to develop collegial support outside of class, however, they considered this to be an important support mechanism (Tuwhangai, 2010).
- The level of social presence experienced by learners is a key factor determining online connection and engagement (Gunawardena & Zittle, 1997; Rovai, 2001). Social presence comprises intimacy and immediacy factors (Short et al., 1976). Intimacy factors include eye contact and physical proximity, while immediacy is the extent of psychological distance between teacher and student and student and student.

Survey findings

Online teachers participating in this research were asked to identify the methods they used to build communities of online learners (see Table 6).

- The two most frequently used methods, *ensuring access to the online learning environment* and *ensuring student voice*, show that access to and inclusion in the learning environment are common strategies currently.
- Notably, 82% of teachers report they frequently or sometime develop *family/whānau support and involvement*.
- While there is considerable potential for co-construction within the online environment (Littleton & Whitelock, 2005), the survey findings show that this is still a relatively infrequent practice compared to other practices.

Table 6: Methods used to build communities of online learners

"Different methods to build communities of online learners are shown. In your online teaching, do you use each method frequently, sometimes, rarely or never?"

Methods used to build communities of online learners	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Ensuring online learning environment is accessible	77	15	2	2	5
Ensuring all learners have a voice	71	20	4	3	4
Develop family/whānau support and involvement	40	42	10	5	4
Acknowledgement of the learning group	39	37	15	6	5
Students work in shared online spaces	31	33	17	13	6
Expectations/goals co-constructed	25	46	15	10	4
Facilitation of shared learning	21	42	23	11	4
Learning connected to different contexts	19	50	24	4	4
Develop wider community support and involvement	19	42	29	5	5
Learning themes/focus co-constructed	16	44	24	12	4
Measures of success co-constructed	14	40	28	15	4

(n=100-113)

- Other methods commonly reported by online teachers to build communities of online distance learners included:
  - Face-to-face meetings/contact (n=7 responses)
  - Establishment of group activities /shared online spaces (n=4)
  - Use of online tools (n=3).

  Group projects, activities, communication, events, discussions, posts…we are just beginning and this will grow.

  Interest grouping. Reciprocity in teaching and learning (ako). Scaffolding respectful peer feedback.

  Padlet is a simple way for students to contribute such things as information, tips about learning.

  Social networking and student special interest groups, led by students.

  Face-to-face meetings in my home…pizza evenings.

  Relevant outings…a central location to meet face-to-face.

  (All online survey teacher respondents)

- The comments from teachers above provide some evidence that opportunities do exist for students to socialise and interact with teachers outside of school hours. However, this data is limited and this question was not explored further in the research.
- Findings throughout this research and from previous research, also show that learning support persons have the most frequent contact with students and are more likely than teachers to have in-person face-to-face contact with students.
- Comments from one 16 year old supplementary student in an area school illustrated this. He described having close relationships with the home school teachers and these teachers having good understanding of him, both as a person and as a learner. By comparison, he did not expect the same type or level of relationship with his online teacher and described this relationship as being more transactional and focused on teaching and learning.

Key informant findings

- The key informant interview data supports the above interpretation of the survey findings.
- Key informants reported increasing, yet relatively recent sector attention, on developing online learning communities (e.g. through increasing use of collaborative project based learning). Advances in technology were identified as a key driver.
- Informants described various developments that were enhancing intimacy and immediacy and therefore (presumably) learner engagement. One example was the introduction of an online enrolment system which had considerably shortened the length of time between enrolment and learners' first engagement with learning materials, teachers, and other learners. Another example was increasing use of synchronous video-conferencing technology that enabled teachers and learners to maintain visual contact (i.e. eye contact) with multiple persons on screen. Video and audio were also being used to provide student feedback and were described as enhancing the immediacy and clarity of feedback when used effectively.
- Consistent with the literature, key informants in this research also highlighted there could be benefits from learners being less connected physically. One example provided was reducing the extent peer pressure or group dynamics might negatively impact engagement and learning in a face-to-face classroom.

  People still want social context. You want some people who want to engage by themselves, but we have made it a requirement within our system that there is a need to have social contact. Within the first 12 days of the programme, we ensure that students are able to engage…we have facilitator tool kits to make sure [facilitators] are engaging with students and tracking their progress. (Online distance education provider - tertiary)

Online student findings

- Supplementary online learners saw two factors particularly contributing towards the development of communities of learning. Firstly, they believed students required a shared class culture. This could be a united vision for the class, common learning motivations, or shared learning goals. Secondly, students believed the shared culture needed to be cultivated and curated by the teacher proactivity.
- The students interviewed with strong online relationships with other students were generally from special interest or extension subjects. These subjects typically had smaller class numbers and this appeared to enable closer connections and a more discussion-based, learner-centred pedagogy. One student described online interactions in these classes as more focused and purposeful compared to a face-to-face classroom:

  In the classroom, your relationships with other students are more complex. Everything else going on their lives comes into the classroom with them. But online you're there by choice and for similar reasons, you have a passion for the subject and you want to learn. (Online distance education student)

- Some full time students described themselves as engaged a learning relationship with their teacher and Learning Advisor but not generally with other students. In part, this was also observed for some supplementary learners. Students who had earlier met their classmates face-to-face reported this had strengthened connections and those not having had this opportunity reported less subsequent connection.

  It really felt like we were one class, because we saw each other again every week. (Online distance education student)

  Peers in your class are all from different schools, so they don't really feel like your classmates. They are just like people also connecting into the call. (Online distance education student)

- Full time and supplementary students had access to multiple platforms/tools that allowed asynchronous interaction with other online learners. They understood the affordances of these to facilitate more collaborative and project-based learning and regarded themselves

as having the skills to engage in such learning asynchronously. However, students reported that such interactions were rare and that teachers were not particularly active in encouraging learner collaborations. Some questioned whether teachers yet had the skills necessary to facilitate effective online learning collaborations. Collaborative learning was typically set up by teachers with students from the same home school. While students recognised this was likely to be most feasible and achievable, it also acted to further limit interactions across schools.

- Three students in a focus group reported limited engagement in an online learning community and did not regard this as a valuable extension to their learning. A fourth student entering the group described how her teacher engaged with each member of the class personally, synchronously and asynchronously, and took special interest in their lives in other subjects and outside of school. The student then described the way he set high expectations for the whole class, and how students held each other accountable as they progressed towards a class achievement goal of all excellences.
- As the fourth student told her story, unaware of the previous students' stories, the other students started interjecting. They didn't know that her experience was possible. They felt they were missing out. They didn't know they wanted it until now. In this interaction, two notable data points emerge: the importance of a family like environment for student engagement, wellbeing, and success, and occasionally students don't know what they don't know until they feel they're missing out.
- Some learners specifically reported that completing work alone could take them longer. Not having ready access to other learners to bounce ideas off could also slow down knowledge generation. These learners described both factors as clear disadvantages of learning online.
- However, other students interviewed reinforced they were engaged in online distance education because it enabled them to be less connected to other learners. In these cases, connections with other learners was not necessarily perceived positively. This included those who highly valued the flexibility of online learning and opportunity for self-pacing.
- Duncan and Young (2009) also identified resistance from some online learners to engage with collaborative group projects. Students in their study experienced online collaborations as forced, cumbersome and time consuming, and as reducing learning flexibility.
- Some students commented on the difficulty of being able to synchronise group task time with other class members as they were enrolled in online learning due to travel and other commitments outside of their education. A full time student with international travel commitments was required to work in multiple time zones and had limited time to engage with other students. Her preference was to work through the required course work with the support of her mother and find examples from her life experiences that supported authentic learning. A dual enrolment Māori student undertook a similar approach, drawing on his sports training programme to give relevance and context to his learning.
- Students indicating a preference for independent learning also identified activities outside of formal education that provided social connection, support, and positive role modelling. Examples included youth and community groups, sports teams, and faith-based organisations.
- Further to the above, some full time online learners described quite an individualistic approach to their online learning (e.g. login, access work, complete activities, communicate with teacher, submit assignments). In describing their learning, these students generally did not refer to more collaborative aspects and overall reported little to no engagement with other students in their online course. This was not necessarily considered to be a negative. This was particularly true for students who had been previously home-schooled. Other students identified a preference for independence as a reason for not connecting with other students. Reasons for this included a dislike of cooperative learning in previous face-to-face schooling and the challenge of co-ordinating meeting times.

  Even if [education provider] did try and facilitate connections with other students, for me personally I wouldn't need it. I know there a lot of students though who might take up that opportunity. (Online distance education student)

Balance between teacher interaction and working independently

- Different approaches to face-to-face contact were reported by key informants interviewed in this research.
- In the VLN environment, courses typically have one hour of synchronous face-to face class time a week with students required to spend three further hours weekly on timetabled self-study.
- Te Kuru classes will include synchronous face-to face class time when and as required. This flexibility and responsibility is consistent with Te Kura's "*...one size fits one...*" approach to learning design.
- Full time Te Kura students are also able to attend face-to-face advisories with their Learning Advisory, with these providing similar personalised support to a tutorial. Online advisories are also being trialled by Te Kura to meet the needs of students who faced barriers in attending an advisory in person.
- A Te Kura informant stressed that it should not be assumed that all students wanted face-to-face engagement. In their experience, online synchronous options can achieve more authentic and effective engagement. Therefore, while Te Kura data showed that student attendance at face-to-face learning advisories correlated with improved learning, it was felt that critical factors were likely to be more about the process and outcomes of engagement and interaction[6] rather than the mode through this occurred.
- A tertiary sector key informant reported that most of their tertiary student engagement was asynchronous and that synchronous engagement was less crucial for these students. Some courses might include weekly face-to-face online catch-ups if required, for example, in the case of collaborative research projects.

Dispositions and competencies required by online teachers

The research findings for this question are presented under the key themes identified in the data. For each theme, relevant literature is summarised followed by the primary data from the research.

General findings

- There was a general view by key informants that effective online teachers did not necessarily require different or additional dispositions and competencies compared to face-to-face teachers. According to one informant:

  A low quality/ineffective teacher in a face-to-face environment will also be a low quality/ineffective teacher in a digital environment. (Online distance education provider)

- However, as previously discussed, there was wide agreement that effective online teachers required the ability to translate and transfer effective pedagogy online. They needed to understand what effective pedagogy looked like in the online environment as well as the ability to use practices and activities to facilitate this. They needed to keep abreast of technological developments and be willing to apply these in order to enhance online teaching and learning.
- Key informants had a similar response to the question of whether online teachers faced additional demands to face-to-face teachers. All teaching is challenging and teachers faced difficulties regardless of the mode of teaching. However, informants agreed that online teachers faced specific rather than additional demands and that the online environment was difficult. It was therefore important that teachers had a desire and passion for online teaching and learning. A supplementary online teaching load needed to be "*...part of, rather than on top of...*" regular teaching commitments.

[6] For example: development of social cohesion; deepening of the teacher/learner relationship; provision of just in time assistance; provision of specific subject support.

Pedagogical truths remain

- It is pedagogy, rather than the mode of delivery, that is key to a successful learning experience (Palloff & Pratt, 2001). Reflecting this, key informants' described online teaching and learning largely in terms that reflected 21st century learning trends. For example, an emphasis on knowledge generation through collaborative learning, co-construction and problem-solving focus, self-regulation, deep thinking, and inter-disciplinarily learning (Bolstad, Gilbert, & Hipkins, 2005).
- As effective online teaching was grounded in the principles and objectives of face-to-face pedagogy, informants were clear that effective online teachers needed to be effective and quality teachers.
- While fundamental pedagogical principles remain the same, key informants agreed that these might look different in an online environment and may require different practices. Barber, Taylor, & Buchanan (2014) recognised this through their observation study in noting that while group work, activities, and getting to know one's students still occurred, the activities and processes used were often different.
- Reflecting the above, effective online teachers need to be able to translate and transfer of effective pedagogy to online and be able to effectively use online tools and affordances in conjunction with teaching approaches and non-technology components (Cheung & Slavin, 2012; Morrison, Morrison, & Ross, 2016; Tamin, et al 2011).

  …it's not about the technology and platforms for learning, it's about the quality of the content that students learn from. It's the learning that's enabled by the technology rather than technology enabled learning. It just drives the wrong paradigm if we get it the wrong way around. (Online distance education key informant)

  Principles and pedagogy of good learning are the same, but you have to do those things differently in an online environment. The aims and objectives of teaching are the same, however, there are different ways of getting there. (Online distance education key informant)

  It all depends on the learning and on the teacher. I have sat in some [online] classes and there's a lot of teacher talk. (Online distance education key informant)

  *If the class and course is set up so students can tailor their access to content, self-pace and so on, there will be less dependency on teacher for content and much greater ability to enable a personalised approach. But this will be harder if there is still a traditional teaching model and high level of dependency on the teacher for content delivery. (*Online distance education key informant)

- Online students interviewed also highlighted the importance of teacher quality, including those describing themselves as more independent learners.

Relationship based learning

- The importance of building a strong and collaborative teacher/learner relationship in the online environment has long been established (Tiakiwai & Tiakiwai, 2010). The presence and availability of the teacher is also an important success factor (Stroet et al., 2013).
- Online learners require a supportive climate that fosters open communication and group cohesion (Duncan & Young, 2009). Relationship building develops trust and comfort in the online environment (Tuwhangai, 2010) and both factors are critical precursors to effective participation in online learning and effective learning (Bennett & Barbour, 2012; Rodriguez, Ooms, & Montanez, 2008).
- Illustrating the above, some learners interviewed in this research revealed they had been reluctant to engage with other learners in their class because they were behind in their coursework or because such engagement might expose gaps in their learning.
- There is a substantial evidence highlighting that educational success for Māori is supported by relationship based learning (Bishop, Berryman, Tiakiwai, & Richardson, 2003), face-to-face interaction (Tiakiwai & Tiakiwai, 2010; Tuwhangai, 2010; Waiti, 2005) and whakawhānaunga (Barbour & Bennett, 2012; Porima, undated).

- Relationship development is particularly important as the online mode of learning alters traditional power structures between teachers and students. Students are required to become less reliant on teachers as their primary support for learning, yet must also be able to communicate with teachers and receive from them the teaching guidance and support they require (Condie & Livingstone, 2007; Chandra & Lloyd, 2008), (cited in Tiakiwai & Tiakiwai, 2010).
- Consistent with Headley (2005), key informants in this research reinforced that teachers must first be able to establish a positive teacher/student relationship and student/student relationships before effective online teaching and learning could begin.
- Some informants described using both online and face-to-face strategies to build teaching and learning relationships, thus demonstrating in some cases, a preference for a hybrid approach to enable a successful online experience.

*Students still require and expect a relationship with their teacher (*Online distance education key informant*)*

Even though our teacher's in [the North Island], we still want him here with us! (Online distance education learner)

Online communication

- Key informants stressed that online teachers needed to be excellent communicators, a competency closely related to relationship based learning, and also previously recognised in the literature (Molnar, et al, 2017).
- Bolstad & Lin (2009) also reported that online teacher need to be proactive in establishing and maintaining communication with their students. This supports the establishment of trust and demonstrates care for each student and their learning (Bolstad & Lin, 2009).
- Key informants in this study stress that online teachers need to be able to tailor communications appropriately for effective online transmission and receipt. Knowing what effective online communication looks like, and how to facilitate this, is again important. For example, as the transactional distance between the teacher and student reduced opportunities for teachers to clarify meaning, feedback to students needs to be clear and succinct.
- It was also important that teaches had the ability and confidence to use an increasing range of communication tools, particularly as these could reduce the time required to provide feedback and other communication. For example, audio or video feedback could be more effective and cost effective than detailed written feedback by email.

*The ability to give succinct, purposeful and meaningful feedback is critical. (*Online distance education key informant*)*

- Students' valued prompt feedback from teachers which indicated the teacher had engaged with their work and which was tailored to their personal learning needs. It was the quality, rather than necessarily the regularity of feedback that was important.
- Students' also described effective online teachers as those which communicated high expectations of them as learners through multiple communication methods. More direct methods included phone calls, emails, text messages or messages through SLS chat functions. Expectations were more indirectly communicated through practices such as the prompt updating of online materials, timely follow-up, the distribution of new resources and exemplars, and acknowledgment of high quality work. Through such actions, students understood they were expected to be regularly online, to be actively seeking new materials, to be proactive in their knowledge development, and to have high expectations and standards as learners.

Student-centred learning

- Key informants stressed the importance of online teachers being able to follow a student-centred learning approach. This required a more facilitative rather than direct instruction approach to teaching (Bernard et al., 2004).
- The importance of teaching approaches that supported choice and flexibility in learning was also emphasised. This was particularly pronounced in relation to student-teacher interactions and teacher responsiveness. One student noted that their teacher primarily used Facebook to communicate with them, "*...because that's where we're at...*"
- Other students discussed experiences of feeling isolated and unsupported in their learning as a result of teacher practices which they believed were indicative of a student-centred approach. One example provided was the experience of teachers only making contact or providing feedback and support once some work had been submitted.
- Bolstad & Lin (2009) reported a similar finding to the above. They described the risk that teacher practices designed to develop greater learning independence can be at the extent to which some online learners feel supported, successful and confident in their learning.

Need for teacher presence

- Key informants described the ability of the online teacher to establish and maintain teacher presence as a critical teacher competency.
- Previous research has described teacher presence being built through curriculum, course design and clear direction, and as laying the foundation for social and cognitive presence (Duncan & Young, 2009; Molnar, et al, 2017).
- Strategies described by informants as building teacher presence included educational design that sustained student engagement during and beyond synchronous contact and ensuring teacher availability and access.

Technology 'catching up'

- Key informants acknowledged that technology had historically shaped and limited online pedagogy. For example, video-conferencing was a tool initially 'borrowed' from a business context and not specifically designed to support best practice teaching and learning.
- Informants concurred with Barbour (2015) in reporting that technological developments were increasingly blurring face-to-face and online teaching and learning. For example, the google suite of classroom tools, were equally being used in online and face-to-face contexts.
- Further, six informants specifically noted that technology was 'catching up with the pedagogy.' Tools were being designed to support effective teaching and learning rather than pedagogy being determined by technology. Such developments were making it easier for teachers and learners to connect and were enabling teachers to focus more on teaching and learning (e.g. rather than focusing on ensuring all students were connected).
- Examples of developments identified by key informants included:
  - use of online polls to identify the context and interests of individual students to inform tailored learning
  - synchronous video engagement (e.g. Zoom, Google Hangout)
  - online chat functions and 'breakout' rooms supporting student led engagement and student-to-student interactions
  - increasing use of data analytics (e.g. enabling individualized self-marking/next steps, real time monitoring of student engagement and progress, QA)
  - online platforms that enable the addition or removal of learning modules to create more individualised programmes of learning.

