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Using a Word Game to Revitalise Language and Promote Equity and Inclusion in a Quantitative Subject

Each year increasing numbers of Māori and Pacifica students graduate from universities but the numbers qualifying in accounting remain dismal. Many reasons for this phenomenon have been explored, one of which is a lack of cultural representation. This paper provides a reflective commentary on how gaming can be used in a quantitative subject to promote an Indigenous language to foster equity and inclusion in the classroom. Looking through the lens of a Constructivist Developmental Pedagogy, the paper applies cultural intelligence to urge proponents of diversity to go beyond merely recognizing awareness of cultural differences to embed cultural appreciation in learning.

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Introduction

Tertiary education is an increasingly challenging space to traverse. Challenges include fast-changing demographics, the increasing need to confront systemic stereotypes and to create openness to different styles and types of communication. Understanding and addressing diversity, inclusion, and equity (DEI) is one of the key challenges the chief executive officers of companies will continue to face over the next 10 years (Protiviti 2021). As one executive stated, 'Expectations around DEI are occurring faster than the pace at which our organizations are managing' (Protiviti 2021, Table 1). Today's society requires educators to assist students in becoming culturally intelligent. Triandis (2006: 22) defines this as:

> Learning to put oneself often in the shoes of other cultures [to] develop a healthy criticism of the norms of one's own culture as well as an openminded willingness to see the other culture the way [Indigenous people] see their own culture.

This requires education to play a part in enhancing intercultural competencies, a phrase defined by Byram (1997: 71) as the ability 'to interact with people from another culture' in a language other than one's native tongue. This chapter provides a reflective commentary on how to address intercultural competencies by using a game in a quantitative subject, auditing, to promote an Indigenous language and foster equity and inclusion in the classroom.

In most countries where colonialism has played a role, the language of the colonisers has become the language of business, while Indigenous languages, such as te Reo Māori in New Zealand (NZ), are under threat of extinction (Barrett-Walker et al. 2020). With changing demographics, there are now more non-native speakers than native speakers of English in the world. To meet the needs of a global society, Hillard (2014: 247) said it 'is critical that students be given opportunities to develop cultural awareness and intercultural communicative competence'. One example where promoting intercultural competence has had the desired effect is in the resurgence of the Welsh language (Barret-Walker et al. 2020). As Griffiths (2021: 53) notes, while Welsh was in severe decline before the start of the millennium, today Welsh speakers total more than 800,000 and 'the Welsh government … is committed to a million speakers by 2050'. Language is not just a communication tool but is part of culture (Britannica 2020). Hohepa et al. (1992: 334) argue that 'for language acquisition, one needs to develop and maintain a strong sense of both the social and cultural context'. If teachers and students embrace intercultural communicative competence in education, revitalisation of Te Reo Māori in NZ can potentially mirror the Welsh experience of language revival.

Colonialism has also affected the socio-economic circumstances of Indigenous people, leaving them worse off than their non-Indigenous counterparts. Biddle (2009) found that, rather than the previously accepted idea that poverty is limited to Indigenous people living in remote areas, communities in urban areas are equally affected by this inequity. Cao and Maloney (2018) regard accounting as a tool that can be used to improve the welfare of Indigenous people, as it helps to develop the economy and improve self -reliance. Despite its potential to create economic well-being, Theodore et al. (2020) mention that, while increasing numbers of Māori and Pasifika students are graduating from universities, the numbers qualifying in accounting and auditing remain low. Staniland, Harris, and Pringle (2021) found that Māori and Pasifika students feel they do not belong in accounting, owing to the lack of cultural representation in the accounting field.

Given the role that accounting can play in uplifting people from poor socio-economic conditions, lack of Indigenous cultural representation risks exacerbating existing inequalities. In this chapter, I therefore ask: what can educators in accounting do to make pedagogical and professional spaces more welcoming to Indigenous communities?

I explore the use of the word game *Wordle* (Makuch 2022) in the classroom as a way to contribute to the development of cultural intelligence, by creating experiences for learners that increase student engagement with te Reo Māori in the auditing class. This paper is unique as it combines an awareness of both the shortage of students qualifying in the accounting field and the threat to NZ's Indigenous language, to promote diversity, equity, and inclusion in the classroom. This paper practically applies the benefits of cultural intelligence to promote an Indigenous language to foster equity and inclusion in the classroom.

Low Representation and Participation of Indigenous People in the Accounting Profession

Worldwide under-representation of Indigenous accountants remains a phenomenon, as evidenced in Table 1 using data from the USA.

