



Waikato Journal of Education

Journal website: <http://wje.org.nz>

ISSN 2382-0373

Published by the [Wilf Malcolm Institute of Educational Research](#)



Volume 28, Issue 1, 2023

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Editor: Kerry Earl Rinehart

Cite this article: Karaka-Clarke, T. H. R., Macfarlane, A. & Fletcher, J. (2023). Approaches to teaching and learning a second language online. *Waikato Journal of Education*, 28(1), 109–123. <https://doi.org/10.15663/wje.v28i1.1000>

Link to this volume: <https://doi.org/10.15663/wje.v28i1>

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Approaches to teaching and learning a second language online

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Abstract

Embedding the use of technology for authentic social interactions with L2 teaching and learning needs to be supported by effective pedagogical practices. This article explores how technology can support the learning of te reo Māori in New Zealand. Thirteen kaiako (teachers) from a variety of teaching and learning backgrounds and experiences, and five ākonga (students) representing a range of ages were individually interviewed. The ākonga reported that synchronous online classes were very helpful for their language development and enjoyed the whanaungatanga created by being a part of the online community. They felt less, isolated and felt that they got to know some members of the class better. The kaiako reported, that connecting with the heart enhanced engagement in te reo Māori, which increased the confidence of ākonga, which advanced the level of proficiency in te reo Māori.

Keywords

L2 teaching and learning; te reo Māori; technology

Introduction

The socio-cognitive approach to language teaching and learning is unlike the cognitive approach in that it is underpinned by the social aspect of language acquisition. From this perspective the students are provided with opportunities for authentic social interaction for both comprehensible input and exposure to the types of language they will likely encounter in social contexts outside of the classroom. Computer-mediated communication therefore has been the perfect platform with which to provide both on campus and distance students with the opportunities for authentic social interactions. This technology has enabled both synchronous and latterly asynchronous web-based conferencing and chat interactions. Language classrooms which have integrated or embedded the use of technology into their teaching and learning programmes have been the most effective for achieving good student outcomes (Warschauer & Meskill, 2000). There are challenges, but as technology continues to advance and develop so too will the outcomes for online L2 learners.

A review of technology types and their effectiveness for online L2 teaching and learning was conducted by Golonka et al. (2012). They examined previously conducted studies on this topic excluding some forms of technology from this review. These exclusions included desktop, laptop and



Internet connectivity, televisions, video tapes, audio tapes, DVD and CD players, digital slide presentation technology, and standard email, as these are now commonplace in most spheres of education (Golonka et al., 2012). For ease in assessing the technologies effectiveness, Golonka et al. (2012) categorise each tool according to its type namely: schoolhouse or classroom-based technology, network based social computing, and mobile and portable devices. There were two main conclusions which resulted from this study. Firstly, that although there had been rapid advancements in technology over the last three decades, there was very little evidence which supported the notion that technology had played a major role in improving the processes and outcomes for online L2 students. Although there was evidence showing that students' motivation and enjoyment was significantly increased, there was little substantiation that these factors contributed to improved student learning. For the most part evidence indicating that technology had contributed to improved student learning and proficiency was still undeterminable. Secondly, the researchers urged a word of caution when using technological tools for online L2 teaching and learning. When employing technology to enhance language acquisition, pedagogical goals need to prevail over technological goals. In other words, the use of good technological tools will not improve bad pedagogical practice. Conversely, a lack of technology will not hinder good pedagogical practice (Golonka et al., 2012). This quote by Higgins et al. (2007) exemplifies the statements above: "Good teaching remains good teaching with or without technology" (p215).

Literature review

The blending of the pedagogy with technology

Ka moe a Te Āhua o te Ako i a Hangarau ka puta ko Te Kounga o te Ako (Quality teaching and learning results from the blending of good pedagogy and technology).

Distinctions have been drawn between distance education and online learning. Reinders (2012) outlines how distance education and online learning are different because although distance education can be delivered entirely online, it is also possible to use other modes of delivery, such as the use of mail and books. Holmberg (2005) describes distance education as self-directed student teaching and learning programmes. The content and structure of the programmes are compiled and co-ordinated by teachers who are situated in a different, often very distant locations. Distance students are able to access and benefit from the support of a larger organisation, such as a university. Likewise, blended learning has a variety of interpretations.