Previously, the available technology tended to drive the online teaching and learning that occurred, however, increasingly the technology is enabling pedagogy to drive teaching and learning...as it always should. (Online distance education key informant)

The chat function in Zoom has added an important dimension enabling student to student interaction. (Online distance education key informant)

…Google classroom…just gets better and better. From the time we started when we couldn't use it to now, where changes have made it really collaborative. (Online distance education key informant)

…If you use intelligent data to understand who the [individual] learner is, we can start to better design services that meet their needs…If you're really learner centric, then your whole paradigm changes. (Online distance education key informant - tertiary)

…data is all about being able to make continuous improvements…We have a CRM as our student management system and that integrates with our dashboards…dashboards [enable facilitators and supervisors] to go online any time and see where the learners are at. (Online distance education key informant – tertiary)

Every facilitator and advisor has a dashboard which the information from all the various sources on that students learning needs are drawn into the dashboard…the facilitator can see what's going on with a student's engagement and success within a course, and if there are any issues then they'll get in contact with that student's primary advisor. (Online distance education key informant – tertiary)

- Further to the above, key informants agreed that effective online teachers required a base level of *digital competence*. However, the importance of *digital confidence* was also emphasised. This was having a learning mind-set and the ability to interact with digital technology in an adaptive and flexible way. It also meant having online resilience - the ability to maintain composure, focus, and momentum in the face of unexpected events, including technological glitches.
- Other dispositions and competencies considered important by key informants reflected and were largely consistent with key findings across the research. These included:
  - the ability to form and maintain learning relationships that overcome transactional distance
  - collaborative, student-centred, and transformational teaching approaches
  - effective online communication (e.g. clear, succinct, tailored, next steps)
  - the ability to build and sustain teacher and instructional presence, including learning design for sustained engagement
  - subject and curriculum knowledge
  - the importance of 'knowing thy learner' (e.g. ability to detect subtle cues of learner need in the context of transactional distance, use of data analytics to inform next steps).

Values, principles and key competencies of the curricula

Background

- The New Zealand Curriculum (NZC) articulates intended outcomes for young people[7] and describes five competencies[8] believed to be required for living and learning successfully now and in the future.
- The principles of the NZC[9] embody beliefs about what is considered important and desirable within the curriculum and provide guidance to curriculum planning, management and evaluation.

[7] For example: creative; energetic; enterprising; bi-cultural; future focused; confident; connected; lifelong learners.

[8] Thinking; Using language, symbols, and texts; Managing self; Relating to others; Participating and Contributing

[9] High expectations; Treaty of Waitangi; Cultural diversity; Inclusion; Learning to learn; Community engagement; Coherence; Future focus.

- Values are deeply held beliefs about what is important or desirable. The values of the NZC[10] shape the context for thinking and behaviour within schools and provide guidance to curriculum enactment.
- Through their analysis of NZC, Bolstad & Lin (2009) observed that many of the principles, values and key competencies related to personalised teaching and learning. They identified linked sub-themes such as the affirmation of student identity, language, and culture, the importance of building upon prior learning, abilities and talents, and need to address individual learning needs.
- Given this unifying theme, this research primarily examined how online teaching reflected key values, principles and competencies within the NZC (see following).
- Key informants identified some more general examples of how online teaching reflected the broad intent and focus of the NZC, with these most commonly referred to the competencies of *Relating to others, Participating and contributing,* and *Managing self*.
- *Relating to others* and *Participating and contributing* were most discussed in relation to the use of shared online spaces to collaborative learning and project-based learning. Data analytics were again discussed as enabling data to evidence the development of both competencies (e.g. contributions to online chat).
- *Managing self* was typically discussed in relation to the necessity for online teachers to adopt a more facilitative teaching approach and one which built self-regulating and less teacher dependent learners.

Background - personalising teaching and learning

- Personalised learning rejects a one-size-fits-all approach to teaching and learning. Rather the focus is on developing learning programmes that responds to each student's interests, needs, abilities and aspirations (Bentley & Miller, 2006; Bolstad & Gilbert, 2008; Bolstad et al., 2005).
- The ability to provide flexible, tailored learning, is considered a strength and benefit of online education (Er et al., 2009; Harris et al., 2009; Lorenzo & Ittelson, 2005; Simonson et al., 2012), however, anecdotally is also reported to be a contributor to teacher workload stress, if not properly managed.
- Personalising learning in the online environment can provide students with many forms of individualised support and this may enhance students' motivation and continued engagement in their learning (Wright, 2010).
- The effective delivery of personalised teaching and learning has previously been identified as a core challenge in online distance education (NZCER, 2004). Strategies and practices used by New Zealand teachers have been previously identified to include seeking and responding to student feedback, connecting content to students' interests, and adapting the structure and focus of synchronous classes in response to specific issues and needs arising (Bolstad & Lin, 2009).
- Fifty nine percent (n=19) of eTeachers in Lai's (2017) study reported using primarily cloud-based communication technologies to individualise learning and provide individualised support.

Survey findings

The online teachers participating in this research were asked to identify the methods they used to personalise teaching and learning and the frequency methods were used (see Table 7).

- *Building on prior/existing knowledge* was reported as frequently used by most (83%) online teachers.

[10] Excellence; Innovation, inquiry, and curiosity; Diversity; Equity; Community and participation; Ecological sustainability; Integrity; Respect.

- Other frequently used methods were use of student feedback to guide next teaching/learning steps, responsiveness to student interests, and personalised goal setting.

Table 7: Methods used to personalise online teaching and learning

"Different methods to personalise teaching and learning are shown. In your online teaching, do you use each method frequently, sometimes, rarely or never?"

Methods used to personalise online teaching and learning	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Building on prior or existing knowledge	83	16	-	-	2
Student feedback used to guide next steps	73	22	3	-	3
Responsiveness to student interests	70	26	1	1	2
Personalised goal setting	64	30	3	1	2
Represent students' language/culture/identity	52	39	5	1	3
Co-construction	50	41	5	2	2
Place-based learning	30	53	11	4	3

(n=111-121)

- Other methods commonly reported by online teachers to personalise teaching and learning included:
  - listening and responding to student voice (n=9 responses)
  - regular student contact (n=8)
  - group learning/common interests (n=5)
  - responding to individual interests/goals (n=4)
  - involving whānau (n=3).

I will make a trip to where they live so I understand their place.

Building up learner profiles collaboratively with student and/or whānau. Using a strength-based approach to apply strengths more broadly to boost learner confidence and autonomy.

Development of cross curricular modules and options to support culture and passions.

...I'm brokering exchanges between individuals so that they can practice their skills without me. We can record these Skype sessions with an iPhone for later analysis.

Presentations by learner groups about their own location, culture, to share with others in the class activity.

Students have opportunities to lead the learning - presenting their learning, creating and running kahootz quiz, taking over as teacher.

(All online survey teacher respondents)

Online student findings

- A student who was on an overseas exchange was able to continue with learning Te Reo Māori due to the online availability of the course. The teacher went beyond what might be considered her call of duty, to ensure that this student received Māori language input by meeting with him regularly via video conference. She mentioned that while the time zones were different, she didn't mind, because she knew he couldn't get the language support in the country he was in, and so she wanted to provide it. An added bonus was that the family

would also log on from time to time, during the lessons, to speak Māori with him also, so that he continued to feel connected and supported with his learning.

Key informant findings

- The key informants interviewed in this research identified examples of how the general affordances and context of online supported personalisation. These included:
  - greater responsibility, freedom and opportunity for self-directed learning
  - focusing learning experiences within appropriate geographical context of students (e.g. North Island, South Island)
  - increasing use of open-ended project based learning enabling localised responses
  - increasing use of individualised learning plans and modularised programmes of learning to meet individual learning goals (see further below).
- Te Kura is moving towards more tailored programmes of learning that meet the learning goals of individual learners. This can mean that rather than require a student to complete a whole year course, a specific area of required learning may be defined and undertaken.
- As part of the individualised approach, the organisation supports all full time distance students to have an individualised learning plan[11]. Banks of questions within the online learning system are used by Learner Advisors and their students to identify individual learning goals and objectives and to build the personal plan. Each plan comprises a number of sections[12] with My Culture soon to be added. Te Kura is currently focusing on enhancing learner agency and family/whānau involvement in the development of plans.
- The student-centred approach reflects 21st century pedagogy and inquiry based learning. The teacher is increasingly being positioned as facilitator of learning. 'Know thy learner' is therefore critical, this supported through practices such as regular checking in and the monitoring of data analytics to track engagement and progress.
- Te Kura expects that on-going developments in data analytics will increasingly enable more effective monitoring of progress and achievement and more targeted interventions. For example, initial interventions may be computer driven is appropriate (e.g. automatically generated emails), followed up more directly by the teacher as required.

Professional development of online teachers

Background

- Teacher quality is central to successful learning (Hattie, 2012) and the research findings reinforce that this is no different in the online environment. It is how well technology is used as a pedagogical tool that makes the difference (Higgins, Xiao, & Katsipataki, 2012).
- Following the above, it has been recognised that appropriate professional learning and development (PLD) for online teachers is critical (Higgins, Xiao, & Katsipataki, 2012; Savage, et al, 2013; Tamim, et al, 2011).
- Since the early 2000s, ICT PLD in New Zealand has been provided nationally through a cluster based model. An objective was to develop a nationwide base of digital competence and the digital strategy of the time was focused on integration rather than specialisation. While a number of tertiary providers have offered courses and qualifications in online teaching, not all of these have continued. In 2013, Barbour & Bennett reported that there was currently no formal certification of online distance teachers in New Zealand.
- In the VLN context, PLD is typically provided through the resources of the VLNs and includes induction programmes, on-the-job training and the inter-personal transfer of skills, mentoring, online communities of professional practice and learning, and PLD Hui (Barbour & Bennett, 2013; Lai, 2017).

[11] However, such plans are not compulsory and not all students have an individualised plan.

[12] e.g. My Community/Circle of Influence, My Future, My Passions and Interests, My Learning

- Historically, PLD provided to support online teachers has tended to focus on the technology itself rather than the pedagogy (NZCER, 2004; Bolstad, 2004; Trewern & Wenmoth, 2008).

Survey findings

All survey respondents were asked if they had ever engaged in any PLD specifically intended to support their work in online distance education (see Table 8).

- The greatest proportion reported engagement in *IT/digital competency* and *online management systems* related PLD. This finding is consistent with the previous research above.
- However, the current survey also shows high proportions of respondents engaged in the more pedagogically focused PLD. Three quarter or more of respondents reported engagement in PLD in areas including online pedagogy, teaching methods, learning relationships, and online privacy and confidentiality.

Table 8: Online education PLD undertaken

"Areas of PLD that may be relevant to online distance education are shown. For each of the following areas, please indicate whether you have or have not ever engaged in PLD that was specifically intended to support your work in online distance education"

Online education PLD undertaken	Have engaged (%)	Have not engaged (%)	Can't say (%)
General IT/digital competency	89	9	2
Online LMS	88	8	4
Online SMS	87	11	3
Developing online learning relationships	79	18	4
Online privacy/confidentiality	78	19	3
Curriculum/subject area	76	21	4
Developing teaching/learning resources	75	23	3
Online/digital pedagogy	74	19	7
Using specific teaching methods online	74	21	5
Future focused learning	68	24	7
Supporting online learners	67	28	5
Culturally responsive online pedagogy	64	28	8
Building communities of online learners	61	31	8
Asynchronous modes of delivery	56	29	15
Synchronous modes of delivery	54	33	13
Using online resources or courses	54	36	11
Mentoring/coaching others	50	45	5
Use of data analytics	50	39	12
Other data related (e.g. security, sharing)	48	39	14
Leadership in online education	43	48	10

(n=118-144)

Potential gaps in PLD provision

Potential gaps in the current provision of PLD were examined by asking all survey respondents whether they had any areas of unmet PLD need in relation to online distance education.

- Twenty-one responses to this question were received, however, 12 of these provided general comment and did not identify specific needs. General comments included reports of limited time to implement skills and knowledge gained through PLD and one report of limited support available to teachers when managing difficult/high-risk students and situations.

- No clear or common areas of need were identified through the remaining comments provided.

Key informant findings

- The reports of key informants interviewed in this study largely reflected the existing evidence. In the VLN context, providers delivered a range of PLD including hui and small group training, peer mentoring, just in time learning, handbooks, self-reflection and the sharing of skills and expertise across network members. Informants from organisational providers described online teaching support materials, internal PLD programmes, online professional practice frameworks, and active communities of practice.
- What became evident across all key informant groups was that good teachers, whether they taught online or in a face-to-face setting, would do what was required to get their students through their course work, including the utilisation of a digital skill set that for most was not present in their pre-service teacher education, and was either learnt through the process of online teaching, or through PLD.

4. Pastoral care, guidance and support

Supports to online learners

Background

- In the context of online distance education, 'learning support' refers to the supports received by learners in addition to the teaching of curriculum. Examples include ensuring that students are able to access the internet, are supported in their use of self-study periods, and have additional access to their teacher as required.
- It is widely established that learning support and a focus on student well-being is critical to the progress, satisfaction and achievement of online learners (Bolstad & Lin, 2009; Davis, 2011; Barbour, 2015; Davis & Niederhauser, 2007; Pratt & Trewern, x; Velasquez, Graham, & Osguthorpe, 2013).
- Some evidence for the above comes from Bolstad & Lin (2009) where almost half the online students in their study said they would be encouraged to undertake online learning again in the future if they had enough support from their schools or if they had a good teacher.
- Over half (56%) the eTeachers in Lai's (2017) recent New Zealand study believed online learners required more academic support than face-to-face learners (Lai, 2017). The physical distance between the teacher and students, and difficulties this could present in developing closer personal relationships with students, was considered a key reason for this.
- In this research, persons providing learning support to online distance learners are referred to generically as *learning support persons*. Depending on context, specific terms are also used to describe these people; mostly eDean in the supplementary context and Learning Advisor in the Te Kura context. Both roles have primary responsibilities within respect to the relationship with parents, caregivers, family and whānau. For dual enrolment students, there can be minimal contact between the eTeacher and the home, whereas this relationship is considered crucial in the face-to-face learning environment.
- In the VLN supplementary context, learning support is provided by eDeans located within each home school. The critical role of the eDeans has been previously discussed (Lai, 2017) (see later detail of the eDean role). Additional student supports may also be available by individual VLN, such as the online student portal provided by NetNZ (Lai, 2017)
- For Te Kura and full time learners, the learning support role is undertaken by Learning Advisors (see later detail).
- In both VLN and Te Kura, parents and family/whānau also undertake critical support roles. In Te Kura and for full time learners, an appointed parent or other family/whānau takes the role of 'supervisor' and provides home based support. They are also asked to be guarantors of the legitimacy of all student work submitted. Consistent with these findings, 77% of teachers surveyed reported either frequently or sometimes being engaged in learner focused relationships with parents, caregivers and whānau. However, one-fifth of teachers reported they rarely or never did this.
- Given the differences and potential challenges of online learning, the pre-preparation of online learners, including thorough orientation, is considered important (Roblyer, 2005; Roblyer, Davis, Mills, Marshall, & Pape, 2008).
- A strong and supportive relationship between the online teacher and the eDean is also crucial in ensuring a comprehensive and effective overall programme of support (Bolstad & Lin, 2009). Twenty five percent (n=8) eTeachers in Lai's (2017) recent study saw the need for greater involvement by home schools and better communication between the eTeachers and eDeans.
- Despite its importance, the quality and effectiveness of support provided in online environments can vary (Bolstad & Lin, 2009; Pratt & Trewern, no date), and in cases can be inadequate (Jeurissen, 2015). According to Bolstad and Lin (2009) online students are often not well supported, regardless of the nature of the online tools used.

Engagement, progress and achievement

All survey respondents were asked to identify the indicators and measures used by their organisations to monitor the engagement of online students in their learning (see Table 9).

- Commonly used measures; *frequency of work submission* (89%), *participation in activities* (82%), and *quality of work submitted* (73%) are not surprising and perhaps would be similar in a face-to-face environment.
- The common use of *monitoring log-in frequency* (87%) is consistent with key informants' reports of the increasing use of data analytics for monitoring purposes.
- The frequency and quality of collaborative learning with peers were the indicators least frequently reported by survey respondents. These findings are consistent with other findings from the survey that indicated that collaborative learning is a developing area of online practice.

Table 9: Indicators and measures used to determine student engagement

What indicators/measures are used by your school or organisation to determine engagement by online distance students?

Indicators and measures used to determine student engagement	(%)
How regularly work is submitted	89
How often students are logging in	87
Number of activities participating in	82
Quality of work submitted	73
How accessible and responsive students are	71
Quality of student participation	69
Duration of time logged in for	66
Timeliness of work submitted	64
Extent students reach out for help and support	55
Student preparedness for teaching and learning activities	44
How often students connect with each other	35
How well students work together	34
Other	8

(n=143)

- The majority of Māori and Pasifika learners engaged in this research attributed their success in online learning to their teachers and to the support of their families. One group of full time online students attended class every day at a learning centre and worked through their course work with the support of a facilitator. Additional subject matter experts were also available to support them in person. Some reported less success in subjects where such expertise was not available and in cases, course withdrawal. This example suggests the benefits of a hybrid approach to online learning, particularly for at-risk students.

- Other examples of hybrid approaches undertaken by Te Kura included whānau days where learners and their families could meet teachers at the start of a course. Student support sessions were also held in regions where students could attend to gain further learning support. Different organisations also held wānanga or extended intensive learning opportunities which Te Kura students were invited to attend. Some iwi were also beginning to offer school holiday support for students including online learners.

All survey respondents were also asked to identify the indicators and measures used by their organisations to monitor student progress and achievement (see Table 10).

- The survey findings are again not unexpected and are again likely to be similar in the face-to-face environment.

Table 10: Indicators and measures used to determine progress and achievement

What indicators/measures are used by your school or organisation to determine progress and achievement by online distance students?