Accounting research initially focused on the lack of recognition of the experience and skills of women which caused the under-representation of women in the accounting professions (Hammond 1997; Welsh 1992). Khlif and Achek (2017) believe the last decade showed an improvement in the number of female accountants in the workforce. Table 1 illustrates that women's struggle for a rightful place in the profession of accounting is not over; it also indicates that underrepresentation of Indigenous people is another frontier the accounting profession must conquer. African Americans represent a dismal 8.5% of the auditing workforce in the USA and data for Native Americans—including Alaskan Natives—was not even available in the IMA study. While Francis et al. (2015: 628) claim 'There has been a significant increase in the number of women belonging to top executive teams',

Table 1 suggests that these increases have not materialised in executive positions where knowledge of accounting matters, with female Chief Financial Officers (CFOs) making up only 13.9% of USA board positions in Fortune 500 companies. While I do not have exact data for the number of Native American auditors and CFOs, I can extrapolate from the percentage of African American and Hispanic people in these roles—8.9% and 1.6%, and 8.5% and 1.4%, respectively—that the positions of Indigenous Native Americans and Alaskan Native people are equally dismal.

Underrepresentation of Indigenous people in top accounting jobs is not unique to the USA. Smith (2020) revealed that 'there are only 17 Black partners in the top eight accounting firms' in the UK. For many decades, researchers across the globe have studied the phenomenon of underrepresentation of various minority or Indigenous groups in both the accounting profession and accounting education. In South Africa, Botes (2018) looked at the challenges Indigenous students faced in entering accounting courses at the end of apartheid, Boshoff and Caarstens (2003) investigated apartheid's influence on the demographics of the South African chartered accountancy profession, and Sadler and Wessels (2019) and Wiese (2006) all investigated the rate of progress of Indigenous people in the accounting profession. In Australia, Vitartas et al. (2015) and Rkein (2014) studied how to foster Indigenous students' interest in business education. In New Zealand, Whiting and Wright (2001) focused on gender inequity, and Jacobs (2000) looked at the representation of an important cultural document (Te Tiriti o Waitangi) in accounting education.

Rkein and Velayutham (2018) and Wiese (2006: 152) mentioned that many Indigenous Africans are raised with 'a language other than English, the lingua franca of commerce', which often makes social interaction in the education and business world a challenge. Botes (2018) indicates that, while a number of commerce terms such as cheques and bank reconciliations may be commonly used in traditional Western households, this is not always the case in households where English is not the primary language of communication.

Researchers have determined that lack of role models (Enofe 2010), lower self-efficacy (Ali & Narayan 2019), and lack of cultural representation (Staniland, Harris & Pringle 2021) are reasons why Māori and Pasifika students feel they do not belong in accounting circles. Fukofuka and Ali (2022: 665) indicate that underrepresentation in the accounting profession will remain because, even when these students enter the field of study, 'they experience feelings of being out of place'.

Gamification in Education

Guillén-Nieto and Aleson-Carbonell (2012) indicate that there are numerous benefits to the use of games in an educational environment. As Squire and Jenkins (2003) note, gaming transforms attitudes towards learning. They argue that play is a critical element in creating and learning about human culture, and the benefits of gamification—using games in a formal educational environment—are numerous. 'Games teach through encouraging competition, experimentation, exploration, innovation, and transgressions' (Squire & Jenkins 2003: 5). Boyle (2011) argues that games 'play a vital role in building students' self-confidence'. Patricio, Moreira and Zurlo (2022) highlight how gamification builds on the psychology of human engagement and capitalises on the exciting, motivating, and engaging strategies and design ideas from games. Researchers Zirawaga, Olusanya, and Maduku (2017) identified that many of the games used for educational purposes focus on improving critical thinking, help students to remember and gain visual and computer skills, and teach sportsmanship, interaction, and collaboration with peers.

Table 1. Diversifying U.S. Accounting Talent: A Critical Imperative to Achieve Transformational Outcomes (Institute of Management Accountants (IMA)). Source: Jiles, Littan and Jules (2021: 7).

	2019 US population	2019 US auditors and accounting Workforce	2019 Sitting CFOs of Fortune 500 Companies	2018 Partners in Accounting Functions in US CPA firms
Female	50.8%	61.7%	13.9%	23.0%
Hispanic or Latino	18.5%	8.9%	1.6%	2.0%
Black or African American	13.4%	8.5%	1.4%	1.0%
Native American and Alaskan Native	1.3%	No data available	No data available	0.2%

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Van Ments (1999) believes that using games in education can simplify complex topics. Michael (2016) indicates that even if games may just seem like fun, they assist in submerging the individual in the targeted activity. Randal et al. (1992: 269) back up these findings when studying games for educational purposes, stating that they found that 'games teach language most effectively when targeting specific objectives'. Building cultural intelligence is a complex problem that can be a challenge to teach. Backed by this plethora of evidence, I am exploring the use of games to achieve this challenge in a way that is fun and engaging for students. As Huizinga (1955), a scholar of Indo-European languages, famously said: 'Let my playing be my learning and my learning be my playing'.

