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Te Kōhanga o Te Tūī - 2022

Data Analysis Report: Based on whānau responses to an online survey designed to gauge their perspectives on the use of assistive technologies in te reo Māori language acquisition

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Introduction

Background

The focus of this research study was to explore whether te reo Māori acquisition and digital literacy can be aided or accelerated in the formative years, (children under 5), using AI-based assistive technology or digital app. The use of an online survey was approved by the Auckland University of Technology Ethics Committee (AUTEC) on 01 March 2022. The survey was designed to gauge the attitudes of Māori parents in the use of digital technology in language learning with their tamariki (children). Questions were also designed to yield responses from Māori parents and whānau (family/ies) on what particular capability features they would like to see incorporated in the future design of digital tools for te reo Māori language acquisition.

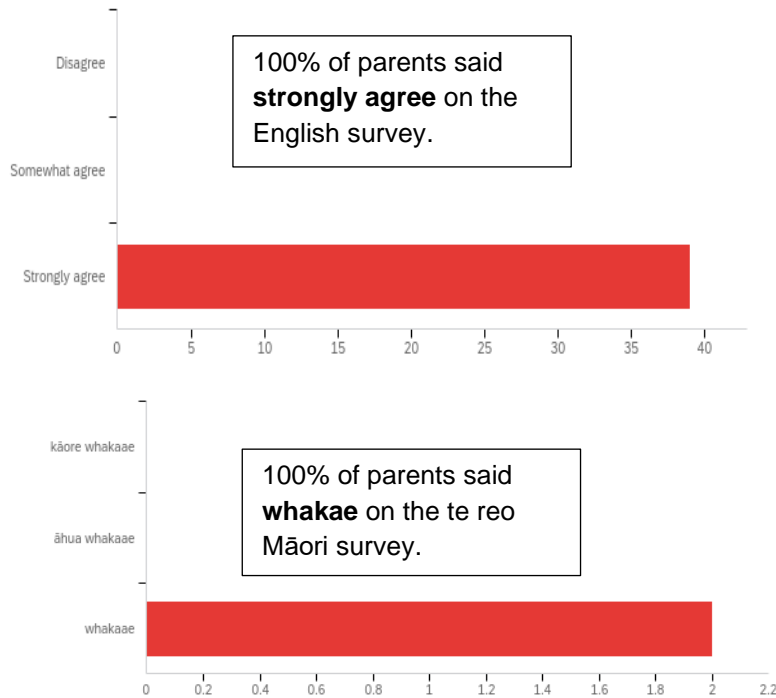
The Survey

The survey was developed in both English and te reo Māori (the Māori language) with separate links to each version. Both links were socialised through the Auckland Kindergarten Association (AKA) usual modes of communication to the parents of tamariki Māori attending an AKA kindergarten. The survey was limited to parents living in the greater Auckland region who had an interest in raising their tamariki in the Māori language. Parents and whānau self-selected and gave permission to the use of their anonymised data for the purposes of this research when they pressed the 'I agree' button at the start of the survey. The survey went live on 05 May 2022 and was conducted throughout Auckland's extensive Covid-19 lockdown period. This made it difficult for AKA to effectively promote the survey to their constituent parents and it was agreed that the survey should remain open until 18 October 2022 to allow time for ongoing promotion and to achieve the targeted number of (50) minimum responses to support validity. The final tally of responses was $n = 49$; $n = 41$ responses received for the English form; $n = 8$ responses received for the te reo Māori form. A total of $n = 43$ responses were deemed valid as $n = 6$ responses were not recorded on the te reo Māori form. The six incomplete forms may have occurred because the respondents were having difficulty understanding the questions in te reo Māori. Respondents were able to contact the lead researcher to report any issues, none of the respondents to either form reported any difficulties or reasons for not completing the survey.