Indicators and measures used to determine progress and achievement	(%)
Formative assessment	84
Assessment of current curriculum level	80
Attainment of NCEA unit and achievement standards	79
Performance on NCEA achievement standards	79
Assessment of literacy and numeracy	60
Collection and interpretation of student voice	53
Reflection on development of key competencies	49
Reflection on development of self-management skills	49
Parent/whānau/caregiver reports or voice	44
Assessment against National Standards	44
Standardised tests (e.g. PATs)	43
Digital fluency	24
Assessment against other frameworks (e.g. Youth Employability Skills Framework)	21
Reflection using cultural criteria	20
Assessment against graduate profiles	15
Other	7

(n=136)

Disengagement and under-achievement

Bolstad & Lin (2009) suggest that early intervention is important on the online environment, particularly as struggling students can fall into a vicious cycle of disengagement and further withdrawal.

All survey respondents were asked to identify the follow-up employed by their school or organisation in the event that online students were at risk of disengagement or underachievement (see Table 11).

- Not expectantly, the most frequently reported follow-ups involved the three main support persons for online learners - teacher, learner support person, and parents/caregivers/whānau. These findings reinforce the critical role of each, as well as need for effective communication between them, a point emphasised by key informants.
- Face-to-face follow-up was less frequently reported by survey respondents, a finding also consistent with other findings from this research. Key informants reported that resolution was typically initially sought through telephone and online communication and that escalation to face-to-face meetings generally only occurred if required.

Table 11: Follow-up if student engagement or achievement is not meeting expectations

What follow-up is employed by your school or organisation in the event that engagement or achievement by online distance students does not meet expectations? Please tick as many as applicable.

Follow-up if student engagement or achievement is not meeting expectations	(%)
Student contacted by teacher	96
Student contacted by learning support person	89
Parents/caregivers/whānau/supervisors contacted	78
Meetings between teacher, student, and/or others	60
Meetings between learning support person, student, and/or others	64
Design/implement remedial actions/strategies	58
Other	7

(n=132)

Key informant findings

- Usually senior teachers, eDeans are involved in determining student appropriateness for online learning and provide induction, academic support, and pastoral care to each home student. They are expected to be advocates for each student's online learning and learning success within the school. They also maintain the primary relationship between the school and home, communicating with home as required in relation to each student's online learning.
- The key informants interviewed identified critical learning support roles undertaken by eDeans and/or Learning Advisors. These included:
  - ensuring access to all required learning infrastructure
  - learner advocacy
  - engagement/monitoring
  - relationship and communication with home
  - interventions if required.

- Common to both the VLN and Te Kura context was the clear distinction in roles maintained between the eTeacher and the eDean or Learning Advisor respectively. While the primary role of the learning support person could be described as advocate for each student's online learning success, key informants stressed that this did not extend to any direct teaching inputs, nor were any duplication of teaching inputs between teachers and support persons.
- Key informants from VLN in this study reported increasing focus on ensuring that eDeans had the dispositions and competencies specifically required to be effective in the role, "*...not just anyone who has space in their timetable...*"
- Informants stress the importance of open and timely communication between the teacher and the learning support person and a partnership relationship based on trust and mutual confidence.
- Consistent with previous studies, key informants acknowledged that the type, quality and effectiveness of learning support provided could vary.
- Variance in the type of supports provided reflected the need to tailor support to individual needs and contexts as well as different approaches by home schools to providing learning support. The need for a personalised approach was illustrated through the student interview findings, with different students reporting different levels and types of support needed.
- Key informants reported face-to-face and in person contact as an important learner support, however, not all students required, wanted, or could participate in this type of contact regularly. Identified examples of face-to-face support included first term 'e-days' (where VLN students met together with their teachers) and in some VLN schools, the grouping of all online students within the same form class. Field trips, camps, and other extra-curricular were provided for supplementary and full time learners alike. Full time Te Kura students were also able to attend face-to-face advisories with their Learning Advisory, with these providing similar personalised support to a tutorial. Online advisories were also being trialled to meet the needs of students who faced barriers in attending an advisory in person or who preferred the online option.

  Home school/dual enrolment school support varies across schools. The home school still has the responsibility to deliver pastoral care supports. It has been critical to ensure that alternative education providers have the IT infrastructure, capacity and capability required to be effective partners. (Online distance education student)

Online student findings

- The full time students interviewed valued the role and support of Learning Advisors and easy access to their teachers through multiple channels.
- In addition to synchronous class time and learning advisories, full time students described email, text messaging, phone calls, and Facebook as methods used to communicate with teachers.
- As previously detailed, full time students who preferred more independent learning and/or who did not require additional learning support, were often accessing support and social connectivity through other groups and activities.
- Supplementary students described eDeans as undertaking care and guidance roles and that their teachers were primarily focused on teaching. Students typically reported limited involvement of their parents with their online teachers and generally little active engagement with parents by online teachers. Supplementary learners received teacher reports three times a year and parents were able to meet with teachers if desired. This level of parental engagement is likely to be typical of most face-to-face schools.

  I get a huge amount of care from the eDean...not as much from the online teacher. (Online distance education student)

  Parent engagement is really just in the form of the reports that they get back. My parents only hear about what I tell them. (Online distance education student)

- Supplementary and full time learners interviewed placed high value on the role of their eDean or Learning Advisor. They appreciated their work in brokering learning conversations with their online teacher and being advocates for their learning. In many cases, students did not expect the teacher to provide support, care or guidance directly; they were expected to be responsive to the eDean or Learning Advisor's recommendations and subject experts.
- Full time students needing interactions with other students in the form of peer support appreciated the role of the Learning Advisor in brokering these connections. Students also described the role of Learning Advisors in facilitating social interactions, such as rock climbing or going to the movies. Opportunities for face-to-face group tutorials at local community venues were also mentioned, although students were unsure of how well these events were attended.

  We really liked meeting students from other schools on the ski trip. By the end it felt like we were one big family. (Online distance education student)

- High-achieving and self-managing full time students indicated less reliance on their teacher and Learning Advisor, however, placed high value on their role in supporting personalised learning. These students were easily able to access and progress through learning materials with minimal guidance.
- Students describe the quality of interactions based on the teachers' expectations for their success. It is important to note that these interactions are not restricted to face-to-face or synchronous interactions. Students describe a teacher's marking work and providing asynchronous formative feedback as an interaction. Factors influencing quality include timeliness, relevance, and the expectations expressed in the feedback. Some students have never interacted directly with an e-teacher apart from through formative and summative assessment, and yet see that teacher as having high expectations of them. As per the student comment below, authenticity is influential also.

  The feedback is quite personal, it's always directly about what we've completed and specific to what we've been learning. (Online distance education student)

- Although students valued their skills in self-management and contributing online, when compared to classroom teachers some felt online teachers lacked authority or influence over learning behaviour and engagement. They acknowledged that there are ways to establish improved authority online, yet suggested that online teachers did not see themselves as being able to demonstrate authority through a video feed, discussion forum, or feedback. Students agreed that the first step to establishing authority is to build quality online learning relationships with students and between students. This way teachers could better assert themselves and influence student engagement.
- Students identifying as Pasifika or Māori valued online teachers' demonstration of cultural competence in their responses to student learning needs. This competence was shown in various ways, with students respecting teachers who connected with them as an individual first, and then adapting their approach to connect with their cultural identity. Students describe improved engagement and confidence connecting with culturally responsive online teachers synchronously and asynchronously.
- For the student's parents, this represents life opportunities that were not available to them as students in a remote, rural area. As such, they are very supportive and engaged.
- Full time students who had previously attended a face-to-face school reported difficulty in making the transition to online distance learning. Similarly, supplementary students who had face-to-face support in other subject areas but not in their online classes, had some difficulty establishing required organisational and time management skills. In both instances, students described the important role their parents played supporting the transition. Noted, these students had stable home environments and parents who were engaged in their learning regardless of the medium of delivery.

- A Māori dual enrolment student experienced a considerable delay between submitting their enrolment and the enrolment being confirmed. While initially motivated to learn online, the delay reduced their willingness to engage in the course materials once they were available. Disengagement was compounded by a lack of home school support and communication, both with the student and their family. Motivation diminished further when the delays experienced meant that coursework requirements flowed over to the Christmas holiday period.

Pastoral care for online learners

Background

- Supports provided to online learners should go beyond academic matters to include personal, social and cultural support (Tuwhangai, 2010; Velasquez, Graham, & Osguthorpe, 2013). Previous studies have reported that online learner can report greater levels of emotional and social support in their learning, in part, because of the greater individual attention received compared to a face-to-face environment (Foundation for Blended and Online Learning, 2017).
- However, it has also been observed that online students may not be aware or may chose not to use available supports (Bolstad & Lin, 2009). A New Zealand study reported that Māori students can feel 'whakamā' in seeking support and may not be proactive in doing so (Tuwhangai, 2010).

Survey findings

Full time online distance learners

All respondents to the survey were asked to identify the pastoral care available to their *full time* online distance learners and how available each type of care was (see Table 12).

- Not surprisingly, IT system support was reported by most respondents (93%) as always or sometimes available.
- While three-quarter of respondents (73%) reported academic guidance and support to be always available, a fifth reported this as sometimes, rarely or never available.
- Other forms of care reported to be less frequently available may be similar to face-to-face schools, however, such comparison was not undertaken in this research.

Table 12: Pastoral care supports available to full time online learners

"Types of student pastoral care are shown. In your school or organisation currently, is each type always, sometimes, rarely or never available to full time online distance students?"

Pastoral care supports available to full time online learners	Always (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
IT system support	82	11	2	-	6
Academic guidance and support	73	16	2	2	8
Checking-in	68	15	1	2	14
Career guidance	57	28	4	1	10
Mentoring	57	24	7	-	12
Life-skills support	34	27	12	5	22
Self-care conversations	33	36	6	3	22

Pastoral care supports available to full time online learners	Always (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Mental health services	19	25	15	13	28
Physical health services	17	27	15	12	29
Spiritual support	7	11	18	31	34
Student run peer support groups	8	11	19	26	37

(n=102-121)

- Thirty five survey respondents responded to a question that asked them to identify the most critical pastoral care for full time online learners.
- The forms of care most commonly identified were:
  - access to appropriate staff when needed (n=11 responses)
  - mental health support (n=8)
  - IT system support (n=4)
  - support from e-Dean (n=4)
  - support to develop specific skills/strategies (n=3)
  - whānau involvement (n=2).
- Further to the findings above, it is notable that the survey respondents reported that mental health services were relatively infrequently provided compared to other forms of pastoral care examined in the survey (see Table 13). Over a quarter of respondents reported that these services were rarely or never available (28%) and the same proportion did not know (28%).

Further comments made by survey respondents regarding critical pastoral care for full time online distance learners are shown below.

> *Face-to-face contact is critical for the majority of online learners.*
>
> *Relationship with a dedicated Learning Advisor/facilitator of learning and pastoral care.*
>
> *Care and interest must be paid to the learner as a person FIRST. Their work return must be a second priority to their hauora.*
>
> *Psychological, spiritual, mental, physical all important for students. Distance learning is isolating.*
>
> *Distance education can be isolating and students struggle to connect. Keeping motivated and engaged can be a massive struggle and often leads to depression with students.*
>
> *Involvement of the whānau is critically important as it can be sometimes difficult to contact and engage some of our students due to a variety of issues.*
>
> *Time management skills, learning and assessment checklists, regular communication between student and on-line teacher - in order to provide a timely support framework.*
>
> *Safe and caring environment, positive relationships with teachers/supervisors, availability to answer questions, discuss issues, initial guidance into self-directed learning.*
>
> *Life skills, motivational skills, having someone to talk to about any issue they may have that may hinder their learning in anyway at all.*
>
> (All online survey teacher respondents)

Supplementary online distance learners

Survey respondents were also asked to identify the availability and frequency of pastoral care to *supplementary* learners (see Table 13).

- Care provided and the availability of care was similar to full time students.
- *Academic guidance and support* was again reported to not always be available (19% Sometimes/Rarely/Never) and one in ten respondents (11%) did not know.
- The reported frequency with which mental health services were available to supplementary students was very similar to the full time student results. Assuming supplementary students have the same level of access to these services as full time face-to-face students, this finding suggests that the provision of mental health services may be a general issue across schools and not just in the full time online context.

Table 13: Pastoral care supports available to supplementary online learners

"*Types of student pastoral care are shown again. In your school or organisation currently, is each type always, sometimes, rarely or never available to supplementary online distance students?*"

Pastoral care supports available to supplementary online learners	Always (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
IT system support	77	12	2	-	9
Academic guidance and support	71	16	2	1	11
Checking-in	66	17	1	2	15
Mentoring	57	20	7	2	15
Career guidance	55	20	7	1	17
Life-skills support	31	29	12	4	25
Self-care conversations	28	23	11	6	32
Physical health services	21	21	12	16	31
Mental health services	19	21	12	16	32
Student run peer support groups	12	14	17	22	36
Spiritual support	7	12	21	24	36

(n=97-124)

Online learner findings

- Supplementary learners recognised that their online teachers demonstrated teacher care in a number of ways. These included:
  - being authentic in their interactions/engagements
  - personalised engagement
  - focused attention and feedback
  - individual opportunities
  - co-construction and inquiry-based learning.

  Teachers online can still demonstrate care … but not in the same ways that a teacher in a classroom would. (Online distance education student)

- Supplementary students recognised it was easy to slip behind or "*...fly under the radar*" in the online environment and as discussed, some students had experienced little or no support from their home school.
- Supplementary students having received eDean support valued this input, in particular, assistance with transitioning to online, developing organisational and self-management skills, and ensuring the school and home environment were supportive of successful online learning. They also reinforced the importance of the e-Dean and teacher maintaining a strong relationship, open communication channels, and regular monitoring of progress and work completion.

  It's good to know that someone is there to know that you are doing work. (Online distance education student)

- These reports from supplementary students are consistent with critical aspects of the eDean role described by key informants and in the literature.
- Some full time students previously enrolled in face-to-face schooling believed they received a higher level of care and support compared to their previous schooling. Generally, these were motivated students with clear goals. A view was expressed that health and well-being issues were largely the domain of other professionals or groups, for example:

  I have a youth group that I'm a part of, and the youth workers there are really well trained and supportive. They kind of play the role of mentors. My parents and church community play that role more than [education provider]. (Online distance education student)

- Valued roles of the Learning Advisor identified by full time Te Kura students included:
  - workload management support
  - ensuring enabling conditions for learning.
- Some full time learners reported that their parents were particularly engaged in their learning and with their Learning Advisor. Examples of this were seen in the following situations:
  - previously home-schooled students now enrolled to complete NCEA levels 1, 2 and 3 online
  - a student who had transitioned to online learning after having experienced difficulties in a face-to-face school and who appreciated the online opportunity to achieve required NCEA credits.

  She is there when [learning support person] visits for meetings... when I'm on the phone or online with [learning support person] my Mum will sometimes ask me questions...sometimes Mum will kick me out of the room to ask questions to [learning support person]. (Online distance education student)

- High-achieving, self-managing students described their parents/caregivers as having high trust in their ability to progress independently. Parents/caregivers would check in from time-to-time but otherwise largely took a hands-off approach. These students also valued the learning support role undertaken by Learning Advisors and eDeans and tended to focus on the academic support they provided.

5. Learner dispositions

Background

- One view in the literature is that online learning will not suit some students and access should be restricted to learners who bring necessary dispositions for success in the online environment (Bolstad & Lin, 2009; Lai, 2017). These have been previously identified to include capability for independent and self-regulated learning, self-motivation, direction and discipline, time management, and technological ability and interest (Barbour & Reeves, 2009).
- In conclusion to their study of secondary students learning Te Reo Māori through online distance education, Jeurissen (2015) advocated that educators and policy makers should consider disposition and competency related questions when determining access to online learning. Questions related to students, provider and eTeachers and included whether:
  - students had the prior knowledge required to engage in the course and the motivation to succeed eTeachers understood the importance of 'connectedness' with the students and had the capacity and tools required to achieve this
  - providers had the systems and infrastructure required assure effective and timely delivery
  - within their broader social community, students had sufficient access to practical support and advice (including fluent speakers of Te Reo Māori for those learning Te Reo).
- Discussing the issue of learner dispositions, Lai (2017) observed that features of the online learning environment may be positive or negative depending on the dispositions of online learners. Over half of the eTeachers surveyed in this study agreed or strongly agreed that online enabled more flexible teaching and learning practices. However, it was recognised that this flexibility could also create difficulties or unrealistic expectations for students lacking skills in areas such as personal time management.
- Online learners often fit the learner profile described through the dispositions for online success (Barbour & Reeves, 2009; Kirby & Sharpe, 2010, cited in Lai, 2017).
- However, the learner profile is also somewhat idealised and is increasingly unhelpful as the diversity of students engaged in online learning increases (Bolstad & Lin, 2009). The VLN involved in the Lai (2017) study had high proportions of both low and high achievers in NCEA and VLN key informants in this study reported the same. However, these informants also acknowledged that students are screened pre-enrolment for their suitability for online learning and that VLNs had a responsibility not to enrol students at obvious risk of failing within the online environment.
- Dispositions and competencies required for online success have also been discussed as attributes that should not be considered at an individual level or as a problem relating to maturity. Rather, the required dispositions and competencies can be developed and providers have a responsibility to develop these through the services delivered (Bolstad & Lin, 2009; Lai, 2017).
- Further to the above, Bolstad & Lin (2009) believe it is particularly important that teachers and learners do not view students as having the primary responsibility to manage themselves effectively in the online environment.
- Willems (2012) also asserts that online supports should address the learner's social, economic, and cultural context and should therefore involve a broader network beyond the education provider (e.g. family, friends, wider community).
- From their review of the literature, Bolstad & Lin (2009) identified practices previously reported by online as used to develop both self-managing, and sufficiently supported students. These included:
  - building rapport
  - clear course plans and establishing realistic and achievable expectations
  - direct questions regarding progress, questions or problems

- regular and prompt email communication
- prompt follow-up of any student not maintaining an active online presence
- providing different ways for students to work and learn online.

- The majority of the eTeachers in Lai's (2017) recent study agreed or strongly agreed they sought to develop self-regulated learners through their teaching. Further, just over half agreed or strongly agreed they sought to develop students to be knowledge creators.
- As digital natives, it is widely acknowledged that today's students bring considerable existing online experience, skills and capability. However, it is also recognised that many young people lack skills and understanding to purposefully use digital technologies for educational purposes and developing this remains a core role of the online teacher (Wright, 2010).