Blended learning can include programmes which offer both online and face-to-face (F2F) courses. Blended learning can also include courses that both on campus and online students access at the same time or F2F courses that use educational technologies to enhance the delivery of the course (Spiliotopoulos, 2011). Blended learning is defined by Spiliotopoulos (2011) as "a learning model or approach that mixes web-based, mobile technologies, and classroom technologies for on-campus courses or programmes (with or without a reduction in 'seat time')" (p. 15). A succinct, yet narrow, definition by Graham (2006) states that "blended learning systems combine face-to-face instruction with computer-mediated instruction" (p. 5). Reinders (2012) produced a continuum which is helpful in providing a visual demonstration of his definition of blended learning stating that "blended learning thus sits on a continuum from less to more of online delivery, with purely online courses delivering all instruction online" (p. 288).

One of the goals of blended learning is the provision of a more flexible learning environment. Flexibility provides students with the ability to accommodate time, location, delivery method, and communication constraints that would otherwise prevent them from accessing the programme. The use of blended learning also helps to deal with the change in student demographics, learning styles, public expectations, and the economic climate (Spiliotopoulos, 2011). Technology can potentially increase

interaction between teachers and students, students and students, and time on task. Furthermore, technology also provides the possibility of being better able to cater to the diverse natures of students, their needs, and learning styles (Spiliotopoulos, 2011). The introduction of technology has also compelled a rethink about L2 teaching and learning pedagogies to move away from teacher-centred approaches and towards more learner-centred approaches (Benson, 2012). Notwithstanding the influence technology has had on the paradigm shift towards learner-centred teaching, the main justification for the shift is founded in good pedagogy and producing better achievement outcomes for the students (Benson, 2012). Additionally, Garrido (2005) suggests that designers of language learning courses also need to consider how to continue to integrate Intercultural communicative language teaching (iCLT) into their online and distance programmes.

Technology has been extremely influential in the ability to deliver a better quality of distance programme and course for students. It provides students with more flexibility and the possibility of studying without having set foot in a classroom. Coming to terms with how to effectively adapt the pedagogy with the technology to achieve the desired outcomes for both students and teachers has now become the challenge. There are some difficulties with effectively integrating intercultural communicative language teaching into online and distance programmes. These include the idea of attaining and maintaining social presence in the online environment.

This research investigation was guided by the following research question: How can *kaiako* (teachers) and lecturers create more engaging online synchronous language classes for distance *ākonga* (students) of te reo Māori?

Method

Individual interviews were conducted with thirteen *kaiako* from a variety of teaching and learning backgrounds and experience and with five *ākonga* representing a range of ages. The participants were interviewed individually using a semi-structured interview schedule. The interviews were approximately 40 minutes in length and audio recorded. The transcripts were member checked.

The participants

As shown in Table 1, the *kaiako* participants worked in the tertiary sector, others in secondary schools, and others in alternative education. The *kaiako* were experienced in working in synchronous online communities with some also working asynchronously. For some of the *kaiako* working online was the primary means of engagement with their *ākonga*, and for others online synchronous classes were supplementary to their normal teaching duties. While some of the *kaiako* came from specialist online teaching backgrounds, they all came from a diverse range of teaching areas, including te reo Māori, Samoan language, Art, Physical Education, and the Social Sciences.

Table 1. *Kaiako Research Participants*

Name	Age range	Online teaching experience	Kaiako/ Ākonga	Sector
Kauri	30-40	5+ years	Kaiako	Secondary
Poroporo	40-50	8+ years	Kaiako	Secondary
Tōtara	30-40	6+ years	Kaiako	Tertiary
Nikau	30-40	8+ years	Kaiako	Tertiary

Kanuka	30-40	5+ years	Kaiako	Tertiary
Mingimingi	30-40	8+ years	Kaiako	Tertiary
Leiani	30-40	3+ years	Kaiako	Tertiary
Ti	40-50	4+ years	Kaiako	Tertiary
Kahikatea	40-50	10+ years	Kaiako	Secondary
Mānuka	30-40	5+ years	Kaiako	Tertiary
Rātā	30-40	4+ years	Kaiako	Secondary
Ngutu Kākā	30-40	5+ years	Kaiako	Secondary
Horoeka	40-50	5+ years	Kaiako	Secondary

Table 2 gives an overview of the ākonga who participated in the individual face-to-face interviews.