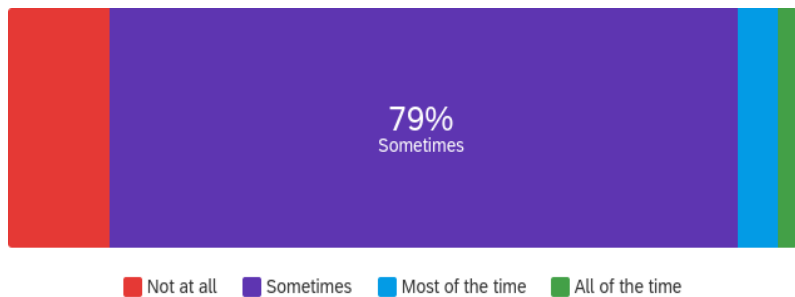
A total of 10 questions were included in the survey, of which three related to demographic factors: age, gender, and iwi affiliation. The demographic data for both te reo Māori and English surveys are available in Appendix 1.

Survey Responses

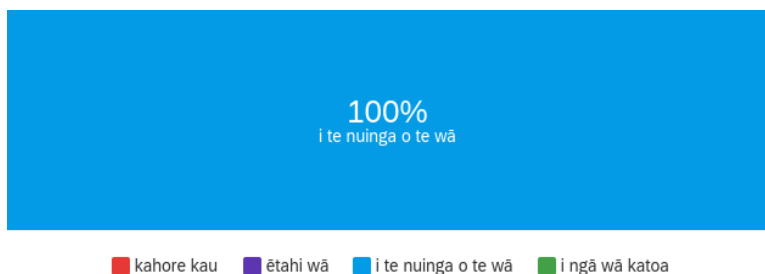
3. All tamariki Māori should have access to te reo Māori in the early years birth-5 years.



4. Do you and your whānau speak te reo Māori at home?

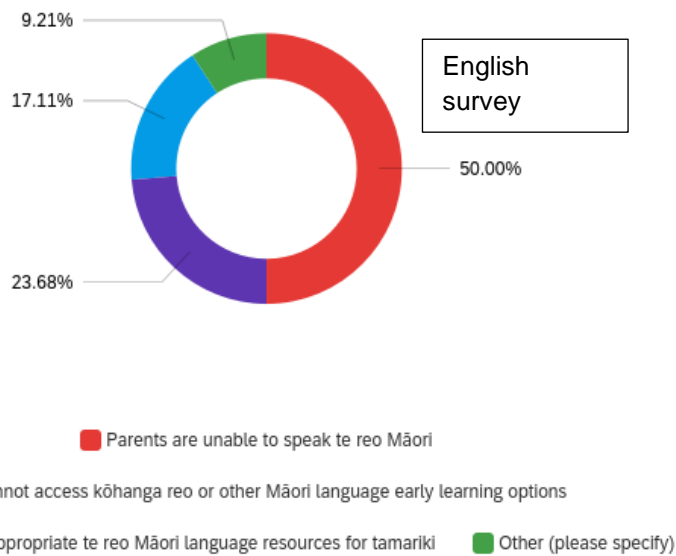
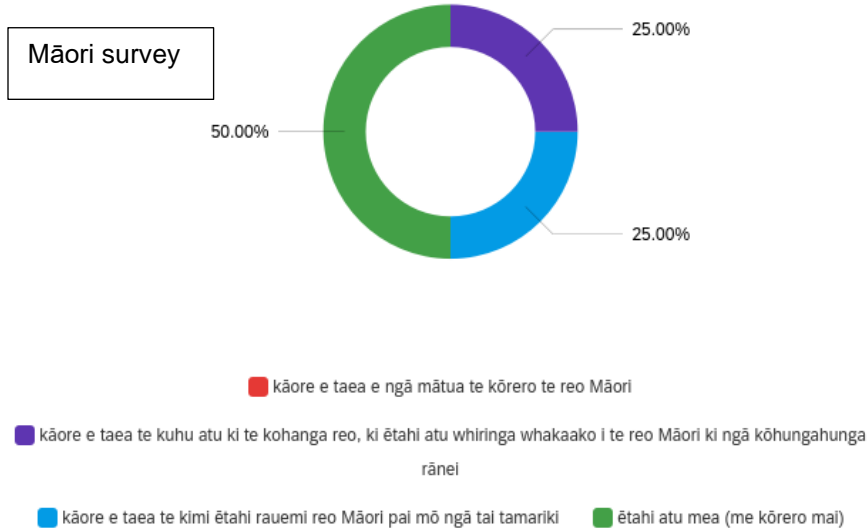


79% of parents said **sometimes**; 13% said **not at all**; 5% said **most of the time**; and, 3% said **all of the time** on the English survey.