Survey findings

Using a scale of 1 to 10, all survey respondents were asked to rate the importance of different learning dispositions for online learning success (either full time or supplementary[13]) (see Table 14).

- Dispositions identified as most important were largely consistent with those identified in the literature as well as those identified by key informants (see later).
- The survey results show an emphasis on dispositions that support engagement and participation in the online mode of learning. Learning dispositions are generally rated as less important. This result may reflect how the question was framed and respondents' interpretation of the question and care should therefore be taken when interpreting the data.
- However, the result above is are consistent with other findings from the survey which also showed a particular focus by teachers on ensuring student participation in the online mode of learning. As the use of digital platforms and tools becomes more 'routine', providers may attribute greater importance to other aspects of online pedagogy. This assertion was supported by a key informant in this research who reported that as the online learning environment improved, teachers and students were more able to focus on the core tasks of teaching and learning.

Table 14: Reported importance of learner dispositions

"*Learner dispositions are listed. Using a scale where 1 = not at all important and 10 = critical, please rate each on how important it is to being an effective online distance learner (supplementary or full time)*"

Reported importance of learner dispositions	Important (8-10) (%)	Somewhat (4-7) (%)	Not (1-3) (%)	Can't say (%)
Self-managing	89	8	2	2
Motivated	86	11	2	2
Focused	76	20	1	3
Diligent	73	23	2	2
Resilient	73	20	4	2
Persevering	71	25	1	3
Can-do attitude (agentic)	71	25	2	2
Inquiring	69	27	2	2

[13] Sector representatives consulted during the development of the questionnaire reported that dispositions would not be different for full time and supplementary learners and this question was therefore not asked separately for each group.

Reported importance of learner dispositions	Important (8-10) (%)	Somewhat (4-7) (%)	Not (1-3) (%)	Can't say (%)
Reflective	67	30	2	2
High self-expectations	67	28	1	4
Critical thinker	66	29	3	2
Resourceful	66	30	2	2
Aspirational	60	34	4	2
Self-aware	60	34	4	2
Patient	58	34	6	2
Cooperative	58	34	5	3
Creative	49	40	9	2
Self-assured	48	44	6	2
Reciprocal	46	48	2	4
Brave	38	50	11	2
Social	26	54	18	2

(n=122-129)

Key informant findings

- Key informants concurred that a balanced approach was required in relation to online learning dispositions. The influence of the family/whānau context on progress and achievement was also highlighted.
- Informants generally agreed there were dispositions that supported online learning success and there were those that didn't. Professional care and judgement was therefore required when accepting online enrolments.
- However, informants also acknowledged that as digital natives, most students now had existing online capabilities and experience, and indeed, high expectations that they would learn online. This included experience, capability and expectation regarding the forming of online relationships.
- Informants saw this context as reinforcing the responsibility of providers to deliver services that actively developed and supported required dispositions (e.g. self-regulation). A common example given was that while most students had online capability, providers had a critical role in supporting students to harness and use this potential for successful learning.
- One informant deeply involved in the design and development of online learning programmes also reinforced that online providers had a responsibility to provide learning tools and experiences that fully utilised online functionality and benefits. A failure to do undermined student potential and potentially enhanced the risk of failure. For example, if online programmes were relatively passive and non-engaging, students may be more likely to be distracted by other, more engaging online material.
- Similar to the survey findings, the disposition for success commonly discussed by informants also tended to focus on those that supported participation and engagement in the online model of learning. These included; motivation, clear learning goals, organisational skills, self-management, the ability to contribute online, time management and focus, initiative and problem solving skills. More general learning dispositions were again less frequently discussed.

- Question design may have again influenced key informant responses. However, a focus on participation related dispositions is consistent with other findings in the research and further suggests that online pedagogy is still developing.

  There will be some students whose environment will make it difficult. We need to be careful not to set up students for further failure…There is a vetting process. We have a list of student competencies for success that we ask the deans to use in determining enrolments. (Online distance education provider)

  It is wrong to say that the learner needs to be a self-regulated, independent learner before they enter into an online learning space. This is something that develops and can be developed with appropriate supports, checks and balances within the system…[organisation] is still developing an understanding of what these system level supports look like in the online environment… [they might include] automated prompts built into the LMS based on data analytics. (Online distance education provider)

Student findings

- The students interviewed were also asked to identify dispositions and competencies required to participate in and progress within the online environment. Nearly all described lower-level skills in self-management, time management, and organisational skills. Higher-level learning skills were again less frequently mentioned. Digital literacy or fluency was also not commonly mentioned. Once again, question design is likely to have shaped these responses, as would the students' high level of comfort in the online environment. Students may also not have a shared language to articulate what 'higher-level learning skills' look like.
- Many students interviewed were high-achieving, self-regulating learners who had enjoyed and benefited from the flexibility of online learning. However, these students also acknowledged it was easy it go "*…missing in action*" in the online environment. They stressed the importance of teachers maintaining active engagement with all learners (i.e. teacher presence) and actively building student self-management and responsibility, along with close monitoring of learner engagement and progress.
- Students in full time online distance education described variability in the experience of high-expectations from teachers. Students who struggle with self-management and subject content are regularly overlooked by teachers who prioritise independent and high-achieving students. High-achieving students knew of less-capable students who felt neglected by Learning Advisors and eTeachers. The interpreted the lack of Learning Advisor or eTeacher proactivity as their own lack of potential; students framed this as an expression of low expectations.
- Students stressed the important role of teachers, eDeans and Learning Advisors in supporting learners to develop learning and other goals and to connect these aspirations to their online learning.

  Students first need support to form their goals and explore how online learning will help them connect to that goal. (Online distance education student)

- Students believed that goal setting was a key component to doing well online, but not all students had the skills or discipline to execute the actions required to achieve those goals. Before teachers, eDeans or Learning Advisors focused on success in specific subject areas, students believed that they needed support developing an independent purpose for learning online, and that they had to own this purpose and have choices in the way they enacted this purpose through their learning.
- Some students felt they had made limited progress and were disappointed in this. They acknowledged struggles with self-management and the level of flexibility around their learning, "*…you need to know how to motivate yourself. Sometimes it is hard, especially when you don't have a deadline or a teacher right there…*" This further highlights the importance of appropriate system supports and the capability of systems to identify emerging needs in a timely and tailored way.

- When asked if they would approach online learning any differently in the future, students commonly talked about the importance of time management, organisation skills, and self-management. On reflection, it was recognised that adjusting to the online environment took time and required the establishment of personal processes and systems to manage new demands and independence.
- The findings above are consistent with Duncan and Young (2014) who also advocate an online pedagogy that balances the goal of learner centeredness with a strong emphasis learner responsibility.
- It was apparent that students in larger, urban or semi-rural schools taking special interest subjects had high levels of self-motivation and regulation. These students generally had clear educational and vocational goals and linked their motivation to this. A similar relationship was also apparent for students that had a clear sense of the important role of education in their lives generally.

  I really want to do something with my life. These are the important years where you put in the hard work and it determines the rest of your life. (Online distance education student)

- The findings above are consistent with the reports from sector informants who stressed that supplementary learners needed to have clear and meaningful goals for their online learning. Students "…*needed to know why they are here*". Taking online courses could not be "…*a fill-in*", for example, to resolve a timetable gap. As indicated in the findings above, a lack of goals and clarity is likely to be risk factor for online disengagement and underachievement.

6. Online learning content and materials

Online course development

Background

- The digitalisation of existing print resources and the development of new online content and learning platforms has been characteristic of the transition from face-to-face to online teaching and learning.
- Online learning environments can provide students with rapid and flexible access to content and information resources (Wright, 2010).
- Students can also work with and manipulate resources in ways that suit their working preferences and which allow them to produce and publish of their own texts (Wright, 2010).

Survey findings

All respondents were asked to identify the frequency with which their school or organisation used different approaches for developing online distance teaching and learning resources (see Table 15).

- The survey findings show that many different approaches are currently used. Fifty percent or more of respondents reported frequently or sometimes using seven of the nine approaches examined.
- The findings also show that resources are commonly developed 'in-house.' The most frequently used approaches were the in-house *development of whole-course standardized resources* (81% frequently/sometimes used) and *digitalisation of hard-copy resources* (86% frequently/sometimes). The latter finding would indicate that the duplication or rework of existing classroom materials is currently a common practice.[14]
- Various forms of *teacher developed resources* were also frequently or sometimes used by approximately 80% of respondents respectively.
- The least frequently used approaches were Student curated resources using online multi-media resources (40% frequently/sometimes) and Purchase of pre-developed standardised resources (47% frequently/sometimes).
- The latter finding above suggests relatively infrequent use of 'overseas' content and materials; this also reported by a number of key informants.

Table 15: Approaches used to develop online teaching and learning resources

"In your school or organisation, is each approach used frequently, sometimes, rarely or never when developing online distance teaching and learning resources"

Approaches used to develop online teaching and learning resources	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Develop whole-course standardized resources in-house	58	23	6	4	9
Digitalisation of hard-copy resources	53	33	8	3	3
Teacher developed resources lesson-by-lesson	40	39	10	6	4

[14] This is supported by Te Kura key informants who reported that the organisation's transition to online began with a focus on the digitalisation of existing printed resources. Some Te Kura survey respondents described the digitisation process and the development of up-dated, more interactive and engaging online content, as on-going.

Approaches used to develop online teaching and learning resources	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Teacher curated resources using online multi-media resources	35	47	6	2	11
Teacher developed resources as needed /appropriate (e.g. responsive to current events)	33	48	10	3	7
Access repositories of teacher-developed resources	32	41	13	3	12
Resources accessed through open-source platforms	24	42	14	5	16
Student curated resources using online multi-media resources	15	25	22	11	27
Purchase pre-developed standardised resources	14	33	22	13	19

(n=115-122)

> *We don't have the funding to purchase resources, everything we use is found, adapted, created on an as needed basis.* (Survey respondent)
>
> *Developing online courses completely in-house with links to suitable external material, is extremely time intensive, requires a high level of skill in both subject matter and way to deliver the material. It is very demanding, and some things that look as if they would be quite simple to develop take an extremely long time to draft the content for, and to develop in the online space. I don't think it is adequately understood just how much is involved is one wants high quality learning materials. It is way more than ' find something on the internet and cobble something together'. Attention to detail is imperative to ensure everything is right* (Survey respondent)

Resource development (secondary school level)

Approaches used to develop online teaching and learning resources were analysed for respondents working in secondary level online distance education only and who answered at least one item in this question (see Table 16).

- Because many respondents worked across multiple year levels, their resource development responses were not able to be specifically analysed by year level of student.
- The sub-group analysis showed similar results to those for all respondents (see previous table). *Digitalisation of hard-copy resources* was again commonly used (93% frequently/sometimes) as were the various forms of *teacher developed resources*.
- *Student curated resources* and *Purchasing pre-developed standardised resources* were again least frequently used, however, 43% of secondary level focused respondents reported they sometimes purchased pre-developed resources.

Table 16: Approaches used to develop online teaching and learning resources (secondary school level)

Approaches used to develop online teaching and learning resources (secondary school level)	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Digitalisation of hard-copy resources	63	30	8	-	-
Teacher developed resources lesson-by-lesson	50	39	8	3	-
Teacher developed resources as needed/appropriate (e.g. responsive to current events)	50	37	8	-	5
Develop whole-course standardized resources in-house	50	21	11	8	11
Teacher curated resources using online multi-media resources	40	48	5	3	5
Access repositories of teacher-developed resources	38	43	13	5	3
Resources accessed through open-source platforms	36	31	15	8	10
Student curated resources using online multi-media resources	23	28	23	10	18
Purchase pre-developed standardised resources	13	43	18	13	15

(n=36-40)

Quality of course content and materials

All respondents were asked to identify the frequency with which their school or organisation used different criteria to assess and ensure the quality of online resources (see Table 17).

- The number of criteria frequently or sometimes used by the survey respondents is again notable.
- Few respondents reported rarely or never using most criteria examined. Exceptions were *Relevance to student culture and identity* (12% rarely/never used) and *Adaptiveness to learning styles/preferences* (14% rarely/never).
- Not surprisingly, the most frequently used criteria were *Alignment with New Zealand Curriculum levels* (93% frequently/sometimes used), *Alignment with NCEA achievement standards* (88% frequently/sometimes), and *Evidence of subject matter expertise* (95% frequently/sometimes).
- *Alignment with online pedagogy* was frequently used by two thirds (66%) of respondents and sometimes used by 22%.

Table 17: Criteria for determining quality of online teaching and learning resources

"In your school or organisation, is each approach used frequently, sometimes, rarely or never when developing online teaching and learning resources?"

Criteria for determining quality of online teaching and learning resources	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Alignment with New Zealand Curriculum levels	89	4	2	-	5
Alignment with NCEA achievement standards	81	7	2	1	9
Evidence of subject matter expertise	76	19	2	1	4
Clarity and appropriateness of text	70	20	3	1	7
Alignment with New Zealand Curriculum key competencies	69	22	3	1	5
Ability appropriateness	68	26	1	-	6
Alignment with online pedagogy	66	22	6	1	6
Age appropriateness	63	28	3	-	6
Compatibility with online learning delivery tools and methods	59	31	3	1	7
Developmental stage appropriateness	57	33	2	-	8
Impact of graphics / illustrations	56	34	6	1	4
Relevance to student interests	50	39	3	1	7
Alignment with principles of effective learning design	50	35	3	3	9
Relevance to current knowledge and trends	49	37	6	2	6
Flexibility and openness (e.g. to support individual student's interests and passions)	47	42	7	2	3
Relevance to student culture and identity	38	45	11	1	5
Adaptiveness to different learning styles or preferences	32	52	11	3	3

(n=108-119)

Criteria used to determine resource quality (secondary school level)

Quality criteria used was analysed for respondents working in secondary level online distance education only and who answered at least one item in this question (see Table 18).

- The results at the secondary level sub-group were similar for the total sample (see previous table).
- The most frequently used criteria were *Alignment with New Zealand Curriculum levels* (97% frequently/sometimes), *Alignment with NCEA achievement standards* (100% frequently/sometimes), and *Evidence of subject matter expertise* (95% frequently/sometimes).

- Few respondents reported rarely or never using most criteria examined. The exception was for *Adaptiveness to learning styles/preferences* (15% rarely/never).
- The result for *Alignment with online pedagogy* was similar to the total sample, with two-thirds of secondary level focused respondents reporting frequent use of this criteria.

Table 18: Criteria for determining quality of online teaching and learning resources (secondary school level)

Criteria for determining quality of online teaching and learning resources (secondary school level)	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)	Can't say (%)
Alignment with New Zealand Curriculum levels	92	5	3	-	-
Alignment with NCEA achievement standards	90	10	-	-	-
Evidence of subject matter expertise	74	21	3	-	3
Clarity and appropriateness of text	68	24	3	3	3
Alignment with New Zealand Curriculum key competencies	68	21	3	3	5
Ability appropriateness	68	32	-	-	-
Age appropriateness	68	32	-	-	-
Alignment with online pedagogy	66	29	3	3	-
Developmental stage appropriateness	65	30	3	-	4
Compatibility with online learning delivery tools and methods	61	34	3	3	-
Flexibility and openness (e.g. to support individual student's interests and passions)	55	32	5	5	3
Relevance to current knowledge and trends	53	40	5	3	-
Relevance to student interests	47	47	3	-	3
Alignment with principles of effective learning design	45	45	3	5	3
Relevance to student culture and identity	45	47	5	3	-
Impact of graphics / illustrations	42	47	8	-	3
Adaptiveness to different learning styles or preferences	37	53	7	8	-

(n=37-38)

Key informant findings

Broad themes

A number of broad themes emerged from key informants' discussion of their experience and practice in the development of online teaching and learning resources.

- Blended learning approaches were commonly discussed. These might integrate learning workbooks, text books and electronic resources. A blended approach was considered important so not to disadvantage students with constrained internet access.
- Informants acknowledging the wider educational trend away from textbooks recognised this as a phenomena in both face-to-face and online contexts.
- Student-centred approaches can mean less initial focus on the mode of content delivery and greater upfront attention on what content will engage learners and meet their learning needs. Co-curation of resources by teachers and students using available online resources, was commonly discussed.
- General agreement that there currently exists wide variance in the quality of online resources being developed and used (e.g. from digitalising PowerPoints to fully interactive online content).
- Organisations were at different stages of capacity and capability to achieve higher quality resources and informants identified a range of reasons for this (e.g. budgets, FTE capacity, stage of digitalisation strategy).
- While some purchasing of external content was reported, this did not appear to be a frequently used approach. This conclusion is consistent with the survey findings on this. Informants recognised that overseas content may not be contextually appropriate within the local curriculum.
- Informants described increasing sophistication of the use of data analytics to inform the evaluation and revision of materials.
- Increasing focus at tertiary level on ensuring that resources reflect and address industry/sector needs.

> *[We are] moving continuously from a teaching model where the teacher provides all the learning resources to the model where teachers are increasingly supporting students to develop their own learning programmes. (Online distance education provider)*
>
> *We're more focused on enabling teachers to build content or find content that matches where the kids are at and the interests of those kids…There's so much out there in the online space that's freely available to teachers and students, and they can find those resources and co-curate their learning…We want an evolving and co-created approach to content and materials.* (Online distance education provider – tertiary)
>
> *Historically there has been a lot of duplication and repetition of course material developed…there has been [an attitude] that New Zealand is different… [We are] increasingly seeking to engage with existing resources…* (Online distance education provider)
>
> *Where we started off it was just putting PDFs online…we know that that doesn't actually make for good learning…by decreasing the amount of courses…we have been able to focus on the key points of the resources that have created engagement and replicate those.* (Online distance education provider – tertiary)
>
> *…you need absolutely excellent knowledge about the individual, you need to understand where the data is coming from, and put the learner [and learner engagement] in the centre. Mass produced resources do not do that. We'll use material from wherever we can get it if it's the right fit. (Online distance education provider – tertiary)*

Development processes

Reflecting the range of provider organisations interviewed, the key informants described two main approaches to online resource development; teacher developed, and development by centralised, dedicated design teams.