Table 2. *Ākonga Participants*

Name	Age range	Online learning experience	Ākonga	Sector
Pūmanawa	60-70	0 years	Kaiako	Tertiary
Kōwhai	30-40	1 years	Ākonga	Tertiary
Kawakawa	20-30	3 years	Ākonga	Tertiary
Kuru	15-20	2 years	Ākonga	Secondary
Pōhutukawa	15-20	2 years	Ākonga	Secondary
Koromiko	15-20	2 years	Ākonga	Secondary

Data analysis

The approach used to analyse the data was underpinned by the grounded theory coding framework espoused by Charmaz (2014). Charmaz (2014) advocates at least two main phases of coding. The first is an initial phase and the second is a focused phase. The initial phase involves the naming of each word line, or segment of data. During the initial coding phase, Charmaz (2014) suggested that the researcher should continually ask themselves the following questions: “What is this data a study of? What do the data suggest? From whose point of view? What theoretical category does this specific datum indicate?” (p. 116).

During the focused phase the researcher collates the most frequently recurring initial codes “to sort, synthesise integrate, and organize large amounts of data” (Charmaz, 2014, p. 113). Charmaz (2014) explained that focused codes appear more frequently among the initial codes or have more significance. Focused coding speeds up the analysis process without sacrificing the detail. This type of coding consolidates and refines the initial coding while emphasising the most important themes in the view of the researcher.

Findings

The kaiako involved in the face-to-face interviews were teaching in either the tertiary or secondary sectors. No matter which sector the kaiako were teaching, they experienced similar trials and tribulations in their online teaching programmes. Kaiako used a variety of platforms for the synchronous online teaching.

Te taha hinengaro

Te taha hinengaro is used as a metaphor for the cognitive engagement in online teaching and learning programmes.

Ako

Kaiako suggested that the development, implementation, and delivery of the programme was central to ensuring cognitive engagement in synchronous online programmes. According to Kauri, the more cognitively stimulating the programme the more likely that ākongā would engage with it. Kauri suggested that cognitive engagement was a part of the Head, Heart and Hand philosophy developed by Sergiovanni (2007), stating that it was firstly important to connect with the ākongā emotionally, which would then provide stimulus for cognitive engagement and subsequently meaningful and purposeful “physical” engagement with the programme. Kauri stressed that

to me, Sergiovanni’s Head, Heart and Hand philosophy is really important. If you want to encourage your students to focus on their work you need to get them to buy in to it by firstly appealing to their love of the subject, which will then stimulate cognitive engagement which then manifests as high levels of actual physical output.

Poroporo agreed with Kauri that there was a lot of emphasis placed on creating a programme which fed the ākongā passion, creating an emotional connection. That emotional connection then provided the impetus for cognitive engagement and a fervour of activity in the tasks and activities that ākongā were required to complete. “I know that the more emotionally connected the students are to the subject, the better engaged they are and, generally speaking, the better their results tend to be.”

All kaiako agreed that connecting firstly with the heart led to better engagement with the head and outcomes by the hand. Connecting cognitively in a synchronous online environment was much easier for the ākongā than the kaiako.

The ākongā had no problems with the cognitive engagement in the online programmes, as the majority of the ākongā were considered “digital natives”. Digital natives was the term used by Nikau who described the term:

I have heard this term digital native. It is a term or name from modern times. Digital native is a term used to describe people who have grown up using technology and computers. They know, understand and are conversant with everything about how technologies and computers work. That is my understanding of the phrase digital native.

In contrast, the majority of their kaiako were known as “digital immigrants”. Nikau added,

Digital immigrants on the other hand is a term describing people like you and I who were born prior to the advent of types of digital technology that are used and seen nowadays. However, we have since adopted and become users of its many technologies, that’s us, you and I, digital immigrants.

The implication is that it often took the kaiako longer to learn how to use the technologies as a medium of communication than their ākongā. In contrast, their ākongā found the use of the digital technology less daunting. Mingimingi said, “Students have no trouble whatsoever in using anything to do with technology. Conversely, however, teacher experience major issues if they are not familiar with technology.”

As ākongā became more comfortable and capable in the digital community, their primary focus then became the content of the online teaching. Therefore, kaiako had no issues with their ākongā in the use of digital technology. The main problem was ensuring the ākongā engaged with the content. Tōtara offered,

The main issues for me are the topic and the content. There are no problems with the students’ use of the technology, they are better than me! However, engaging with the content is a problem. My job is to find strategies which encourage them to engage and immerse themselves in the content of the topic.

To encourage ākongā to engage with the content, kaiako had to employ good pedagogical practice specifically designed for use in an online space.