100% of parents said **i te nuinga o te wā** on the te reo Māori survey.

5. What are the biggest barriers to tamariki Māori (under 5) learning their language? (Select all that apply)



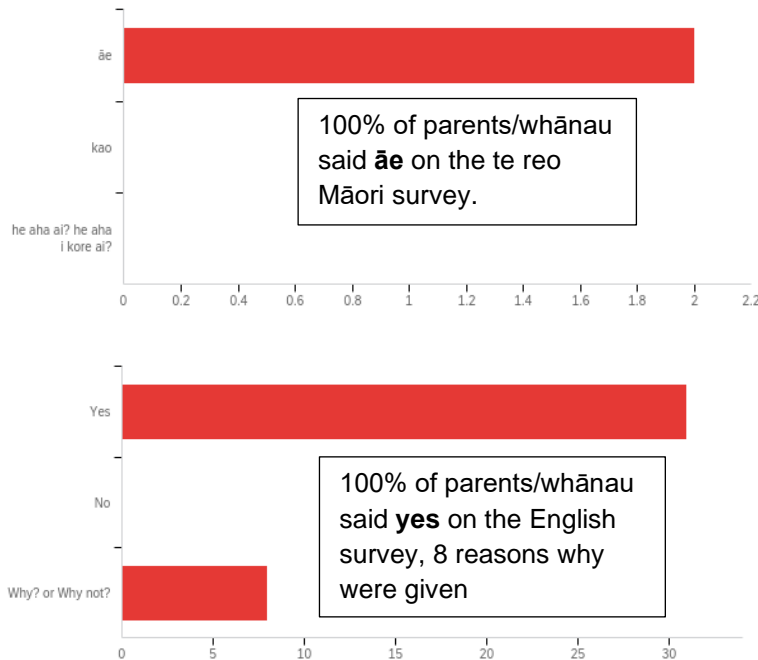
Other barriers:

- Parents can speak te reo Māori but choose not to
- Whakamā (shy, embarrassed)
- Wider whānau not being able to speak Māori, learning Māori is not a goal for them. Long waiting lists for kōhanga reo (Māori language preschool) and puna reo (a kaupapa Māori early childhood

centre) was a challenge for me as well in helping my tama (son, boy, nephew) be immersed in te ao Māori (Māori world) given that I am the only reo (language) speaker at home

- Whānau financial situation is barrier for parents to access resources and facilities especially those living in rural areas

6. If an interactive digital tool could be developed to teach young children te reo Māori, would you use it with your tamariki to help strengthen their language learning at home?



Reasons why:

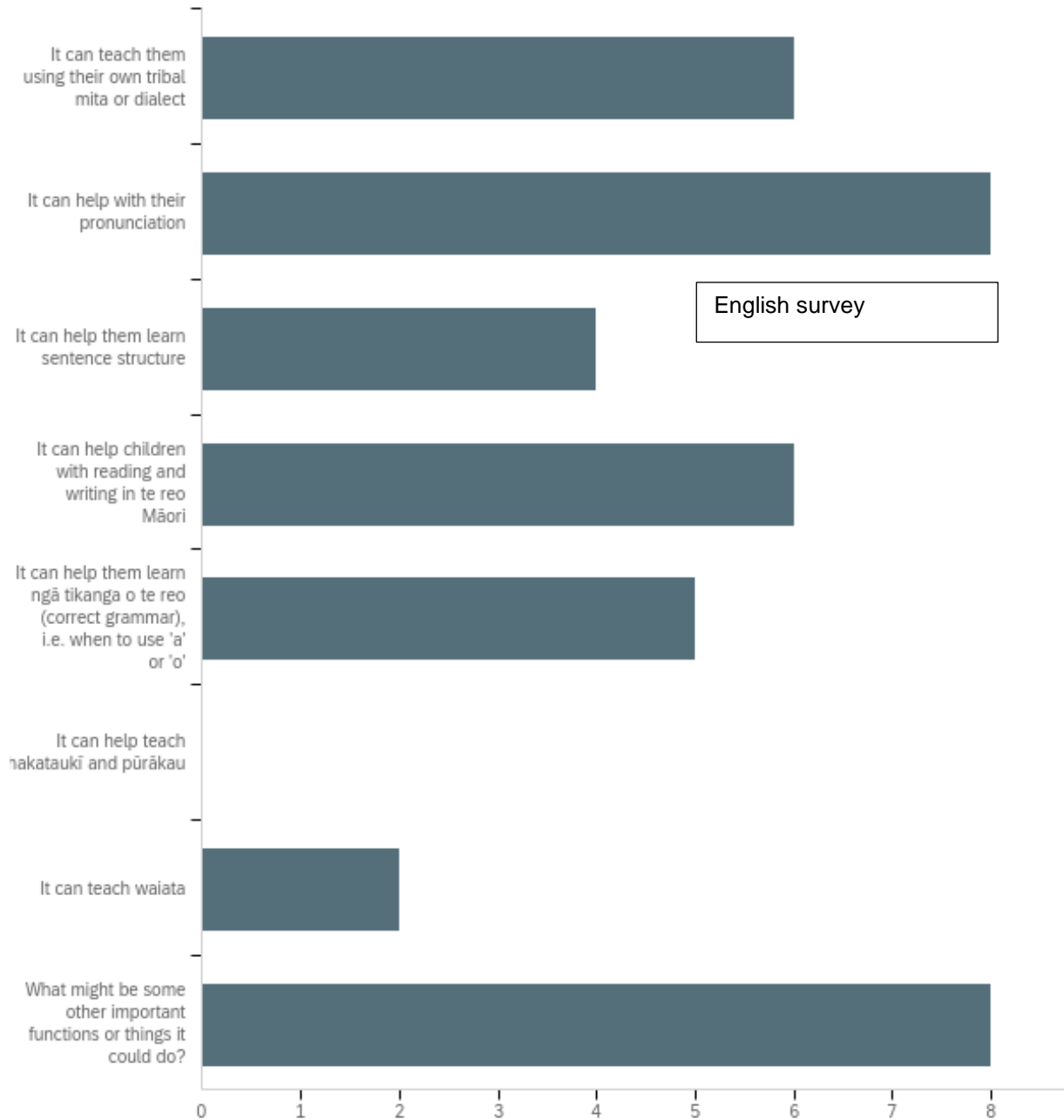
- To encourage the revitalisation of te reo within our whānau
- We have tried engaging in online classes, but it has been difficult to retain the reo to use everyday
- Only way to develop the language, increase kupu (word/s, vocabulary), increase patai (to question), increase fun, increase kōrero (to speak) through communication, increase whānau bonding
- It's inevitable for children to use devices in this day and age so an educative reo tool would be great!
- Any resource that can teach tamariki can also teach other members in the whanau too
- If there becomes a tool more accessible to further teach our native kupu Māori, the question is why not? (the adult) would also be learning alongside my child therefore we're both able to get a better understanding for my native tongue.
- Would be good support about what I'm not confident in.

- however, my tamariki are grown into college

7. If an interactive digital tool could be designed using voice recognition software to teach young children the Māori language, what would you like to see included as some of the key design features?

There were two responses to this question on the te reo Māori survey:

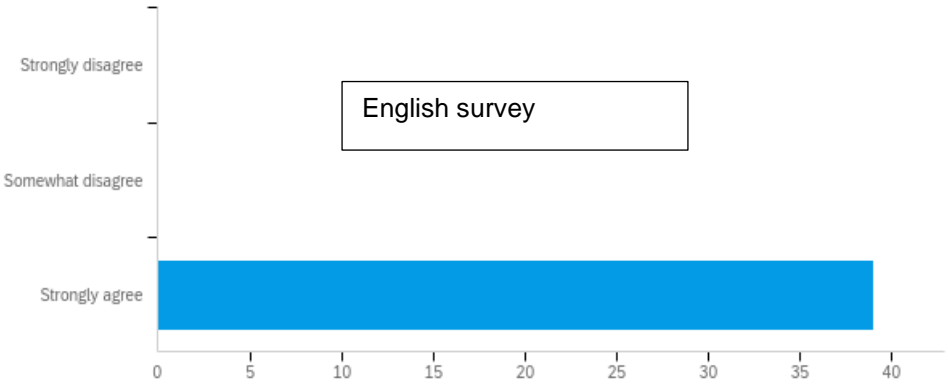
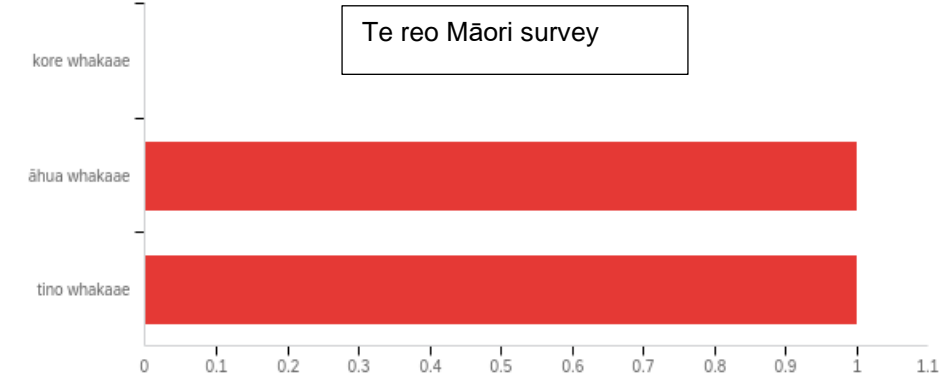
- Ae, ki te katoa o runga ake. Auahi ana! (yes, to all of the above!)
- Wetewete reo, whakatakotoranga kupu, me te tuhi kupu anoo hoki (pronunciation, grammar, and literacy).



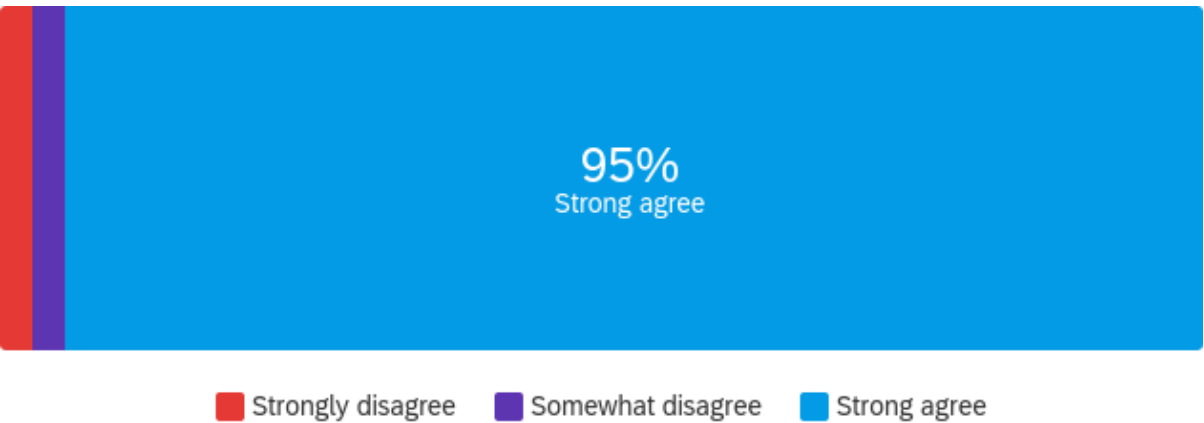
What else could it do?

- it would be amazing if it could possibly ask questions out loud for tamariki to reply verbally and it checks their pronunciation and grammar?
- If I could multi-select: Help pronunciation, help reading and writing, help with grammar, help teach whakataukī (proverbs) and pūrākau (myths, legends) and waiata (song)




8. When tamariki learn te reo Māori at home, it encourages the whole whānau to learn.



9. Speaking te reo Māori is important for Māori children to be confident in their cultural identity and this helps them succeed at school and in life.



100%
tino whakaae

 kahore whakaae  āhua whakaae  tino whakaae

Findings and Discussion

Parent respondents were 100% in agreement that tamariki should have access to te reo Māori in the early years (birth – 5 years). This indicates a strong desire by Māori parents to support te reo Māori language development and learning at home.