- VLN informants described a high reliance on teacher developed or modified resources, a finding consistent with the survey data.
- One informant described their networks use of a standardised framework which required eTeachers to work through a series of questions and stages when developing resources. Attention was also given to how resources could be developed through the teaching process itself (e.g. recording a lesson that could be used again by a future group of students). An objective was to achieve efficiencies in the development process and to reduce the potential for duplication.

  Have we [already] got it? What's available online? What can we create? (Online distance education provider)

- Identification of open access protocols within VLNs to encourage and support the sharing of online resources developed.
- However, limited time and resources within VLNs also restricting more coordinated resource development and economies of scale and effort.

  …this is something our teachers have to do themselves…within Google classroom…using a lot of visual materials through power-point… (Online distance education provider)

  Teachers are making up their own courses/content using tools such as Education Perfect. [VLN] has a subsidy and pays for the license that the schools then pay for. (Online distance education provider)

  We could definitely do better at bringing all resources together to make it easier for teachers, but again we're just not resourced for the time to do that. Teachers are only paid for an hour for each half hour lesson. (Online distance education provider)

- The larger provider organisations interviewed generally reported dedicated educational design (ED) teams and systematic development and quality assurance processes. For example, content written by teachers would go through a comprehensive process of review and development by ED staff. One organisation was migration existing NCEA print materials to their online platform with the ED team enhancing the material for online use as appropriate (e.g. phasing of active and passive learning, addition of videos, links to online careers information).

  We have instructional designers, learning designers, subject matter experts and digital librarians…we have a whole product development process and it will take about 250 professional hours to design a single course. We will also quality assure that course against the NZQA framework. So the lecturer / tutor will essentially work with this team to get the course up online… (Online distance education provider – tertiary)

Time and costs involved

- The key informant interviews and online survey used in this research were not appropriate methods for generating reliable data on the time and costs of online resource development.
- In general, however, key informants acknowledged that while upfront costs and time could be substantial, later cost savings and efficiency gains often accrued. Identified example of this included:
  - the ease and speed with which adjustments and updates can be undertaken
  - the ease with which local relevance/context can be enhanced (e.g. using local photos)
  - the availability and use of digitalised resources in face-to-face classrooms also
  - efficiency gains from online marking
  - centralised resource development freeing teachers up to focus on teaching and learning
  - opportunity costs (e.g. costs otherwise incurred if specialist teachers are unable to teach in their areas of expertise).

It becomes a very expensive exercise. There is significant upfront investment in course and content development, but once it's done, it's done. (Online distance education provider)

Course developments in response to changes in NCEA standards can now be undertaken online. The change process is a lot quicker and no longer results in high amounts of printed materials becoming obsolete. (Online distance education provider)

We have built [x] courses across [x] qualifications, and we're finding that face-to-face classes are [now] using these resources to flip the classroom. (Online distance education provider)

…an achievement standard may have life of 5 to 6 years and during this time it can be easily adjusted or updated as required (Online distance education provider)

Because the content and learning design is already done for you, the facilitator can focus more on teaching and supporting the students. (Online distance education provider)

Quality assurance

- The range of quality assurance practices described by key informants was again reflective of the different organisational and provider contexts from which informants were drawn.
- Similar to the resource development findings, quality assurance processes could generally be categorised into two main categories, teacher moderated (VLNs) and centralised (larger providers).
- VLNs
  - teachers primarily responsible for quality
  - monitoring of online courses and content by ePrincipals
  - face-to-face site visits and meetings between eTeachers and ePrincipals at least yearly.
- Kura
  - focus on greater organisational control over the quality of materials developed by teachers
  - academic committee approval for all online course development
  - common framework for teachers through the LMS when developing learning materials and experiences
  - all teaching resources within the LMS subject to technical review process (to ensure online functionality) and then QA by curriculum leaders
  - evolution towards a more student-led and student informed learning content and design (e.g. informed by student feedback, research, needs analysis).
- Code Avengers
  - online courses and material developed following design rules informed by best practice online pedagogy[15]
  - use of gaming principles and techniques (e.g. sound effect, videos, animation), stories, and real world contexts to deepen student engagement and enhance relevance and meaning of the learning experience
  - difficulty levels of core courses set to be appropriate for 80% of students, "*…it is easy to create something that will work for the top 20% of students…*"
  - extension and engagement for higher ability students and for remedial achieved through online strategies/tools (e.g. optional 'hints', extension options, supplementary exercises).

[15] For example: balance/transitions between passive and active learning; limiting number of unfamiliar concepts/words introduced; scaffolding of difficulty.

7. Additional questions

Relationship brokerage and management

This additional research question focused on the brokerage and management of stakeholders in the supplementary context, and primarily in relation to VLN.

Reciprocal exchange

- Each VLN operates under an exchange model where member schools contributing an eTeacher are allocated a number of enrolment places within online courses provided by the VLN.
- Students from member schools not contributing an eTeacher, non-member schools, and individual students (e.g., adult learners) may also enrol at a cost.
- Course provision is essentially determined by supply and demand and through the brokerage role of the ePrincipal. Principals identify the course and teaching needs which exist within the network and the availability of teaching staff within the VLN to meet the need. This negotiation typically commences towards the end of each academic year and reportedly can be a complex and time consuming process.
- Within each VLN, the need for an online course typically arise from one of four situations within the home schools, these are a:
  - limited number of student enrolments (i.e. face-to-face course not viable)
  - teacher shortage[16]
  - timetable clash for student
  - clash between student and teacher.
- In the supplementary context, the roles and responsibilities of the provider[17] and home or recipient school[18] are articulated in a Memorandum of Understanding (MoU).
- Each MoU agreement is binding for the full school year and any amendments in provisions must be in writing and signed by both parties. Dispute resolution procedures are specified with the protection of students a primary concern.
- Responsibilities of the *provider school* detailed in a MoU reviewed for this research related to:
  - provision of teaching staff (with appropriate qualifications and competencies)
  - resourcing of teaching staff, eDeans and other support staff based on agreed provisions
  - ensuring that all students enrolled in an offered course are treated equitably
  - delivery of course content and material (using effective teaching practices and principles)
  - assessment (e.g. all summative NZQA assessment, providing/marking summative assessments, assessment feedback, managing assessment appeals, reassessment and resubmission, recording and reporting of assessment/achievement, quality management of all assessment)
  - quality management systems for all courses/programmes of learning
  - release of eTeachers to attend meetings as required
  - all legal and industrial responsibilities and conditions as the eTeachers employer
  - fulfilling intellectual property rights agreement.
- Responsibilities of the *home school* detailed in the reviewed MoU related to:
  - course/qualification enrolment, registration, fees, attendance, and withdrawal
  - informing the provider school of any specific conditions/needs of enrolled students

[16] Identified as now being experienced in Auckland due to teachers leaving the city as a result of the cost of living.

[17] School providing the eTeacher.

[18] School within which the eStudent is based.

- student access to required infrastructure and materials) (e.g. internet access, online resources, textbooks, google apps)
- provision of eDean support
- assessment (provision of supervised assessment environment, monitoring the authenticity of assessed work, reporting internal assessments)
- providing information to the provider for confirmation regarding registered standards and assessment information lodged with NZQA for a student enrolled with the provider
- enabling students to provide feedback on their online learning (e.g. surveys, interviews).

Other stakeholder relationship and management practices identified by VLN key informants are summarised below.

- An integrated, one-stop website for all VLN.
- Home school retains the primary relationship with the family and responsibility for family engagement and communication (e.g. informing home and students about the need for online teaching).
- Regular reporting by the VLN to each member school Principal on the performance of the network (e.g. number of students, withdrawals, achievement).
- ePrincipals:
  - may attend subject confirmation events in each home school to support communication
  - provide feedback on the performance of eTeachers to each home school Principal
  - conducts exit interviews with ETeachers if required and feeds back to the home school Principal as appropriate.
- Student evaluation surveys undertaken yearly to provide student feedback on course content, delivery, teaching and communication.
- Regular online and face-to-face meetings between regional cluster members and nationally between clusters.
- Regular other networking and communication between the Principals of each member school.

> *It has been the ePrincipals role to attend the option evenings of each school so that parents know about the online options and plans. This information is also expected to go into each school's curriculum handbook. (Online distance education provider)*

> *[As an eTeacher] it was only when we were looking at poor engagement or attendance that I'd work with the eDeans... [there are] very clear processes and procedures around how to deal with important things. You know that your first point of contact is the eDean and [then] ...the ePrincipal...you wouldn't involve the ePrincipal unless it was something major.* (Online distance education provider)

Student information and data

This additional research question focused on the collection and management of student data between provider and homes schools in the supplementary context and again primarily in relation to VLN.

Data protocols

Data protocols reported in the dual enrolment (supplementary) context include the following.

- All assessment data owned and managed by the home school.
- Provider school provided with basic student information only (e.g. name, email, NSM number, past record of learning).
- Upon enrolment, ETeachers need to access any additional student information deemed important from the home school.

- Home schools set up a 'virtual mark book (i.e. shared google doc) accessible by the eTeacher and eDean. Enrolment, attendance and assessment data is recorded within the mark book.
- Each eTeacher reports home through the student report process of each home school.
- *Provider school/eTeacher* responsibilities relating to student assessment include:
  - recording results in the virtual mark book
  - checking that all students' NZQA entries are correct (e.g. correct standards and NZQA number are entered)
  - NZQA moderation.
- The responsibilities of *home schools* relating to student assessment include:
  - ensuring that each student's marks in the virtual mark book are transferred to their record of learning
  - correct entry of the provider school NZQA code so that results are also send back to the provider school
  - via the virtual mark book, reporting all internally assessed summative results to NZQA as required.

Safety and privacy

All sharing of pastoral care related information between eDeans, eTeachers and ePrincipals is undertaken under the assumption that all parties will exercise appropriate professional judgement regarding the confidentiality of all information shared.

The VLN plan to introduce a new online shared SMS in 2018. The SMS will enable parents to directly access their child's record regarding subjects, progress and achievement. The SMS may include a confidential section to store private information that will only be accessible by authorised people. Parents will have access to and will be able to insert information as required.

> *Online can create a safer environment/more trusting environment for students to share than in a classroom situation. The online teacher can learn about events before the home school does. Students can be more concerned about information 'getting out' in a traditional classroom situation.* (Online distance education provider)

> [*Data analytics provide] real time insights on learners engagement, how they're engaging, how much time they're spending on courses, and what devices they're using.* (Online distance education provider - tertiary)

> *Students [have] … their own dashboard where they can see their own progress. A lot of the actual data only goes to their advisor who curates this information to support the student appropriately. We only make data available to the person who needs the information to support the learning…[for example], a data analytics role…[with] oversight of all the data coming through and is linked in to a range of dashboards that connect to the student outcomes and advisors.* (Online distance education provider - tertiary)

Discussion

This research collated the voice and experience of providers and students of online distance education within Aotearoa New Zealand. The primary objectives were to:

1. identify what providers have learnt about online teaching and learning, and
2. identify the conditions which support the progression and achievement of online learners.

What has been learnt about online teaching and learning?

Effective online teaching and learning is, at its core, a demonstration of effective teacher pedagogy. Effective teacher pedagogy in face-to-face settings is likely to transfer to effective teacher pedagogy in on-line settings. The core difference is the willingness, ability and intent of online teachers to develop an online pedagogy that effectively uses appropriate digital tools and distance methods to enable learner success. The deliberate acts of online teaching made by online teachers inevitably impact learner success. Effective online teachers therefore need to be able to effectively translate and transfer known principles of effective teaching and learning, to the online environment.

When working with diverse learners, key informants utilised a range of pedagogical approaches to respond appropriately to learner expectations, needs and aspirations. Online learners in this research still expected a relationship with their teachers and uninterrupted time with them. They valued authentic teacher engagement, demonstrations of teacher care, and teachers who responded to their unique needs and context. Students felt more assured of their progress when they knew their interests and needs were visible and were being actively monitored. What this highlighted is that while student expectations of teachers were similar to that of a face-to-face setting, teachers in turn needed a suite of online teaching skills to meet these expectations. This confirms that the choice of online tools, activities, and student/teacher interactions, and how these intersect, influence learner engagement and in turn learning outcomes.

Evidence from this research consistently suggests that online distance education systems require the capacity and capability to be adaptive and responsive to individual student needs, preferences, and aspirations. The identification of this as a critical success factor is consistent with increasing recognition through most education systems that learning outcomes are enhanced when learning programmes are tailored to meet learner need. While this is in keeping with learner-centred and more collaborative teaching approaches, this research also shows that both teachers and learners can derive benefit from the manner in which the online environment supports more individualised teaching and learning.

Key informants described advances in technology as better enabling best practice in an online environment. They also described current technologies as increasingly blurring face-to-face and online teaching and learning. Attention by teachers currently to ensure that the online learning infrastructure is accessible, is understandable. A greater focus on pedagogically driven practice may become more evident in the future as the technological infrastructure and online skills and confidence become more embedded. For example, key informants reported that teaching and learning online was becoming easier and more focused on pedagogy as virtual connections between teachers and learners became more assured and fit for purpose.

Conditions supporting progress and achievement

Modes and methods

The research findings confirm that online distance education is currently delivered in New Zealand through a variety of synchronous and asynchronous modes. The use of both modes in tandem, and complemented by face-to-face engagement when appropriate, is indicated as important for success. This view is consistent with the majority of online teachers surveyed in this research who reported using face-to-face methods. However, the demand for face-to-face contact also varied across online students, indicating that it should not be assumed that face-to-face contact will be sought, appropriate or required by all students. Providers are also using virtual means to enable teacher and student interaction.

Face-to-face support is supported by previous research which shows that face-to-face interaction is often preferred by Māori online students as it provides critical academic, social, and cultural support. Whether current practice models enable sufficient face-to-face contact with students, was not directly examined in this research.

Asynchronous modes of delivery reported by teachers showed a common use of standard practices such as email, uploading content, and document sharing. The less frequent use of newer online tools and capability suggest online practice is still developing, a conclusion supported by other findings in this research.

Limited face-to-face time with students has been previously suggested as a reason for teacher directed approaches and students in this research also suggested this. Students also reported varying degrees of interaction with their other online learners as well as differences in the extent to which they sought such interaction. Key informants acknowledged that available tools and practices to support more collaborative and student lead learning were still developing. Recent technological advances in synchronous face-to-face contact, between teachers and students, and students and students, were supporting this growth.

Previous research asserts that online distance education generally requires more student-centric, inquiry-based, facilitative and flexible teaching methods. While key informants conferred, the setting of individual learning tasks was the most commonly reported teaching method by the online teachers surveyed. In comparison, more student-lead and collaborative teaching methods were much less frequently used. This result is consistent with previous research which has shown the actual online teaching practices often do not align with what is accepted practice.

Learner engagement

Findings throughout this research reinforce relationship building and student engagement as essential foundations to success. The findings show that teachers and learning support persons use both synchronous and asynchronous tools to develop relationships and engagement. However, practices reported by online teachers showed that more individualised methods were more frequently used than collaborative methods. This finding further supports the conclusion that while the need for collaboration is understood and accepted by providers, current practice is not always aligned.

Communities of online learners

The ability to create communities of online learners is considered a core benefit and strength of online distance education. Methods used by online teachers in this research to build communities of online learners revealed an emphasis on ensuring that students could access and participate in the online environment. However, most teachers also reported a focus on developing family/whānau support and involvement, as they provided further support away from the online environment. This approach is a known success factor for positive educational outcomes.

This research is consistent with other studies which report that online collaborative learning is not sought by all online learners. This research also shows that some students can benefit from online

teaching practices which support more independent learning approaches. Similar findings showed that online students may also have existing or alternative channels through which they receive pastoral care support.

Previous research also shows that online learners can feel little sense of community or connection with their online peers. This research finds similar evidence of this. The need for flexible and responsive delivery systems are again reinforced. Also emphasised is the need for teacher skill in ensuring that teaching approaches used to develop self-managing and self-regulating learners do not result in learners feeling isolated, unsupported, or left behind in their learning.

Teacher dispositions and competencies

Findings from this research indicate that effective online teaching is grounded in the same principles and objectives of face-to-face pedagogy. This finding supports the conclusion that effective online distance education teachers are first and foremost, effective teachers. In saying this, fundamental pedagogical principles might look different within an online environment and may require different practices. Effective online teachers therefore need the skills, experience and knowledge to translate and transfer effective pedagogy to online. This requires the ability to use online tools and affordances effectively and appropriately. This includes the ability to integrate face-to-face interaction and practices and tools that are not technologically based (i.e. blended learning approaches). In addition, teacher dispositions and competencies highlighted in this research as necessary for online success are largely similar to what would be identified for face-to-face teachers. Not surprisingly, a base level of both digital competence and confidence, is also important.

Teacher dispositions and competencies highlighted in this research included the ability to effectively:

- teach from a position of teacher as facilitator and guide, rather than expert, while also having deep subject and curriculum knowledge
- establish and maintain collaborative, supportive and trusting teacher/student relationships, which are learning focused, and which overcome transactional distance
- establish and maintain collaborative, supportive and trusting student to student learning relationships
- build and sustain teacher and instructional presence; including learning programmes that are responsive to students' interests, needs, abilities, aspirations and progress, and which sustain engagement
- use teaching approaches, modes and methods which build learner agency and autonomy, self-management and resilience, while also delivering the teaching guidance and supports required by learners
- demonstrate teacher care, engagement and follow-through, by using a range of practices; guidance, encouragement, promptness and accessibility, are all important
- set and maintain high expectations for learners and for learning outcomes
- translate and transfer relationship-based and kaupapa Māori learning principles and practices when working with Māori learners and within Māori settings
- communicate regularly with their students and in ways that establish trust and which demonstrate teacher care
- communicate, using an increasing range of online tools, and communications tailored for effective online transmission and receipt
- provide clear and succinct feedback which requires minimal elaboration to ensure that learners understand meaning, intent, sentiment and next learning steps
- collate and interpret a range of data and indicators, including online data analytics, to 'know thy learner' and inform evidence based guidance and direction.

Reflecting the curricula

Personalised teaching and learning embodies many principles, values and key competencies from the NZC. Tailored, individualised teaching and learning is also recognised in the literature as a key benefit and affordance of online distance education - as well as a core challenge. Providers described a range of online affordances that supported personalisation. In general, the methods reported by online teachers to tailor their teaching appeared little different to face-to-face teaching. Providers were also implementing a range of strategies to achieve more tailored and individualised programmes of learning. Providers expected that rapidly developing data analytics would continue to enhance the level of responsiveness achievable.