Te taha tinana: Teaching presence

Te taha tinana is used as a metaphor for the kaiako and the way he or she gives life to their online teaching and learning programme. Te taha tinana includes the pedagogies, technologies, and resources used in the synchronous online community. The Education Council of New Zealand (2011) states that *ako* is “practice in the classroom and beyond. Taking responsibility for their own learning and that of their Māori learners” (p. 2). A second aspect of this document that is relevant for teaching presence is *wānanga*. *Wānanga* is defined as “communication. Problem solving, innovation. Participating with learners and communities in robust dialogue for the benefit of Māori learners’ achievement” (p. 3).

Individual ākongā working in an online community can feel isolated and alone. Therefore, they need to be highly motivated and disciplined to succeed in an online community. Leiani affirmed this when she stated:

The students I work with live on some of the other islands quite a distance from here. Some of them are the only students in their area studying my courses so isolation is a big problem for them. I have worked hard to reduce the feeling of isolation and that has helped maintain their motivation. My most successful ‘isolated’ students have been really keen and had a high level of self-discipline. I think they are driven by their sense of community and wanting to succeed for both their ohana and their community.

Pōhutukawa, one of the ākongā participants, supported Leiani’s assertion:

I have been a distance student for my entire student life. Isolation for me was not so much of a problem because my family was my motivation to succeed. I wanted to show my baby son that no matter what obstacles we may encounter, they can be overcome by sheer grit and determination.

Kauri confirmed that ākongā who had successfully navigated their way through their online programmes were passionate about their subject and had an enthusiasm for learning. Rātā supported Kauri by adding,

I had a couple of students who had some personal circumstances which made their online study more difficult. The thing that got them through was their passion and

enthusiasm. Although times got fairly tough for them their passion and enthusiasm never waned ... it's definitely what got them across the line.

While synchronous online classes seem to be a good idea and aim to cater for those students who are not in a position to attend on-campus classes, the reality of a lack of flexibility can be a challenge for adult ākongā. Kawakawa affirmed,

I found it difficult to find the time to join the live classes so I mainly watched the recordings. The reason I became [a] distance student was because my life was so busy and I did not want to be tied to attending classes at certain times. The live classes were at times when I was busy with life as I was juggling study, work, raising a young child and still trying to keep house all at the same time.

Kaiako took quite a while to develop effective synchronous online teaching and learning strategies. There was quite a bit of trial and error required; however, the basic concepts of ako (reciprocal learning) and *tuakana-teina* (master apprentice) still underpinned their online strategies. Mānuka added with emphasis,

No-one taught me any effective strategies for teaching in an online environment. I basically started out using the same strategies that I use in my on-campus classes and if they did not work that well I played around with them or modified them until they did work. It is a process of constant reflection and adaptation.

Notions of ako is an essential element of effective online engagement. According to Nikau, the development of a flipped classroom was one way of encouraging ākongā engagement. She stated,

In a flipped classroom the content of the class is provided ideally at least a week prior to the class. The content has accompanying questions which are designed to be thought provoking and stimulate discussion. If they have done the groundwork work, once the ākongā enter the digital classroom they are prepared to contribute to the whole class discussion, teaching and learning.

Kōwhai, another online student, commented,

I like the idea of a flipped classroom and when I had time to prepare it was awesome. I enjoyed that fact that my contributions came from an informed position. I also liked the different perspectives people brought from the same piece of reading. I was not always as well prepared as I could have been, as occasionally I found it difficult to make time to do the prep work before the class started.

The flipped classroom also creates space for the development of a *tuakana-teina* relationship. Those ākongā who have completed the required work for the upcoming online class and understand it well are able to become peer tutors who guide, lead, and answer questions posed by those who either have not completed the work or who have not understood it. Tī stressed,

I find that the *tuakana/teina* teaching and learning strategy is really helpful in my flipped classrooms, as not all of the students have time to prepare for our classes. Those who have are able to take a bit of leadership in the discussions and learning to help those who have not had the time to prepare understand the ideas and concepts being discussed in our session. That means I am not solely responsible for bringing everyone up to speed and I still have time to get through the planned content for that day.

The flipped classroom also provides a self-paced approach to learning. It allows those ākongā who have completed the work to continue with the next lot of work while those who require more clarification

have the opportunity to focus with their kaiako on the aspects which they find challenging. Nikau contended that

the flipped classroom allows the student to learn at their own pace. The main thing is that the student understands the content. Sometimes they will understand just by doing the readings, listening, and contributing to the discussion. Other times it may take longer for understanding to take place. They may do the readings, listen, and contribute to the discussion and still not understand. They can go back to the reading and take time to process it before understanding occurs.