Theoretical Framework

In this paper, I explore the use of games as a way educators can help Māori students feel less out of place or more welcomed in the classroom and, at the same time, educate the whole class on cultural intelligence. To achieve this, I use a framework of Constructivist Developmental Pedagogy (CDP) (Magolda 1999) to provide an epistemological framework to understand how humans make sense of knowledge.

CDP is a framework that combines 'cognitive science, sociology and anthropology' to recognise learning as a constructive process (Black & Ammon 1992: 324). CDP sees knowledge 'as created rather than received, mediated by discourse rather than transferred by teacher talk, explored and transformed rather than remembered as a uniform set of positivistic ideas' (Holt-Reynolds 2000: 21). The Magolda (1999) framework emphasises three key principles:

- Students are validated as knowers who bring their relevant experiences into the space of learning.
- Learning is situated in the learners' own experiences.
- Learning is a mutual construction of meaning between educator and learner.

Acknowledging students as knowers means that educators can begin to connect with the learners' prior knowledge, even when the knowledge is not necessarily located in the field the educator specializes (teaches) in. For example, an educator teaching accounting to students who have never learnt accounting may relate it to other times when learners had to learn a new concept. For example, when they had to learn maths for the first time, the example of building a tower with blocks in kindergarten may have been used to illustrate how just like blocks, one maths principle is based on previous principles to build a solid foundation. This simplification helps to decrease distance between the educator and the learner. Secondly, by engaging with learners' own experiences, the educator makes use of learners' current understandings to build upon their learning. An accounting educator may be able

to relate the topic of budgeting to learners' own experiences of budgeting for personal expenses, likely a common experience for university students often living with a tight budget. This principle creates conscious awareness: 'a twofold state of being in which the mind is both awake and aware of its surroundings. By raising consciousness and being more aware of what is going on around us and within us we have a better chance of reacting less out of emotion rather than fact' (Kimberley 2019).

While students' initial reaction to the concept of budgeting may be emotive—'what's that?' or 'it sounds difficult'— relating it to their everyday life makes them consciously aware that they are familiar with the concept. Without conscious awareness, it is easy to react in terms of emotion. The final principle of mutual construction means that learning becomes a voyage of self-discovery between both educator and learner through the process of shared application of experience and evidence. This means both parties become active learners in this process. It also means that the educator can experience vulnerability. While vulnerability can be a scary concept for some, Magolda (1999) indicates that it is essential for learning. For educators this is a game changer, as they are traditionally used to being the authority figure based on their knowledge of the field. The boundaries of vulnerability — how much both students and educator are willing to be exposed — are determined by the educator and the students themselves. This implies that everyone should only share as much as they feel comfortable with.

Method

I have always been a strong advocate of the benefits of learning through play. I aimed to build cultural awareness among all students by using a teaching strategy that filters knowledge of the topic through the students' existing cultural frames of reference, a technique also known as Culturally Responsive Teaching (Gay 2018). Based on my research into the value of games in an educational setting, I saw the game *Wordle*, created by Wardle (Makuch 2022), as a tool to introduce te Reo Māori in an auditing class.

Wordle is an online word game where players have six chances to find a five-letter word. When they enter their attempt into the *Scrabble*-like interface, each tile turns a different colour: green if the letter is in the correct place; yellow if the letter is somewhere in the word but not in the correct place; and grey if the letter is not in the word at all. Several sites make it possible for an educator to adapt *Wordle* by entering their choice of words and varying the length of the words. For the activity discussed in this chapter, I chose Strive Math (2023). Examples of how this is done are provided in the following section.

Discussion

Towards the end of every lecture a question can be asked requiring a one-word answer about the lecture, but the students must supply the answer in te Reo Māori. For example, to explain the concept of auditor independence, I could provide an example of an employee performing an audit where the auditor has shares in the company. Students could be asked to identify which ethical principle in auditing is compromised but required to supply the answer in te Reo Māori. Students would not be allowed to search for the word online. While a *Wordle* could potentially be hand-drawn on a board, I prefer to use Strive Math (2023) so that each student can have access on their own electronic device to the game. For example, the word for independence in te Reo Māori is tūhāhā. As someone in the process of learning te Reo Māori, I would check the correctness, meaning, and pronunciation of the word with one of my colleagues who is a fluent speaker of te Reo Māori. I specifically would not enter the word with the appropriate macrons used in te Reo Māori in place, as later in the process this would provide a point for discussion of how the word is pronounced.