The parents who responded to the survey in te reo Māori indicated that they spoke te reo Māori most of the time, compared with only 5% of parents who responded to the survey in English. Approximately 80% of parents responding the English survey said they used te reo Māori sometimes, with over 10% indicating they spoke no te reo Māori at all and a very small percentage (3%) indicating that they spoke te reo Māori all the time. These figures suggest that the majority of Māori parents (>80%) use some te reo Māori language at home.

Interestingly, the parents who responded to the te reo Māori survey, did not identify an inability to speak te reo Māori as a barrier to their tamariki learning the Māori language, whereas this was seen as the biggest barrier for parents responding to the English survey. Approximately 25% of parents who responded to both the te reo Māori and English surveys identified the inability to access Kōhanga Reo and other early learning options as a barrier, followed by an inability to access appropriate te reo Māori resources for their tamariki. Parents identified other barriers including parents being able to speak Māori but choosing not to, and whakamā, which is often translated as being shy or ashamed. These two identified factors could be related; i.e., feelings of shame or shyness might be the reason for parents who can speak te reo Māori choosing not to do so. Another identified barrier was being the only speaker within a whānau who can speak te reo Māori, resulting in no one to communicate with. The long wait-lists at kōhanga and puna reo was identified as a barrier and also financial constraints to accessing these options, especially for whānau who live in rural or geographically remote areas.

All parents indicated that they would welcome the use of a digital tool or assistive technology to facilitate te reo Māori language acquisition for their tamariki and also for themselves. Some parent respondents gave their reasons why, which included, building confidence, encouraging te reo Māori language revitalisation within their whānau and supporting parents to learn alongside their tamariki. They also suggested, the device could increase te reo Māori acquisition through asking questions, having fun, encouraging kōrero and communication; it could also, enhance whānau bonding and support every day use of te reo Māori, unlike online options do.

Most parents responding to either the English or te reo Māori survey identified the ability for the device to support with pronunciation, learning dialects, reading, writing, sentence structure and grammar as the most important features in the design. There were several suggestions of what other design features could be useful, including, asking questions out loud to tamariki and

checking the pronunciation and grammar of their responses. One respondent suggested the ability to select what areas of language learning they needed help with, i.e., learning pūrākau or waiata; reading, grammar or pronunciation.

All parents answering the English survey agreed that tamariki learning te reo Māori supports the whole whānau to learn the language.

All parents responding to the Māori survey agreed that speaking te reo Māori supports tamariki to be confident in their cultural identity and this also supports success for tamariki in school and in life. Whereas, 95% of parents responding to the English survey agreed with this statement, 2.5% of parents somewhat agreed and 2.5% of parents disagreed with this statement.

Limitations

The sample size of 43 valid responses limits the generalisation of these findings. The limited number of responses is likely due to the survey being conducted during a lengthy Covid-lockdown period which limited greater socialisation of the survey to eligible parents. The limited number of responses on the te reo Māori survey may also relate to the small population of parents with the degree of fluency to understand and respond to the te reo Māori survey.

Conclusion

Studies in the UK and US into the receptiveness of parents to the use of digital technologies in their children's learning, show parents are not as receptive in certain contexts, whereas studies in India, China and Brazil, have found parents tend to be less skeptical (Perucica, 2022). The present study indicates that Māori parents may be more open and less skeptical about utilising digital assistive technologies in their children's language learning. However, given the limited sample size, generalisations should not be made without further research in this area.

Currently, only one Māori adult in six can currently speak te reo Māori fluently (Te Kupenga, 2020); and the Māori language is listed as vulnerable by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) (King et al., 2018). It is therefore encouraging that all parents who undertook this survey thought their tamariki should have access to their language in the early years of development. Furthermore, all parents indicated that they would welcome the use of assistive digital technology to support te reo Māori language acquisition with their tamariki.

The findings of this study, even within the limitations of the sample size, allows for cautious optimism that Māori parents would be open to the use of digital technology with their tamariki to support te reo Māori acquisition. We can also be cautiously optimistic that assistive technologies could provide, not only a useful future resource for this purpose but may reduce

some of the barriers to speaking and learning the Māori language for tamariki, their parents and wider whānau.