Kawakawa concurred with Nikau, saying,

With such a busy life I often need time to process the learning. The readings help get me started but on their own, for me, they often do not make sense. So I look forward to listening to other people speak and discuss them. That helps me better understand the content of the class.

Tōtara explained that they have two delivery methods for their courses: blended or purely online. He stated that they had very little experience when they first began working in purely online communities and it was very much a trial and error exercise. However, using reflective processes, they focused on relationships first and then improved their online pedagogies.

Kōwhai mentioned that she preferred a blended approach rather than a fully online classes. She declared, “I need to interact with other learners. I learn better through interaction as I find it lonely working in isolation. Discussion helps me better understand content.”

Asynchronous classes

Tōtara mentioned that asynchronous classes allowed much more flexibility for ākongā, as synchronous classes tied ākongā down to a particular day and time. Some ākongā found this challenging. Tōtara insisted that “those students with busy lives tend to prefer asynchronous classes. One of the main reasons that they choose to be online students is that it is the only way that they can fit study in”.

According to Tōtara, some ākongā also found synchronous online classes daunting, as they felt more exposed. In a face-to-face class of 25 they are less likely to be asked questions as often. Tōtara argued,

Some of my students feel intimidated in their online classes. Many of these guys are more introverted than others. Their main fear is that because there are less of them in the online classes there is a higher expectation on them to interact in discussions or offer answers to the questions.

A synchronous online learning community is valuable, as it provides the ideal medium in which to laugh and to have face-to-face conversations and discussions. Pōhutukawa enjoyed the joviality, saying, “I really enjoy joking with the other students. I like the interaction as it feels just like home with my own whānau. We use laughter as a way to learn together.”

Tōtara considers that a combination of asynchronous and synchronous learning communities provide the best learning opportunities for their ākongā. Tōtara clarifies his position by saying, “In an asynchronous environment ākongā can have indirect and flexible discussions building on ideas, and then they can have direct discussions in the synchronous community.”

Kānuka introduced synchronous online classes into their programme but found that they were largely unsuccessful. Kānuka said,

My students were not interested in being involved in a synchronous online community but preferred their asynchronous contact. My students were mainly kaiako, who were still teaching or were in different time zones and they found it difficult to find the time to enter the synchronous online community. I feel that having an online synchronous community would strengthen the relationships in my programme. An asynchronous community provided my ākonga with the flexibility to work when time allowed and that was a huge positive for students enrolled in my programme.

Projecting physical presence is important in face-to-face on-campus classes, especially for smaller people. However, physical presence is difficult to project in an online community and ākonga don't really get an idea of what you look like, how big you are, or what your personality is really like. Kahikatea commented,

I think it is important to project yourself physically whether you are teaching online or face to face. Physical presence helps the students ascertain and understand what is important and less important. Physical gestures, facial expression, and nuance are a language of their own which support the oral language the students hear.

Koromiko concurred, stating, "If I can 'feel' what the teacher is saying by being able to read their body language etc, I get a better idea of what they are trying to explain."

Poroporo argued that good attendance is one of the keys to ākonga academic success and using email and text messaging encourages the ākonga to attend the weekly synchronous online classes.

Attendance for this class was at 90%. I do not micro manage the ākonga but I do insist that they take responsibility for their work and that gives them a sense of agency over how they complete it. The ākonga are not the only ones with a vested interest in this class ... so too are the ākonga's whānau. So I have the contact details of the ākonga's [sic] parents and care-givers and keep them informed of what the ākonga are doing, when assignments are due and how the ākonga are progressing. Once the relationships have been firmly established then the course begins to focus on content and making it relevant to the world that the ākonga know.

Pōhutukawa also agreed with Poroporo, adding,

I think that one of the reasons I'm doing so well in this course is because my teacher checks up on me. If I miss a class, he texts or Facebook messages me to see if I'm alright. He makes the classes really exciting too so I don't want to miss them.

Te taha whānau

Te taha whānau is used as a metaphor for the many relationships and sense of community established in the online programmes.

Whanaungatanga

It is often asserted that the development of *whanaungatanga* (positive relationships) is the foundation to effective teaching and learning. Building strong, positive relationships was one of the attributes that my former teachers possessed. Their passion for their subject and their ability to connect with their students was nothing less than inspirational. Whanaungatanga was at the heart of their teaching, connecting with their students and their students with their teaching subject. For innovation in education to occur the primary focus needs to be on *whakawhanaungatanga* (the development of positive relationships) and building a positive culture.