Professional development of online teachers

Teacher quality is central to effective teaching and learning. This research reinforces this premise within the online environment. It is also well established in the literature that it is how well technology is used as a pedagogical tool that makes the difference. Such evidence reinforces the importance of appropriate PLD for online teachers. Similar to previous research, this study shows that professional development needs are currently addressed primarily through the existing resources of providers. Within the VLN, providers appear to draw heavily from the resources, skills and experience available within each regional cluster. Larger providers report more centralised programmes of support, commensurate with their scale and resources.

Similar to previous studies, survey respondents in this research were more likely to have engaged in online education PLD that related to technology and the use of technology. These findings are not surprising and are consistent with the view of key informants that effective online teachers require digital competency and digital confidence. Reflecting the on-going emergence of online pedagogy, high proportions of respondents had also engaged in more pedagogically focused PLD.

Learning support

This research identifies variability in the range of supports provided, yet reinforces the importance of learning support and pastoral care for online learners. Participants emphasised the importance of a key support professional that guides, supports and advocates for learning and well-being.

eDeans (VLN) and Learning Advisors (Te Kura) were the primary providers of learning support identified in this research. The clear distinction between the role of eTeacher and the role of learning support person was common within both contexts. As an advocate for online learning success, key informants stressed that the role of the learning support person did not extend to direct teaching inputs.

Findings throughout this research and previous research shows that learning support persons have the most frequent contact with students, and are more likely than teachers to have in-person face-to-face contact with students. For both learning support roles, the importance of open and timely communication, and need for a complementary, partnership relationship based on trust and mutual confidence, was emphasised.

Despite its importance, previous studies have shown the quality and effectiveness of learning support provided in online environments can vary. Some evidence of such variability is provided in this research. Reasons for this would appear to include limited means and incentives available to providers through which home schools can be held to account for their performance in providing learning support. It is also critical that organisations providing learning supports have the necessary IT infrastructure, capacity and capability to do so.

Variance in the type of support provided also reflected the need to tailor support to individual needs and contexts as well as different approaches by home schools to providing learning support. For example, not all students require, want, or can participate in face-to face contact regularly. In both VLN and Te Kura, parents and family/whānau also undertake critical support roles. Parent and whānau support a key ingredient for online learning success; a nurturing and learning-positive home environment is a consistent factor for successful students.

Monitoring

Survey respondents reported a range of indicators and measures used by their organisations to monitor the engagement of online students in their learning. Commonly used measures were similar to those used in a face-to-face environment. Indicators and measures used to monitor student progress and achievement were also similar to those used in face-to-face schooling. The most frequently reported follow-up in the event that students were at risk of disengagement or underachievement involved the three main support persons - teacher, learner support person, and parents/caregivers/whānau. The critical role of each, and need for effective communication between them, is reinforced. However, monitoring of supplementary students heavily depends on the home school support as there can be minimal parents/caregivers/whānau involvement under this model. Some of these students interviewed felt it was easy to 'fly under the radar', reinforcing the need for systematic monitoring and responsive, early intervention when appropriate, and early involvement of parents/caregivers/whānau as necessary.

Face-to-face follow-up was less frequently reported by survey respondents, a finding consistent with other findings in this research. Resolution was typically and initially sought through telephone and through an online communication means. Face-to-face meetings were considered in most cases as a method of escalation if telephone or online contact was unsuccessful, and therefore generally only occurred if required. However, Māori and Pasifika interviewees commented on the extent to which their language teachers went to enable face to face interaction, which they found extremely beneficial.

Pastoral care

Pastoral support through the IT system was the type of pastoral care support most frequently reported by providers as these were always or sometimes available to full time online learners. Surprisingly, a fifth of survey respondents reported that academic guidance and support was either sometimes, rarely or never available to full time online learners. Other forms of pastoral care reported as less readily available to full time online learners included life-skills support, self-care conversations, mental health services, physical health services, spiritual support, and student run peer support groups. Some full time students considered their health and well-being to be the domain of other professionals and reported examples of how these needs were being met from outside the education system.

The reported availability and frequency of pastoral care to supplementary learners was similar to full time students. This result may suggest that providers generally do not distinguish the pastoral care needs of full time and supplementary learners. Access and availability of mental health services was again reported to be low for supplementary students, indicating this to be an issue across the education system, rather than unique to the online environment.

Overall, the learning support and pastoral care findings suggest the importance of a best-fit-for-purpose approach. Capacity and capability to identify and address needs through timely, safe and appropriate interventions is self-evident, as is rigorous monitoring of service quality and effectiveness.

Learner dispositions

Evidence from this research indicates that a balanced approach is required when considering the issue of learner disposition and competencies required for learning success within the online environment. A balanced approach means that the provision of online distance education is designed on the understanding that:

- some learners will be at particular risk in the online environment and that effective protections to mitigate this risk are required
- providers of online distance education have a responsibility to develop within online learners the dispositions and competencies required to participate in online learning and to be successful online learners

- as the diversity of students engaged in online learning increases, the capacity and capability of the system to effectively address diverse learning needs, must also increase
- a range of wider social, economic, and cultural factors within the learner's context will have influence in learner success and must also be enabled or mitigated through service design
- professional care and judgement is required when determining access to online learning environments.

Learner dispositions identified as most important by participants in this research were largely consistent with those previously identified in the literature. These included self-managing, motivated, focused, diligent, and resilient. Other dispositions highlighted in the literature include time management and technological ability and interest. Learner dispositions highlighted by providers and students in this research also tended to focus on those that supported participation and engagement in the online model of learning. While question design may have influenced these findings, a focus on participation related dispositions is consistent with other findings in the research; that is, that online pedagogy is still developing.

Previous research has identified a range of teaching practices that actively develop required learning dispositions and competencies, while also ensuring that learners receive the guidance and support in their learning that they require. Previous New Zealand research also shows that online teachers understand and seek to fulfil their role in developing self-regulated learners and student engaged in knowledge creation.

As digital natives, it is widely acknowledged that today's students bring considerable existing online experience, skills and capability. However, it is also recognised that young people can lack skills and understanding to purposefully use digital technologies for educational purposes. Developing an understanding of how digital skills may be best utilised for learning remains a core role of the online teacher. Online providers also have a responsibility to develop and provide learning tools and experiences that fully utilise online functionality and benefits. As digital platforms and modes converge, and become more 'routine', greater importance may be given by teachers and learners to dispositions which enhance learning engagement, access, participation and outcomes.

References

Alexander-Bennett, C. (2016). Keynote: FarNet ten years on—the past, present, and future for distance learners.

Almeida, C., & Bascolo, E (2006). Use of research results in policy decision-making, formulation, and implementation: a review of the literature. Cad. Saúde Pública [online] vol.22, suppl. pp.S7-S19. Available from: <http://www.scielo.br/scielo.

Amaru, L., Rae, M., & Shadbolt, P. (1995). Tangata Whenua in Distance Education: An Emerging Model for isolated Māori Secondary Students in the Correspondence School. Journal of Distance Learning, Vol 1, No. 1.

Archer, K., Savage, R., Sanghera-Sidhu, S., Wood, E., Gottardo, A., & Chen, V. (2014). Examining the effectiveness of technology use in classrooms: A tertiary meta-analysis. Computers & Education, 78, p.140-149.

Barbour, M. K. (2015). Real-time virtual teaching: Lessons learned from a case study in a rural school. Online Learning, 19(5), 54-68.

Barbour, M., Davis, N. & Wenmoth, D. (2016). Primary and Secondary Virtual Learning in New Zealand: Examining the Process of Achieving Maturity. International Journal on E-Learning, 15(1), 27-45. Chesapeake, VA: Association for the Advancement of Computing in Education (AACE)

Bennett, C., & Barbour, M. K. (2012). The FarNet journey: Perceptions of Māori students engaged in secondary online learning. Journal of Open, Flexible & Distance Learning, 16(1).

Bolstad, R., & Lin, M. (2009). Students' experiences of learning in virtual classrooms. Final report prepared for the Ministry of Education. New Zealand Council for Educational Research.

Bonk, C., & Zhang, K. (2006). Introducing the R2D2 model: Online learning for the diverse learners of this world. Distance Education, 27(2), pp. 249-264. doi:10.1080/01587910600789670

Bowe, R., Ball, S., & Gold, A. (1992). Reforming Education and Changing Schools. Case Studies in Policy Sociology. London: Routledge.

Braun, V. and Clarke, V. (2006) Using thematic analysis in psychology. Qualitative Research in Psychology, 3 (2). pp. 77-101.

Davis, N. (2011). Online and blended learning rolling into New Zealand Schools. Computers in New Zealand Schools: Learning, teaching, technology. Vol 23. No.1. pp 101-107

Diaz, L. A., & Entonado, F. B. (2009). Are the functions of teachers in e-learning and face-to-face learning environments really different? Educational Technology & Society, 12(4), pp. 331-343. Retrieved from http://proxy1.ncu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=ehh&AN=44785119&site=eds-live

Dyer, C. (1999). Researching the Implementation of Educational Policy: A Backward Mapping Approach. Comparative Education, 35(1), 45-61.

Er, E., Özden, M., & Arifoglu, A. (2009). A blended e-learning environment: A model proposition for integration of asynchronous and synchronous e-learning. International Journal of Learning, 16(2), pp. 449-460.

Fullan, Michael (1982). The Meaning of Educational Change. New York: Teachers College Press.

Garrison, D., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. The Internet and Higher Education, 7(2), pp. 95-105. Retrieved from http://dx.doi.org/10.1016/j.iheduc.2004.02.001.

Hasler-Waters, L., Barbour, M.-K., & Menchaca, M.-P. (2014). The Nature of Online Charter Schools: Evolution and Emerging Concerns. Educational Technology & Society, 17 (4), 379–389.

Hattie, J. (2012). Visible learning for teachers: Maximizing impact on learning. Oxford, UK: Routledge.

Higgins, S., Xiao, Z., & Katsipataki, M. (2012). The Impact of Digital Technology on Learning: A Summary for the Education Endowment Foundation School of Education, Durham University.

Jeurissen, M. (2015). Learning Te Reo Māori via online distance education: A case study. Journal of Open, Flexible and Distance Learning, 19(1), pp. 45–62.

Klem, A., & Connell, J. (2004). Relationships Matter: Linking Teacher Support to Student Engagement and Achievement. Journal of School Health. Vol. 74, No. 7, pp. 262-273.

Kwok-Wing Lai (2017): Pedagogical practices of NetNZ teachers for supporting online distance learners, Distance Education, DOI: 10.1080/01587919.2017.1371830. Distance Education.

Littleton, K., & Whitelock, D. (2005). The negotiation and co-construction of meaning and understanding within a postgraduate online learning community. Learning, Media and Technology, 30(2) pp.147–164.

Louwrens, N., & Hartnett, M (2015). Student and teacher perceptions of online student engagement in an online middle school. Journal of Open, Flexible and Distance Learning, 19(1), [27–43].

Martinez-Caro, E. (2011). Factors affecting effectiveness in e-learning: An analysis in production management courses. Computer Applications in Engineering Education, 19(3), pp. 572-581. Retrieved from http://illiad.ncu.edu/illiad/illiad.dll?SessionID=P134743944M&Action=10&Form=75&Value=56443

Meloni, J. (2010, January 11). Tools for synchronous and asynchronous classroom discussion [online blog]. The Chronicle of Higher Education. Retrieved from http://chronicle.com/blogs/profhacker/tools-for-synchronousasynchronous-classroom-discussion/22902

Molnar, A., Miron, G., Gulosino, C., Shank, C., Davidson, C., Barbour, M.K., Huerta, L., Shafter, S.R., Rice, J.K., & Nitkin, D. (2017). Virtual Schools Report 2017. Boulder, CO: National Education Policy Center. Retrieved from http://nepc.colorado.edu/publication/virtual-schoolsannual

Morrison, G., Morrison, J., & Ross, S. (2016). A Review of the Research Literature on the Infusion of Technology into the School Curriculum. Center for Research and Reform in Education (CRRE), Johns Hopkins University.

New Zealand Council for Educational Research. (2004). Critical success factors and effective pedagogy for e-learning in tertiary education. (Background paper for ITP New Zealand). Retrieved June 15, 2009 from http://elearning.itpnz.ac.nz/.

Pratt, K., & Trewern, A (date). New Zealand Students' Perceptions of Blended Learning. University of Otago.

Simonson, M., Smaldino, S., Albright, M., & Zvacek, S. (2012). Teaching and learning at a distance: Foundations of distance education. (5th ed.). Boston: Pearson.

Skylar, A. (2009). A Comparison of asynchronous online text-based lectures and synchronous interactive web conferencing lectures. Issues in Teacher Education, 18(2), pp. 69-84. Retrieved from http://proxy1.ncu.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ858506&site=eds-live

Smit, B. (2003). Can Qualitative Research Inform Policy Implementation? Evidence and Arguments from a Developing Country Context. Qualitative Social Research, 4(3), http://nbn-resolving.de/urn:nbn:de:0114-fqs030363.

Savage, R., Abrami, P. C., Piquette, N., Wood, E., Deleveaux, G., Sanghera-Sidhu, S., et al. (2013). A (Pan-Canadian) cluster randomized control effectiveness trial of the ABRACADABRA web-based literacy program. Journal of Educational Psychology, 105(2), p.310-328.

Tamim, R. M., Bernard, R. M., Borokhovski, E., Abrami, P. C., & Schmid, R. F. (2011). What forty years of research says about the impact of technology on learning: a second order meta-analysis and validation study. Review of Educational Research, 81(1), p.4-28.

Tiakiwai, S., & 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. Report to the Ministry of Education. Kiore Enterprises Ltd.

Tuwhangai, R. (2010). Te Kāwai Kūmara: A pilot for the synchronous delivery of a common postgraduate programme in Te Reo Māori across multiple sites Evaluation Report 2010

Waiti, P. (2005). Evaluation of Kaupapa Ara Whakawhiti Matauranga (KAWM). Wellington: Ministry of Education. Retrieved May 6, 2009 from www.educationcounts.govt.nz/publications/Māori_education/5087

Watson, J., Pape, L., Murin, A., Gemin, B., & Vashaw, L. (2014). Keeping pace with K-12 digital learning: An annual review of policy and practice. Evergreen Education Group.

Waxman, H., Gray, J., & Padron, Y. (Eds.). (2004). Introduction and overview. In Educational resiliency: Student, teacher, and school perspectives. Greenwich, CT: Information Age.

Willems, J. (2012). Educational resilience as a quadripartite responsibility: Indigenous people participating in higher education via distance education. Journal of Open, Flexible and Distance Learning, 16(1), 14–27.

Wright, N. (2010). E-Learning and implications for New Zealand schools: a literature review. Report to the Ministry of Education, New Zealand.

Zheng, B., Warschauer, M., & Chi Chang, C. (2016). Learning in One-to-One Laptop Environments. Review of Educational Research, Vol 86, Issue 4, pp. 1052 – 1084.

Appendix 1: Key informant interview guide

Introduction/background

- Introductions/welcome
- Overview of research purpose and use (see below)
- Length of interview – max 90 mins
- Consent to audiotape
- Questions
- Sign consent forms

Research purpose

"The Ministry of Education has commissioned this research to provide an updated picture of current online education practice in New Zealand and to support further developments in online education.

This, and other stakeholder interviews, are particularly focused on examining the interrelationships and complexities of pedagogy, curriculum, and context that influence success within the online learning environment.

Please note that the research is focused on 'virtual' learning – i.e. where teaching and learning is facilitated online and where there is 'distance' between the teacher and learner that is mediated online.

The research is also focused on both full time and supplementary online education:

- full time – the full curriculum is entirely delivered online
- supplementary – students receive some curriculum/subjects entirely online while enrolled in a face-to-face school and receiving other curriculum/subjects face-to-face

Please also note that the research is not focused on 'blended' learning – i.e. where teachers and students utilise online tools within a face-to-face learning situation".

Background

Let's begin with a brief background to your involvement in online education.

PROBE

- role
- supplementary and/or full time context
- what range of teaching methods - synchronous/asynchronous
- what range of modes of delivery
- different delivery considerations for different year levels

Online and face-to-face teaching

Differences between online and face-to-face

As you will know, the use of technology per se does not lead to student learning or enhanced learning – rather, the effectiveness of technology is dependent upon the pedagogy that is used in conjunction with technology.

- In your experience, what are the most significant differences between online and face-to-face teaching and learning?
- And what have been the most important features of your online practice with regards to responding to these differences?
- To what extent do you see online education practice in New Zealand being driven by clear online pedagogical principles, rather than, for example, just the possibilities of technology? What is the evidence for [view]?

Support from face-to-face teachers

The literature emphasises the importance of providing 'home school' or localised teaching support in the context of supplementary online education.

[If involved in supplementary provision]

- In your [school/VLN/programme/organisation] what 'home school' support is provided to students engaged in supplementary online education?

PROBE

- respective roles and responsibilities and how determined
- potential for duplication of teaching inputs?
- is the potential for duplication a 'risk' that needs to be managed?
- How well are you doing in the provision of 'home school' support? How do you know this?
- Do you face constraints or barriers to quality and effectiveness in this area? What is the impact of these?

[If involved in full time provision]

- Are there any opportunities for students to engage and interact with teachers face-to-face?
- When/where do these opportunities occur?
- Are there other processes through which full time students develop skills in interacting and engaging with teachers?

Teacher dispositions and competencies

The literature recognises that effective online teachers require distinct and additional skills and dispositions to face-to-face teachers.

In your experience, what are these?

PROBE

- teacher/student and student/student relationship
- student engagement/emotional engagement (i.e. comfortable and connected)
- personalised/place based/contextualised learning
- effective feedback
- developing learning communities

Online teacher PLD

Some authors believe that more knowledge is needed about the preparation and professional development specifically required by teachers to be effective within an online context – that is, competencies above and beyond integrating technology with teaching.

- In your view, do online teachers have specific PLD needs distinct from face-to-face teachers?
- How well are these needs currently understood?
- To what extent are these needs currently being met by available PLD?

PROBE

> PLD opportunities currently on offer
> gaps in current PLD
> current/future impacts from gaps

Alignment with New Zealand Curriculum

These next questions focus on alignment with the New Zealand curriculum. The extent to which current online education is able to deliver and uphold the New Zealand Curriculum's vision for eLearning will be discussed. We will also discuss how well online education enhances the personalisation of learning.