To begin, the educator enters the word in *Wordle* and generates a URL link. Students could then start to play as a team or copy the link and start their own attempts at solving the word. This brings a healthy measure of competition into the activity. After the first attempt to discover the word, green-yellow-grey tiles appear. From this, students may identify that some letters are incorrect, some are correct letters but not in the right spot, and some correct and in the right place. Students have six attempts and each time an attempt would highlight letters in green if they are correct and in the correct place, or in yellow if the letter was correct but not in the correct place.

Once the word is correctly entered all the letters are green. This can then provide the educator with an opportunity to ask if any of the te Reo Māori speakers in the class will pronounce and spell the word correctly in te Reo: in this case, tūhāhā. It will be up to both students and educator to what extent they want to be involved in this explanation. If students are willing, one could also ask the fluent speakers of te Reo Māori to help others in the class with the pronunciation.

This activity can be followed by a discussion of the deeper cultural meaning of the word, where all students in the class can then ask questions in a safe environment. In this instance, the connotations of the concept are vastly different between English and te Reo. English speakers would discuss 'independence', which western European cultures associate with self-determination, autonomy, and the freedoms of reaching adulthood and moving out of the childhood home into the wider world. However, 'tūhāhā' is more directly translated in te Reo as 'standing alone.' With the greater focus on collectivist community and strong family ties in te ao Māori

than in Western European worldviews, the connotations of the word 'tūhāhā' become more negative than its English translation, implying isolation, separation, and loneliness.

Benefits of Playing *Wordle*

Gamification and cultural intelligence can form a symbiotic relationship when a game is used to transform diverse parties' attitudes towards cultural understandings. Recognising that learning is a constructive two-way stream rather than a one-directional activity performed by the teacher, a game like *Wordle* offers the benefits of validating students as knowers, learning is situated in students' experiences, and cultural understanding is co-constructed by all parties taking part in the process.

Students validated as knowers
According to Magolda (1999), students must be validated as knowers who bring their relevant experiences into the space of learning. By inviting Indigenous learners to share their language, they are established in the classroom as possessing valuable knowledge (experts) which others in the class may not have. This creates a more even playing field. Students who do not have knowledge of the Indigenous language start realising that, although they may have the advantage of knowing business terminology (Wiese 2006), there are also business terms in the auditing class which may have a completely different meaning in te ao Māori. I believe this is important as many accounting students could end up working, for example, in Trusts in NZ where a Māori kaupapa (approach) is the dominant approach to business.

Learning is situated in the learners' own experiences
Using words in te Reo Māori means that learners can relate the concepts to understandings that they have from their socio-cultural backgrounds. For example, the concept of tūhāhā may be much more meaningful to a student whose native language is te Reo Māori than the concept of independence; their deeper knowledge and understanding of te Reo Māori allows them a better grasp of just how uninfluenced or objective the auditor must be in 'standing alone' in their role.

Learning is a mutual construction of meaning between educator and learner
Magolda (1999) explains that learning can only take place when both the educator and the learner are able to open themselves up to be vulnerable. Learning a new language makes the educator, and those who do not have te Reo Māori as a first language, more aware how difficult it can be to grasp new concepts, especially for those studying in a second language. As an educator, learning a new language and attempting to teach the names of familiar concepts in a language in which I'm not fluent makes me more cognizant of just how challenging it must be for all students studying accounting and auditing for the first time, because learning

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the unique jargon of a new specialization can feel much like learning a new language. I know that embarking on this process gives me a far greater understanding of, and empathy for, the challenges some of my students face. It will help both the learners and the educator to feel how it is to walk in another's shoes. The cultural discussions that can follow based on the answers to the class's *Wordle* game can also help to clear up perceptions which people are often too shy or too afraid to ask, if it is done in an environment of mutual respect.

Conclusion

This paper reflects practically upon the benefits of gamification in education applied in conjunction with a constructivist developmental pedagogy to build cultural intelligence in both students and educators. Using such an approach turns *Wordle* from a fun leisure activity into a tool to communicate and transfer language and culture in an engaging way. This focus on diversity, equity, and inclusion strengthens values of empathy, communication, and self-confidence in the classroom, confronts systemic stereotypes by drawing on the prior knowledge of students as experts in their own culture, and builds bridges of language and community to enable professions previously considered tools of colonialism to respond to the fast-changing demographics of the modern world.

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