Nikau offered,

If the person does not know about ... or understand the importance of relationships because sitting at home alone without having actually sat in class. Developing relationships is an important factor for the learning of languages. If relationships are not fostered right from the outset, problems will occur. So for me [relationships] is one of the most important aspects.

Kauri reflected on online whakawhanaungatanga: "Firstly, the first week is spent fostering relationships, including finding out who people are, where they're from and all of those related things. Then we discuss our community and its similarity to Facebook groups."

Tōtara revealed that whanaungatanga has been difficult to develop for one of his new kaiako and their online community. Tōtara continued,

This is not a new phenomenon [sic], nor is it or totally unexpected, as whakawhanaungatanga in face-to-face situations can also be just as difficult. For example, the nuances and subtleties of body and facial language which accompany oral language and tend to be more obvious in a face-to-face class may not be so apparent to the online community.

Therefore, strategies need to be adopted to account for that lack of recognition and to assist with the development of positive relationships in an online community. Tōtara also stated that retention of ākongā in their te reo Māori programmes was a problem, commenting,

Students often had problems with engagement whether that is caused by technology or the inability to form a relationship with their kaiako even though their online community may reflect the values they feel are important in their face-to-face classes.

Conversely, Tōtara added that some students flourished in the online community, adding,

Often students who were withdrawn and rarely heard from in their face-to-face classes suddenly came to life in their online community. The combination of the online interaction with other students and given space and time to contribute encouraged them to become active participants in their online communities. Students were able to gain momentum from each other.

While this worked well for the online ākongā, according to Tī, some of the face-to-face ākongā often found the relationship challenging, an imposition, and a distraction for them at times. Being distracted could sometimes lead to frustration. Tī shared,

After the initial experience some of my face-to-face ākongā asked if they could be excused from being the face-to-face friend for the online ākongā. They said they found it difficult to concentrate on their own work because their online friend kept asking questions which was a distraction for them.

As a result of this, Tī decided to rotate the friend role around the entire class. It served two purposes. Firstly, it meant that the whole cohort shared the responsibility of *manaakitanga* (an ethic of care) and caring for their online friends. Secondly, it developed a better sense of whanaungatanga as they all got to know each other better.

Kauri stated that the first week of their synchronous online programme is spent following tikanga Māori and establishing connections, relationships, and getting to know each other. They answer questions important from a Māori perspective, such as *ko wai tō ingoa* (what is your name?) and *nō hea koe* (where are you from?). Answers to those two questions from a Māori world view can reveal so much about the ākongā. Kauri maintained that

at the start of each year, whakawhanaungatanga is the main topic. Therefore, for the first and second weeks we follow Māori cultural practices. So we begin with mihimihi or introductions, but not of the superficial type. I get my students to do a deep and expansive exploration of their genealogy, of their tribal proverbs, about famous people in their whānau and ancient traditional narratives. That is the foundation of relationship building.

Manaakitanga

Tōtara said that some ākongā were excited by the concepts of collaboration and knowledge building in an online community. Collaborating gave them a sense of agency and responsibility for their learning. Tōtara declared that

the co-construction of the content of the programme by taking ideas from the students and infusing them with the teacher's thoughts added to the sense of community. Of course the teacher does have to guide the discussion in such a way as to ensure the students feel like they've been heard.

Kānuka explained that their programme began with a week of face-to-face on-campus classes. There were a number of foci during this time, including the sharing of information about the programme, establishing relationships, and establishing a learning community. In Kānuka's opinion relationships are more important than course content. Kānuka suggests that "content can always be taught later but relationships are more difficult to forge later. As this programme works as a cohort model student success is essentially dependent upon the way they can provide support for each other".

In another programme in which Kānuka is involved they surveyed their ākongā to see if it would be valuable to have some face-to-face on-campus time together. Initially, the responses were in favour of meeting together face to face, but when confronted by the logistics of being tied to a day and time the ākongā were less enthusiastic about meeting together. Pōhutukawa said,

I was really keen to meet with my teacher and other colleagues, and so I made time to make this happen. However, not all of our fellow students ended up coming along, as it was hard to find a date and time that suited everyone. I still found it a valuable experience and the friends I made then are still friends today.

Kōwhai studied four papers as an online student. She and her fellow study companions were encouraged to introduce themselves to one another; however, they were limited to one paragraph and a number of interesting facts. Most of her cohort stuck to the brief, not wanting to push the boundaries. However, had someone else used their mihi Kōwhai might have had more confidence to use their mihi also. Kōwhai expressed her opinion, saying,

One of the most important aspects of using mihi to introduce oneself is that it indicates a commitment and interest in the application of bicultural principles. In only one of the four papers did my lecturer make an effort to foster the teacher-student and student-student relationships or whanaungatanga. As a result, the efforts of the lecturer to nurture those relationships this was the one paper that I really engaged with.