In the New Zealand Curriculum document, it is stated that eLearning should:

> Assist in making connections
> Facilitate shared learning
> Assist supportive learning for individual, cultural, and developmental differences
> Enhance educational experiences through access to virtual learning tools

- In your experience, have these statements been realised through current online learning opportunities and virtual classroom environments? [restate each as required]
- Which of these statements are the most achievable?
- Which of these statements are the most challenging to achieve?

Personalised education

Online education supports our shift away from a one-size-fits-all approach to teaching and learning, instead allowing for individualised approaches that develop each student's full potential.

- How does your [school/VLN/programme/organisation] facilitate personalised and student centered learning?
- How well are you doing here? What barriers or constraints exist? What impact do these have?

Online content and materials

One of the advantages of online learning is the teachers' and students' ability to curate personalised learning programmes and materials using a vast array of resources available online. Advocates suggest that student centered learning is enhanced as a result. However, there are multiple factors that determine the extent to which this can be achieved and the actual impact that this has on learning achievement remains inconclusive.

- In your experience, how are online courses developed? Is there a difference in online course development for supplementary tuition compared to full time tuition?
- When creating or identifying course materials, how do you determine fit-for-purpose and quality?
- Are efficiencies in cost and time achieved through the provision of online education? Or are these benefits negligible when compared to brick and mortar schooling?
- Do you make use of overseas course content and materials, and if so why?

Pastoral care, guidance and support

Some stakeholders question whether and how well the pastoral care and support needs of online students can be met – especially full time students as they may be particularly vulnerable. Overseas experience shows there can be a higher dropout rate for full time online education students compared to face to face.

[Ask for full time and/or supplementary as appropriate]

- Do students engaged in [full time/supplementary] online education have unique or additional care, guidance and support needs (i.e. compared to face-to-face students?)
- How are respective roles and responsibilities for meeting these needs determined (e.g. between home school, provider, home)
- How are these needs addressed?

PROBE

> specific support provided
> sustainability of support

- How well are these needs addressed?
- Are there constraints on capacity to identify and then meet needs? What impact does this have?

PROBE to understand

> differences in need and provision by year level
> for health services, counselling, form teacher support

- Does your [school/VLN/programme/organisation] monitor the quality of student care, guidance and support?

PROBE

> methods, criteria and indicators
> strengths/weaknesses of current practice
> areas of improvement – why?

Student dispositions and competencies

The literature discusses dispositions and competencies that are considered to be supportive of learner success within an online context – for example, capability for independent learning, well organised, motivation, resilience, self-efficacy.

However, there is also a view that the potential for success should not be viewed as a set of fixed attributes that students either have or don't have – rather, potential is constantly developing and many stakeholders and factors contribute to this. For example, Willems suggests that the responsibility for developing educational resilience within an online context is shared across four stakeholders - student, educator/supervisor, institution, and community.

- In your experience, do some students do 'better' within an online environment than others?

PROBE

> specific dispositions and competencies. Why important?
> differences by full time and supplementary context

- What impacts or outcomes have you seen as a result of these factors?

Relationship and data management

Finally, we can discuss day-to-day management issues that relate to the multiple stakeholders involved in online learning – i.e. schools, VLNs, providers, parents, community.

All education settings involve multiple stakeholders and the need to manage multiple inputs, interests, needs and priorities.

- However, does the online environment provide any unique stakeholder management issues or challenges (i.e. those not experienced in a face-to-face setting?)

PROBE

> causes/reasons for unique issues
> management/mitigation
> impacts/implications

- In your [school/VLN/programme/organisation] how are management decisions made regarding areas such as:
  > [programme/content/courses] available
  > [programme/content/courses] provided – by whom, when, how
  > [programme/content/courses] quality
  > student uptake and enrolment – who, how many
  > new [programme/content/course] offerings

- And in your practice context, who holds ultimate responsibility for student management, for example, that students are logging on, completing lessons, "attending" classes and so on?
- Are there any areas of 'grey' or uncertainty in respect to student management? Why is this? What impact does this have?

Student information and data management

Lastly, can we discuss the management and security of student information and data within the online context?

- Within the context of supplementary provision and your [school/VLN/programme/organisation] specifically, who ultimately holds responsibility for the management and security of student information and data and for ensuring compliance with relevant requirements (e.g. safety, privacy).
- What specific forms of data sharing or transfer occur between your [school/VLN/programme] and other stakeholder organisations?

PROBE

> policies and procedures determining data sharing/transfer

- Currently, how well is the issue of data management and security being addressed by:
  > your [school/VLN/programme/organisation]
  > the online education sector generally

- What areas for improvement are there?

Final reflections

Appendix 2: Online distance education questionnaire

Introduction

Thank you in advance for completing this questionnaire about your role and practice in online distance education in Aotearoa New Zealand.

Different delivery models of online distance education include synchronous delivery (in 'real time'), asynchronous delivery (in 'students' time') or a combination of both. Online distance education may also include different forms of face-to-face contact with students.

Full time online distance education is when students receive all the curriculum online (and may have some face-to face contact in support of this). Supplementary online distance education is when students receive some curriculum online while still attending and receiving some curriculum from a face-to-face education institution.

Full time online distance education refers to when students receive all the curriculum online. Supplementary online distance education refers to when students receive some curriculum online while still attending a face-to-face education institution.

Depending on your answers, this questionnaire will take approximately 15 minutes to complete. Participation is voluntary and no questions are compulsory. You or your organisation will not be identified through taking part nor through your answers. Questions about you are only asked to establish the range of survey respondents.

To start the questionnaire, please click 'Next' below. You can go back and edit previous answers at any time by clicking the 'Prev' button. Clicking 'Done' at the end will submit your questionnaire and you will not be able to return to it.

If you have any questions please contact Kathryn Baldwin from Cognition Education, ph 021 980629, kbaldwin@cognitioneducation.com or Sheryl Chase, Project Manager, Ministry of Education, ph (04) 463 8747, Sheryl.chase@education.govt.nz

Thank you for contributing to the on-going development of online education in Aotearoa New Zealand.

About you and your organisation

1. How are you currently involved in online distance education? Please tick as many as applicable.

Work as an online teacher	
Provide support to online teachers and learners (e.g. e-Dean, learning advisor)	
Provide online education leadership (e.g. e-Principal)	
Provide relevant professional learning and development	
Involved in online curriculum development	
Involved in online content or resource development	
Involved in online education governance	
Provide IT support	
Provide administration support	
Other (*please specify*)	
I am not involved in online distance education (to Qx)	

2. Are you primarily involved in... *Please tick one only*.

Supplementary online distance education	
Full time online distance education	
Supplementary and full time online distance education	
Other (p*lease describe*)	

3. Please tick the type or year level/s of online distance students that you, your school or organisation are involved in. *Please tick as many as applicable*.

Pre-school/ECE	
Years 1 to 3	
Years 4 to 6	
Years 7 to 8	
Year 9	
Year 10	
Year 11	
Year 12	
Year 13	
Post-secondary school/tertiary	
Adult learners	
Special education	

Other (please describe)	
Don't know	

4. How long have you been involved in online distance education in any capacity? *Please tick one only*.

Less than one year	
Between one to two years	
Between two to three years	
Between three to four years	
Between four to five years	
More than five years	
I am not involved in online distance education in any capacity (go to Qx)	
Don't know	

5. Please tick the statement that best describes you. *Please tick one only*.

I practice or have practiced as an online distance teacher (note: your online teaching practice might also include face-to-face contact with students) (to Qx)	
I am involved in online distance education but have never practiced as an online distance teacher (*to Qx*)	

Online teaching and learning

Modes of delivery

6. Please tick the modes of delivery that you have ever used **synchronously** (in 'real time') as an online distance teacher. *Please tick as many as applicable*.

Video/web conferencing (e.g. Zoom, Skype, Google Hangouts, Spreecast, Watchitoo)	
Live streaming (e.g. Livestream)	
Live demonstrations (e.g. Ustream)	
Chat / messaging (e.g. Vokle, Yammer, Facebook Messenger)	
Telephone conferences	
Other live streaming	
Face-to-face contact	
Other (*please describe*)	

7. Please tick the modes of delivery that you have ever used **asynchronously** (in 'students time') as an online distance teacher. *Please tick as many as applicable*.

Uploaded content (e.g. presentations, workbooks, other print)	
Document sharing	
Delivery through a Learning Management System (e.g. LMS based discussion boards such as Google Classroom, Moodle, Ning)	
Podcasts	
LMS based discussion boards (e.g. Google Classroom, Moodle, Ning)	
General discussion forums (i.e. Reddit)	
Micro-blogging (i.e. Twitter, Tumblr)	
Networking platforms (i.e. LinkedIn, Facebook, Google+, Pinterest, Instagram)	
Webinar (e.g. GotoWebinar, Bigmarker)	
Video streaming (e.g. YouTube)	
Virtual sticky boards (i.e. Padlet)	
Wikis	
Text messaging	
Collaborative document creation (i.e. Google docs)	
Email	
Other (*please describe*)	

Student engagement in learning

8. Methods to build **student engagement** in learning are shown. In your online teaching, do you use each method *frequently, sometimes, rarely or never*?

	I use this approach **frequently**	I use this approach **sometimes**	I use this approach **rarely**	I **never** use this approach	**Can't say**
Development of community relationships, involvement and support					
Face-to-face interactions between teachers and students					
Communication with student's learning support person and/or base school teacher					
Time spent introducing and getting to know each other					
Students provided a choice of topics within a programme					
Co-construction (e.g. goals, success criteria, learning activities)					

	I use this approach **frequently**	I use this approach **sometimes**	I use this approach **rarely**	I **never** use this approach	**Can't say**
Access to anytime/anyplace learning opportunities					
Access to information in different formats					
Prompt, personalised student feedback by the teacher					
Culturally responsive / inclusive teaching strategies					
Relationships with students based on high expectations and non-deficit thinking (i.e. *agentic thinking*)					
Peer-to-peer teaching, learning and assessment					
Learning focused relationships with parents / caregivers / whānau					
Student monitoring of their own progress					

Teaching methods

9. Different **teaching methods** are listed. In your online teaching, do you use each method *frequently, sometimes, rarely or never*?

	I use this approach **frequently**	I use this approach **sometimes**	I use this approach **rarely**	I **never** use this approach	**Can't say**
Direct instruction					
Individual learning tasks (i.e. students working independently					
Small group collaborative teaching and learning					
Large group collaborative teaching and learning					
Problem-based teaching					
Student-led inquiry (including design thinking methods)					
Ability grouping					
Project-based learning (including cross-curricula teaching and learning)					
Games based learning					

	I use this approach **frequently**	I use this approach **sometimes**	I use this approach **rarely**	I **never** use this approach	**Can't say**
Scaffolding					
Tuakana Teina					
Quizzes					

9a. Please explain or expand on any of your answers above. [OPEN ENDED TEXT BOX]

10. Different methods t**o personalise** teaching and learning are shown. In your online teaching, do you use each method *frequently, sometimes, rarely or never*?

	I use this approach **frequently**	I use this approach **sometimes**	I use this approach **rarely**	I **never** use this approach	**Can't say**
Building on prior or existing knowledge					
Personalised goal setting					
Co-construction (e.g. goals, success criteria, learning activities, assessment)					
Responsiveness to student interests					
Representation of students' language, culture and identity					
Place-based learning (e.g. students' community, environment, landmarks, histories)					
Student feedback used to guide next steps					

10a. Please explain or expand on any of your answers above. [OPEN ENDED TEXT BOX]

11. What other methods have you ever used to **personalise** online distance teaching and learning? [OPEN ENDED TEXT BOX]

12. Different methods to build **communities of online learners** are shown. In your online teaching, do you use each method *frequently, sometimes, rarely or never*?

	I frequently use this approach	I sometimes use this approach	I rarely use this approach	I never use this approach	Can't say
Learning expectations and protocols are co-constructed with the learner group					
Learning themes and focus are co-constructed with the learner group					
Learning goals and measures of success are co-constructed with the learner group					
Facilitation of shared learning across the learner group					
Learning is connected to different learning contexts across the learner group					
Students work in shared online spaces					
Attention paid to ensuring the online learning environment is accessible					
Attention paid to ensuring all learners have a voice					
Development of family/whānau support and involvement					
Development of wider community support and involvement					

12a. Please explain or expand on any of your answers above. [OPEN ENDED TEXT BOX]

13. What other methods have you ever used to build communities of online distance learners? [OPEN ENDED TEXT BOX]

Professional learning and development (PLD)

14. Areas of PLD that may be relevant to online distance education are shown. For each of the following areas, please indicate whether you *have* or *have not* ever engaged in PLD that was specifically intended to support your work in online distance education.

	Have received online education related PLD in this area	**Have not** received online education related PLD in this area	**Can't say** whether have received online education related PLD in this area	N/A
Online learning management systems				
Online student management systems				
General IT/digital competency				
Building communities of online learners				
Developing online learning relationships				
Developing online teaching and learning resources				
Curriculum/subject areas PLD				
Using synchronous modes of delivery				
Using asynchronous modes of delivery				
Online/digital pedagogy				
Culturally responsive online/digital pedagogy				
Using specific teaching methods online				
Using online resources or courses (e.g. Code Avengers)				
Leadership in online education				
Mentoring/coaching online teachers				
Supporting online learners (e.g. as e-Dean, Learning Advisor)				
Future focused learning				
Online privacy/confidentiality				
Use of data analytics				
Other data related (e.g. security, sharing)				

15. Please describe any areas of unmet PLD need that you have related to your role in online education. [OPEN ENDED TEXT BOX]

Engagement and achievement

[All respondents]

16. What indicators/measures are used by your school or organisation to determine engagement by online distance students? *Please tick as many as applicable*.

How often students are logging in for teaching and learning purposes	
The duration of time students are logged in for teaching and learning purposes	
The number of online teaching and learning activities that students are participating in (e.g. contributing to discussion boards, completing quizzes)	
The quality of students' participation in online teaching and learning activities (e.g. contribution to synchronous or asynchronous classroom activities)	
Student preparedness for teaching and learning activities	
How regularly work is submitted	
The timeliness of work submitted (e.g. meets deadlines)	
The quality of work submitted	
Extent to which students reach out for help and support	
How often students connect with each other for teaching and learning purposes	
How well students work together for teaching and learning purposes	
How accessible and responsive students are (e.g. attendance at face-to-face events, phone or email contact)	
Other (*please describe*)	

17. What indicators/measures are used by your school or organisation to determine *progress and achievement* by online distance students? *Please tick as many as applicable*.

Assessment of current curriculum level	
Formative assessment	
Standardised tests (e.g. PATs)	
Assessment against National Standards in reading, writing and mathematics	
Attainment of NCEA unit and achievement standards	
Performance on NCEA achievement standards (i.e. achieved, merit, excellence)	
Assessment of literacy and numeracy	
Assessment of New Zealand curriculum key competencies	
Assessment of self-management skills (i.e. punctuality, organisation)	
Collection and interpretation of student voice	
Assessment against other frameworks (e.g. Youth Employability Skills Framework)	
Assessment using cultural criteria	
Parent /whānau/caregiver reports or voice	
Assessment against graduate profiles	

Digital fluency	
Other (*please describe*)	

18. What follow-up is employed by your school or organisation in the event that **engagement** or **achievement** by online distance students does not meet expectations? *Please tick as many as applicable*.

Student contacted by teacher (e.g. email, text, telephone, online)	
Student contacted by learning support person (e.g. email, text, telephone, other online)	
Parents/caregivers/whānau/supervisors contacted (e.g. email, text, telephone, online)	
Other agencies (e.g. Truancy Services, Special Education) contacted if appropriate	
Meetings between teacher, student, and/or others	
Meetings between learning support person, student, and/or others	
Design/implement remedial actions/strategies	
Other (*please describe*)	

Pastoral care

19. Types of student **pastoral care** are shown. In your school or organisation currently, is each type *always*, *sometimes, rarely or never available to* **full time** online distance students?

	This type of pastoral care is always available	This type of pastoral care is **sometimes available**	This type of pastoral care is **rarely** available	This type of pastoral care is **never** available	**Can't say**	**N/A**
Checking-in						
Mentoring						
Physical health services						
Mental health services						
Academic guidance and support						
Career guidance						
Self-care conversations						
Spiritual support						
Life-skills support						
IT system support						
Student run peer support groups (e.g. sexuality, SADD)						
Others (*please describe*)						

20. What pastoral care is critical for **full time** online distance learners? Please explain your answers. [OPEN ENDED TEXT BOX]

21. Types of student pastoral care are shown again. In your school or organisation currently, is each type *always*, *sometimes, rarely or never available to* **supplementary** online distance students?

	This type of pastoral care is always available	This type of pastoral care is **sometimes available**	This type of pastoral care is **rarely** available	This type of pastoral care is **never available**	**Can't say**	**N/A**
Checking-in						
Mentoring						
Physical health services						
Mental health services						
Academic guidance						
Career guidance						
Self-care conversations						
Spiritual support						
Life-skills support						
IT system support						
Student run peer support groups (e.g. sexuality, SADD)						
Others (please describe)						

21a. Please explain or expand on any of your answers above. [OPEN ENDED TEXT BOX]

Learner dispositions

22. **Learner dispositions** are listed. Using a scale where 1 = *not at all important* and 10 = *critical*, please rate each on how important it is to being an effective online distance learner (supplementary or full time).

	Not at all important								*Critical*		*Can't say*
	1	2	3	4	5	6	7	8	9	10	
Self-managing											
Motivated											
Inquiring											
Critical thinker											
Creative											
Aspirational											
Self-assured											
Social											
Diligent											
Resilient											
Patient											
Self-aware											
Brave											
Reciprocal											
Resourceful											
Persevering											
Reflective											
Cooperative											
Focused											
Can-do attitude (agentic)											
High self-expectations											

Teaching and learning resources

Approaches to developing or accessing teaching and learning resources are listed. In your school or organisation, is each approach used *frequently, sometimes, rarely* or *never* when developing online distance teaching and learning resources?