Kōwhai enjoyed being able to engage in discussion and the exchange of ideas, which helped to build the sense of community in this paper. At the start of the paper the participants attended a block course. The block course was instrumental in the formation of whanaungatanga (belonging or community) of the course. Another of the other papers that Kōwhai studied also included a block course. This block course was held much later after the paper had started and did not have the same impact in the creation of whanaungatanga.

Te taha wairua

Te taha wairua is used as a metaphor for the injection of the personality and humanism into the online programme. Te taha wairua contains elements of whanaungatanga, manaakitanga, and wānanga definitions stated by the Education Council of New Zealand (2011). However, these elements alone do not fully embrace the holistic understandings of *wairuatanga* (spirituality).

Wairuatanga

All participants had difficulty articulating a definition of *wairua*. However, the Māori and Pasifika participants showed that they had an understanding of wairua beyond spirituality. Those participants also defined wairua as intention, aura, essence, mood, and quintessence. All of these definitions convey a feeling of emotional and spiritual connectedness. Wairua was a difficult phenomenon to define but it was integral to building a sense of community. Nikau also stated that in their opinion the most effective means of establishing and maintaining a sense of wairua between the kaiako and ākonga and for the *hapori* (community) as a whole was to ensure some form of actual face-to-face contact was continued. For example, the kaiako may hold a noho marae at the beginning of the course. Periodically, perhaps at least once a term, the kaiako may organise wānanga in various parts of Aotearoa and invite ākonga to attend these. In that way the ākonga would be able to continue to have the whanaungatanga and their wairua stimulated. Nikau offered this explanation:

It is difficult to explain what wairua is. For some it is something within a person, something which develops when a baby is conceived. While the person is alive, so too is their wairua. Once they die, so too does their wairua. But the wairua that we're talking about here is perhaps something different. We are probably talking about inner person. Not the physical things such as body organs but spirituality.

In Poroporo's opinion, wairua is a fundamentally important element in teaching and learning in a synchronous online environment. He explains,

Wairuatanga goes hand in hand with whanaungatanga and are so closely related that it can be difficult to distinguish one from the other. I also think that the stronger the wairua connectedness is the stronger the sense of community and belonging becomes.

Poroporo conceded that wairua was very difficult to define but described wairua as

the spiritual connection between the kaiako and ākonga, the kaiako and the wider whānau, between each of the ākonga and everyone's connection to the teaching subject. The subject is also an important part of the wairua community and is often left out of the equation.

Wairua can also indicate how the ākonga are feeling at the time, whether they're stressed, happy, upset, or even distracted.

Wairua is felt in many ways. It is transmitted by use of all the sensory organs in the body through touch, smell, taste sight, and sound. Wairua is much easier to convey in a face-to-face class. However, successful and effective kaiako are able to convey wairua using facial expression and body and oral language to foster a sense of community. Wairua was more widely felt in more traditional times and that every person has wairua. However, the ability to project and receive wairua is a rare phenomenon in the modern age although their Pasifika relatives may still be more connected by wairua.

Discussion

There were ākongā who enjoyed engaging in the synchronous online classes. These ākongā found the synchronous classes very helpful for their language development and enjoyed the whanaungatanga created by being a part of the online community. They felt less isolated and felt that they got to know some members of the class better. Ākongā also felt supported by being able to have their questions answered instantly. The kaiako reported that connecting with the heart enhanced engagement in te reo Māori which increased the confidence of ākongā, which in turn tended to improve the level of proficiency in te reo Māori. Quintessential to connecting with the heart are the attendance and the motivation of the ākongā. As one of the kaiako stressed, when there is a stronger wairua connectedness, then there is a stronger sense of community and belonging. This belonging included being part of an online community of support, where wairuatanga went hand in hand with whanaungatanga. It was evident that many of these ākongā were very familiar with the use of technology and were happy working in a synchronous online environment, which was similar to Skype.

Kaiako provided different perspectives as the deliverers of the synchronous online programmes. Most of the kaiako understood that whanaungatanga was an important aspect of encouraging engagement in synchronous online programmes and that building of a sense of belonging to an online community was the foundation for positive engagement in the content of the programme. Each kaiako had different ways of building or creating whanaungatanga in their programmes. Some made a concerted effort, dedicating as much time as they deemed necessary at the beginning of their programmes to embed whanaungatanga into their programmes. Some kaiako also maintained contact with their ākongā outside of the time allocated by the timetable using a variety of digital media such as Google Hangouts and Instagram. Kaiako also made personal visits to meet their ākongā and whānau face to face. These kaiako had either organised field trips where their ākongā could meet each other or had cultural values and beliefs which made face-to-face meetings an imperative. On the other hand, there were kaiako for whom a short presentation about oneself online was sufficient and the content of the course was more important.

Kaiako also had many different ways of bringing the programme together. All kaiako were comfortable and experienced working in an online environment, as the skills they had developed using social media transferred well into the online teaching environment. The technology, resources, and equipment provided by their schools or institutions for online synchronous teaching was of a high quality, modern, and reliable and as a result they did not experience any technological issues from their end. If there were technological issues, they were at the ākongā school end. Kaiako used a variety of strategies with which to engage with their ākongā. Some kaiako found that using the flipped classroom strategy worked well for them. These kaiako would post all of the work they had planned for the term online. They were then happy for the ākongā to work through the programme in their own time as long as they kept up with each week's work at a minimum. If they wanted to go ahead of what was planned for that week then that was also fine. The kaiako who used this strategy then found the ākongā would come to their classes prepared for the lesson with questions and ready to discuss the kaupapa of the week.

Alternatively, some kaiako chose to upload the work for the week in the week prior to meeting. They understood that this was a much better means of monitoring the ākongā progress and keeping them on track. It also did not intimidate those ākongā who worked at a slower pace than the others. As long as the ākongā had prepared for the class that week they too were prepared with questions and points for clarification or discussion. The biggest barrier to creating an effective synchronous online environment from the kaiako perspective was attendance. Maintaining consistent attendance from week to week was an issue for some ākongā. As a consequence, ākongā academic results were adversely affected. The limited online time spent with kaiako each week was a strong contributing factor to a lack of

understanding about the course content. There was only one hour allocated to online teaching time. Contact outside of this time was via Goggle Hangouts, email, or text messaging, and there was only a limited amount of information that could be communicated this way.

The lack of understanding then led to a loss of confidence and a subsequent lack of motivation. The focus on wairua in the online learning space was found to be critical for some kaiako. This was prompted by kaiako understanding the values and beliefs which underpinned the cultural practices of their ākongā. The Māori and Pasifika kaiako, in particular, had a strong focus on ensuring wairua played a prominent role in building the sense of community in their online programme, the threads that connected everyone to one another, and the kaupapa. Each kaiako had a different way of making those wairua links. Most relied on the tikanga of karakia to both open and close their online classes to make the initial connection. They then reinforced that wairua link by strengthening their relationships with their ākongā. The kaiako did this by getting to know their ākongā and their whānau better.

Some kept in constant contact with their ākongā and others made an effort to get out and meet them face to face, even attending the significant events such as end of year prize giving ceremonies. For these kaiako and ākongā the inclusion of wairua in their programmes certainly increased their sense of whanaungatanga, confidence, and trust in each other and levels of engagement in the online programme. The heightened sense of confidence and trust moved many ākongā from passive consumers to active contributors to the online programme. Passive consumers attended the online programmes but made little or no contribution to the discussions whereas active contributors were involved in most aspects of the online engagements. In instances where kaiako met with their ākongā face to face, they actively discouraged the ākongā from bringing their laptops or devices to ensure they engaged cognitively with the kaupapa and were not tempted to disengage by other unrelated online distractions.

Conclusions

The implementation of technology involves a change to teachers' practice (Cavanagh, 2011) in both their subject knowledge and pedagogical knowledge. With respect to the introduction of technology in classrooms, a different context, it can be seen that there is an intersection between teachers' knowledge, beliefs, and culture, and this may be the same for Computing. Teachers within a context of change face many challenges.

From a Māori and Indigenous perspective, effective engagement in an online environment encompasses more than exemplary kaiako skill and ability. It also requires the development and maintenance of a sense of connectedness between kaiako and their ākongā, the community of learners, and the kaupapa. It can be difficult for Māori ākongā to feel connected if a "ritual of encounter", such as those provided by traditional practices, such as pōwhiri or mihi whakatau, have not been followed. Creating a ritual of encounter practice for distance ākongā can be challenging but is of the utmost importance. There are many reasons why such a practice is necessary, such as the establishment of whanaungatanga.

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