	Approach is used frequently	**Approach is used** sometimes	**Approach is used** rarely	**Approach is** never **used**	Can't say **how frequently this approach is used**
Purchase pre-developed standardised resources					
Resources accessed through open-source platforms					
Develop whole-course standardized resources in-house					
Teacher developed resources lesson-by-lesson					
Teacher developed resources as needed/appropriate (e.g. responsive to current events)					
Access repositories of teacher developed resources					
Digitalisation of hard-copy resources					
Teacher curated resources using online multi-media resources					
Student curated resources using online multi-media resources					

23. Approaches to determining the **quality of teaching and learning resources** are listed. In your school or organisation, is each approach used *frequently, sometimes, rarely* or *never* when developing online teaching and learning resources?

	Approach is used frequently	**Approach is used** sometimes	**Approach is used** rarely	**Approach is** never **used**	Can't say **how frequently this approach is used**
Alignment with New Zealand Curriculum levels					
Ability appropriateness					
Alignment with New Zealand Curriculum key competencies					
Age appropriateness					
Developmental stage appropriateness					
Clarity and appropriateness of text					
Evidence of subject matter expertise					
Impact of graphics / illustrations					
Alignment with online pedagogy					
Alignment with NCEA achievement standards					
Relevance to student interests					
Flexibility and openness (e.g. to support individual student's interests and passions)					
Adaptiveness to different learning styles or preferences					
Relevance to student culture and identity					
Compatibility with online learning delivery tools and methods					
Alignment with principles of effective learning design					
Relevance to current knowledge and trends					

	Approach is used frequently	**Approach is used** sometimes	**Approach is used** rarely	**Approach is** never **used**	Can't say **how frequently this approach is used**
Variety of ways able to be presented and accessed					
Other (*please describe*)					

24. Please explain or expand on any of your answers on online distance teaching and learning resources. [OPEN ENDED TEXT BOX]

Final comments

25. Please provide any further comments you would like to make about online distance education in New Zealand. [OPEN ENDED TEXT BOX]

Appendix 3: Student interview guide (*full time learner*)

Introduction

- Purpose and use (see below)
- Anonymity and confidentiality
- Voluntary/non-compulsory
- Audio-tape
- Interview duration
- Questions
- Consent

Research purpose and use

Thank you for agreeing to take part in this research which Cognition Education is undertaking for the Ministry of Education. My name is xxxx.

You may be aware that the government has recently introduced a new policy that will allow more students to study online in the future. To support the further development of the policy, the Ministry has asked us to talk with teachers and students who are already teaching and learning online. We hope to learn more about what is high quality and effective online education and how the government can support this. So this interview will allow the Ministry of Education to learn from you and will benefits other students in the future.

[To go anonymity and confidentiality etc]

Background

Let's begin with introductions; you name, where you're from, the online subjects/level you are taking…

- Did you choose to attend school online or did you have no choice? [If choose]. Why?
- How did you feel when you first learnt you [would need to/could] study online?
- At this time, did you have any concerns? Why [x]?
- Looking back, did [x] happen? Why/why not?

Describing online learning

Let's imagine I know nothing about how an online class/subject works…

- Can you talk me through a typical lesson? What happens? What do you need to do?
- Do you have contact with a teacher during lessons or between lessons? PROBE for any synchronous class time.
- What technology is used for online learning? What is it used for? How well does it work?

*[**Technology mentioned might include**: google hangout/zoom, google+ community, Padlet, Knowledge Forum, Facebook, email, blogs, chat, videoconferencing, messaging, discussion boards, wikis, Moodle]*

- Have you attended a traditional classroom-based school before? [IF YES]. What has been most different for you learning online compared to face-to-face?

Pedagogy

Relationship/interaction

With teacher

An obvious difference you have described is the distance between you and your online teacher…

- In each subject area, do you have a single online teacher? How many in total?
- What interaction do you have with your teacher/s? How often?
- Do your online teacher/s do anything to get to know you better? How effective is this?
- What do your teacher/s do to show they care about you and your learning? (e.g. following-up, guidance, encouragement, interest in ideas)
- How well do your online teacher/s understand your needs as a learner? Why do you say this?
- Have your online teachers been as available to you as you have needed? [IF NO]. Why not?

With students

- In the subjects you study, do you have the opportunity to interact with other students?
- [IF YES] How do you think your relationship with them might be the same or different compared to working with students face-to-face? [EXPLORE differences] (e.g. sense of belonging, connection, closeness/distance)
- Some people believe online environments can make it easier for students to connect and work together (e.g. solving problems, generating ideas, giving feedback). Do you agree or disagree? Why?
- Do your teacher/s help you to get to know other students? How? Has this been effective?

With parents/caregiver

- What involvement do your parents/caregivers have in your education?
- Do your teacher/s or school do anything to support their involvement? Has this been effective?

Learning environment/community

Let's talk about the teaching and learning that happens in your online classes.

- How would you describe the teaching that happens in your online education? By this I mean things like how the teacher teaches you, how much you are able to contribute, how much you have a say in what you learn and how you learn.

PROBE

> extent one/two way talk
> student autonomy, agency, choice (teacher vs student directed)
> role of teacher (e.g. more facilitative, collaborative?)

- Same people say that online education can make it easier for teachers and students to work together to develop learning experiences that are right for you (e.g. match your interests, strengths, experiences, who you are, what you already know, how you learn best, how fast or slowly you work). Do you agree or disagree? Why? Why not?
- Can you give me some examples this year where this did happen? (e.g. students involved in decision making, connecting to prior learning, connecting to context, real life)

- How do you usually contribute to learning in an online education setting? By 'contribute' I mean things like the questions you ask, the discussions you have with your teacher and students, how you share learning with others.

PROBE

- student initiated questions
- student to student discussion
- sharing learning
- initiating/leading learning activities (students choice/control)

Expectations

Teacher expectations

- What expectations do you online teacher/s have of you? How do you know their expectations?
- To what extent has your teacher set expectations for your learning with your parents / whānau / caregivers?
- Have your teachers' expectations been realistic and achievable? Why? Why not?
- What have your teachers' expectations meant for you? Have you had to change or develop in any way? (e.g. less dependent on teacher, more persistent, more ownership, self-management)
- Have you met these expectations?

Student expectations

- What expectations do you have of your teachers? Are these any different to face-to-face teachers? Why?
- Do your teachers know what your expectations are?
- What have [your expectations] meant for you and your learning?
- Has your teacher met your expectations?

Independent learning

- Some people say that online education can help students to develop as 'independent learners'? What does this mean to you? What has been your experience of this?

PROBE: expectations (e.g. work largely on own, work with different supports, work in partnership)

Support, care and guidance

The support you get as an online student

- Can you tell me more about the individual learning help that is available to you? (what, how, from who).
- [IF NOT MENTIONED]. What about if you have any needs to do with your health and wellbeing?
- How easy or difficult is it to get the support you need?
- Without giving any personal details or information, have there been any times when you couldn't get the support needed? Why? What happened?

Competencies and dispositions

- Are you satisfied with your progress and achievement this year?

(EXPLAIN: by 'progress and achievement' you could refer to your:

> academic achievement
> your ability to work together with others
> other important abilities such as being self-managing and self-motivated to learn.)

- What feedback do you get about your progress and achievement? Is this enough? Why/Why not?
- Has learning online influenced your progress and achievement in any way? Positive or negative? [EXPLORE].

Let's imagine you had been studying [online class/subjects] *face-to-face this year rather than online…*

- Would your progress and achievement in [online class/subjects] have been better, worse or the same? Why? (ensure the student is specific about which part of their progress and achievement the student is referring to: academic, soft skills competencies, etc.)

If better or worse, PROBE for explanatory:

- process factors
- learner factors
- home/community factors

I want you to put yourself right back at the start of the online course/programme you have been involved in this year. This is your chance to start the year of study all over again.

- What would you do differently as a learner if you could start all over again? Why [x]?

PROBE

- Why didn't you do [x] at the start?
- What difference would this have made?
- What would your teacher do differently to help your progress and achievement?

PROBE

- What difference would this have made?

What would your online education provider do differently to help your progress and achievement?

PROBE

- What difference would this have made?
- What would your parents/carers/family do differently to help your progress and achievement?

PROBE

- What difference would this have made?

Close

We have covered a huge amount…you have been awesome…thank you…

- Just summing up, what is it about online learning this year that has most suited the way you like to learn? What has least suited you?
- In the future, would you take another class/subject online if you had the chance? Why/Why not?

Appendix 4: Student interview guide (*supplementary learner*)

Introduction

- Purpose and use (see below)
- Anonymity and confidentiality
- Voluntary/non-compulsory
- Audio-tape
- Interview duration
- Questions
- Consent

Research purpose and use

Thank you all for agreeing to take part in this research which Cognition Education is undertaking for the Ministry of Education. My name is xxxx.

You may be aware that the government has recently introduced a new policy that will allow more students to study online in the future. To support the further development of the policy, the Ministry has asked us to talk with teachers and students who are already teaching and learning online. We hope to learn more about what is high quality and effective online education and how the government can support this. So this interview will allow the Ministry of Education to learn from you all and will benefit other students in the future.

[To go anonymity and confidentiality etc]

Background

Let's begin with introductions; name, school, online subjects/level you are taking…

PROBE

- number of students in class
- where VC teacher is based
- Did you choose to take [class/subject] online or did you have no choice? Why did you choose?
- How did you feel when you first learnt you [would need to/could] study online?
- At this time, did you have any concerns? Why [x]?
- Looking back, did [x] happen? Why/why not?

Describing online learning

Let's imagine I know nothing about how an online class/subject works…

- Can you talk me through a typical (synchronous) lesson?
- And what happens between the lessons? (EXAMINE independent study time; where, how often, supervised/unsupervised)
- What other contact do you have with the teacher?
- Apart from videoconferencing, what other technology is used? What for? How often?
- Are classes different for anyone else? What else can you tell me?

*[**Technology mentioned might include**: Google Hangout/Zoom, Google+ community, Padlet, Knowledge Forum, Facebook, email, blogs, chat, videoconferencing, messaging, discussion boards, wikis,* Moodle, KnowledgeNet*]*

- What has been most different for you learning in a virtual classroom compared to face-to-face?

Pedagogy

Relationship/interaction

With teacher

An obvious difference you have described is the distance between you and your online teacher…

- Is your relationship with your online teacher the same or different to face-to-face teachers? [EXPLORE differences]
- Did your online teacher do anything to get to know you better? How effective was this?
- What has your teacher done to show they care about you and your learning? (e.g. following-up, guidance, encouragement, interest in ideas)
- How well does your online teacher understand your needs as a learner? Why do you say this?
- Has your online teacher been as available to you as you have needed? Why? Why not?

With students

- Is your relationship with the other students in your online class the same or different to your face-to-face classes? [EXPLORE differences] (e.g. sense of belonging, connection, closeness/distance)
- Some people believe virtual classrooms can make it easier for students to connect and work together (e.g. solving problems, generating idea, giving feedback). Do you agree or disagree? Why?
- Did your teacher or school do anything to help you to get to know other students in your class? How effective was this?

With parents/caregiver

- Is the type of involvement your parents/caregivers have in your online subject/s the same or different to your face-to-face subjects? [EXPLORE differences]
- Did your teacher or school do anything to support involvement by parents/caregivers? How effective was this?

Learning environment/community

Let's talk about the teaching and learning that happens in your online classes.

- Is the teaching that happens the same or different to what usually happens in a face-to-face class? By this I mean things like how much talking the teacher does, how much you are able to contribute, how much you have a say in what you learn.

PROBE

- extent one/two way talk
- student autonomy, agency, choice (teacher vs student directed)
- role of teacher (e.g. more facilitative, collaborative?)

- Same people say that virtual classrooms can make it easier for teachers and students to work together to develop learning experiences that are right for you (e.g. match your interests, strengths, experiences, who you are, what you already know, how you learn best, how fast or slowly you work). Do you agree or disagree? Why? Why not?

- Can you give me some examples this year where this did happen? (e.g. students involved in decision making, connecting to prior learning, connecting to context, real life)
- Is the way you usually contribute to your online classes the same or different to a face-to-face class? By 'contribute' I mean things like the questions you ask, the discussions you have with your teacher and students, how you share learning with others). Why is it the same/different?

PROBE

- student initiated questions
- student to student discussion
- sharing learning
- initiating/leading learning activities (students choice/control)

Expectations

Teacher expectations

- Does your online teacher have the same or different expectations of you as a learner compared to face-to-face teachers? What is different? Why is this?
- To what extent has your teacher set expectations for your learning with your parents / whānau / caregivers?
- Have your teacher's expectations been realistic and achievable? Why? Why not?
- What have your teacher's expectations meant for you? Have you had to change or develop in any way? (e.g. less dependent on teacher, more persistent, more ownership, self-management)
- Have you met these expectations?

Student expectations

- Do you have the same or different expectations of your online class/subject teacher compared to face-to-face teachers? What is different? Why is this?
- What have [your expectations] meant for you and your learning?
- Has your teacher met your expectations?

Independent learning

- Some people say that online classes can help students to develop as 'independent learners'? What does this mean to you? What has been your experience of this?

PROBE: expectations (e.g. work largely on own, work with different supports, work in partnership)

Support, care and guidance

Home school support

Earlier we talked little a bit about the independent study times you have between classes…

- Can you tell me more about what happens during these periods?
- What 'home' teacher support (e.g. eDean) do you get? What does [home support teacher] do? Are they there all the time?
- Does [home support teacher] have enough understanding about the class, what you need to do, what you need?
- Can you give me some examples when [home support teacher] really helped you? Were there any times when they couldn't give you the help you needed? Why? What happened?

Overall support

- Overall, have you found it easier, harder, or no different getting the support you need in your [online class] compared to face-to-face classes? Why?
- Have you reached out (i.e. been proactive) to your online teacher for extra help this year? How? Why not? What makes this easy or hard?

Competencies and dispositions

- How satisfied are you with your progress and achievement this year in [online class/subjects]?

(EXPLAIN: by 'progress and achievement' you could refer to your:

- academic achievement
- your ability to work together with others
- other important abilities such as being self-managing and self-motivated to learn.)
- Do you feel the same or a different level of satisfaction about your face-to-face classes/subjects?

IF different, PROBE for reasons

Let's imagine you had been studying [online class/subjects] *face-to-face this year rather than online…*

- Would your progress and achievement in [online class/subjects] have been better, worse or the same? Why?

If better or worse, PROBE for explanatory:

- process factors
- learner factors
- home/community factors

I want you to put yourself right back at the start of the online course/programme you have been involved in this year. This is your chance to start the year of study all over again.

- What would you do differently as a learner if you could start all over again? Why [x]?

PROBE

- Why didn't you do [x] at the start?
- What difference would this have made?

- What would your teacher do differently to help your progress and achievement?

PROBE

- What difference would this have made?

What would your school do differently to help your progress and achievement?

PROBE

- What difference would this have made?

- What would your parents/carers/family do differently to help your progress and achievement?

PROBE

- What difference would this have made?

Close

We have covered a huge amount…you have been awesome…thank you…

- Just summing up, what is it about online learning this year that has most suited the way you like to learn? What has been least suited?
- In the future, would you take another class/subject online if you had the chance? Why/Why not?

Appendix 5: Survey respondents

How are you currently involved in online distance education? Multiple responses allowed.

	All responses		Te Kura responses		VLN responses	
	#	%	#	%	#	%
Work as an online teacher	126	70.0%	88	77.9%	38	56.7%
Provide support to online teachers and/or learners (e.g. e-Dean, learning advisor)	73	40.6%	40	35.4%	33	49.3%
Provide online education leadership (e.g. e-Principal)	29	16.1%	17	15.0%	12	17.9%
Provide relevant professional learning and development	45	25.0%	27	23.9%	18	26.9%
Involved in online curriculum development	39	21.7%	28	24.8%	11	16.4%
Involved in online content or resource development	59	32.8%	44	38.9%	15	22.4%
Involved in online education governance	13	7.2%	4	3.5%	9	13.4%
Provide IT support	16	8.9%	9	8.0%	7	10.4%
Provide administration support	19	10.6%	14	12.4%	5	7.5%
I am not involved in online distance education	2	1.1%	0	0.0%	2	3.0%
Other	4	2.2%	0	0.0%	4	6.0%
Total	**180**		**113**		**67**	

Type or year level/s of online distance students involved in

	All responses		Te Kura responses		VLN responses	
	#	%	#	%	#	%
Pre-school/ECE	36	20.6%	36	32.1%	0	0.0%
Years 1 to 3	51	29.1%	45	40.2%	6	9.5%
Years 4 to 6	59	33.7%	46	41.1%	13	20.6%
Years 7 to 8	80	45.7%	63	56.3%	17	27.0%
Year 9	104	59.4%	84	75.0%	20	31.7%
Year 10	112	64.0%	89	79.5%	23	36.5%
Year 11	129	73.7%	98	87.5%	31	49.2%
Year 12	132	75.4%	96	85.7%	0	0.0%
Year 13	126	72.0%	92	82.1%	34	54.0%

	All responses		Te Kura responses		VLN responses	
	#	%	#	%	#	%
Post-secondary school/tertiary	26	14.9%	15	13.4%	11	17.5%
Adult learners	68	38.9%	52	46.4%	16	25.4%
Special education	37	21.1%	36	32.1%	1	1.6%
Don't know	0	0.0%	0	0.0%	0	0.0%
Other	0	0.0%	0	0.0%	0	0.0%

How long have you been involved in online distance education in any capacity?

	All responses		Te Kura responses		VLN responses	
	#	%	#	%	#	%
Less than one year	19	10.9%	12	10.7%	7	11.1%
Between one and two years	22	12.6%	18	16.1%	4	6.3%
Between two and three years	22	12.6%	15	13.4%	7	11.1%
Between three and four years	21	12.0%	14	12.5%	7	11.1%
Between four to five years	19	10.9%	10	8.9%	9	14.3%
More than five years	71	40.6%	42	37.5%	29	46.0%
Don't know/Can't remember	1	0.6%	1	0.9%	0	0.0%
Total	**175**	**100%**	**112**	**100%**	**63**	**100%**

Please tick the statement that best describes you

	All responses		Te Kura responses		VLN responses	
	#	%	#	%	#	%
I am involved in online distance education but have never practiced as an online distance teacher	39	22.8%	16	14.7%	23	37.1%
I practice or have practiced as an online distance teacher (note: your online teaching practice might also include face-to-face contact with students)	132	77.2%	93	85.3%	39	62.9%
Total	**171**	**100%**	**109**	**100%**	**62**	**100%**