References

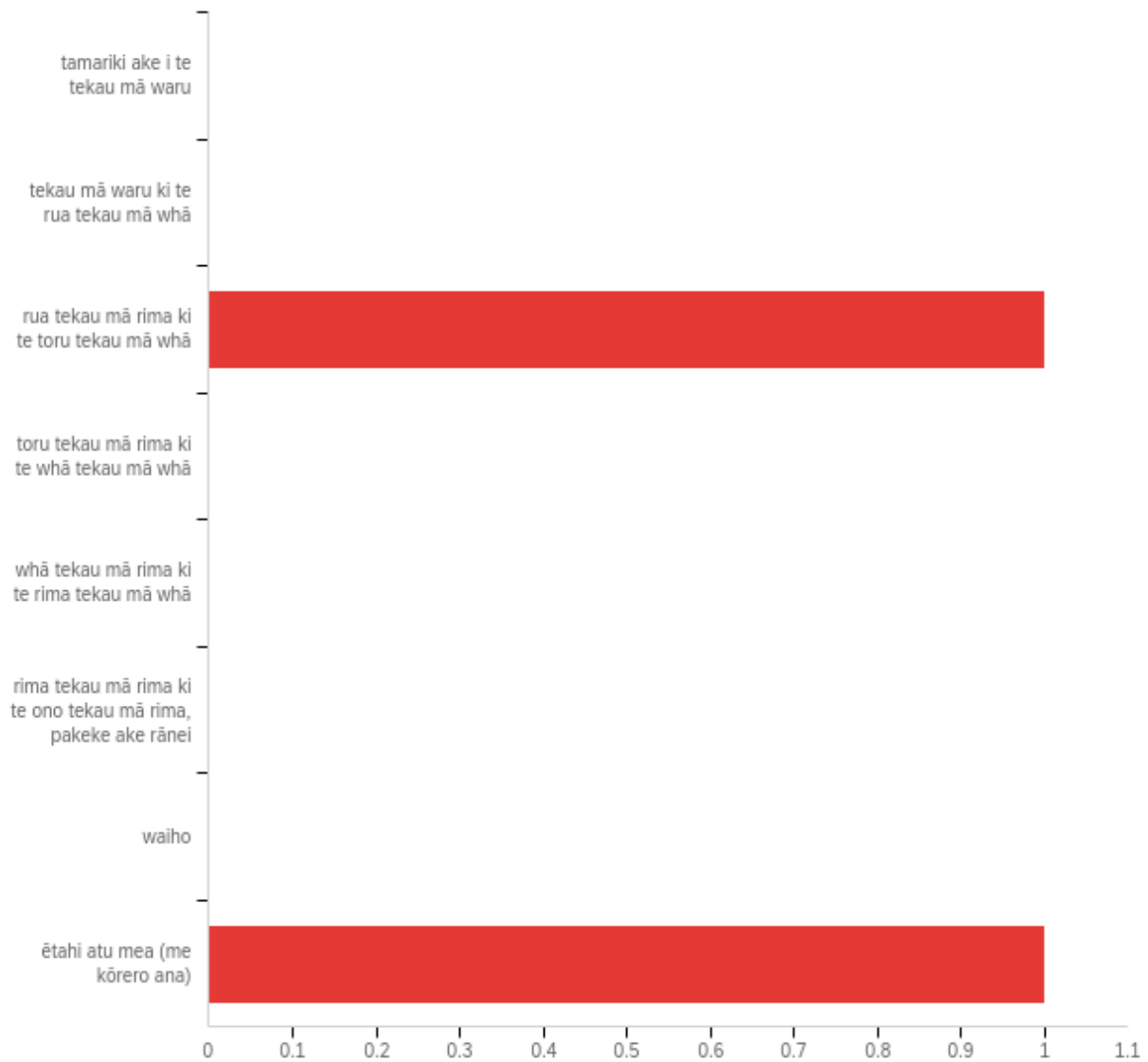
King, J., Rehg, K., & Campbell, L. (2018). *Māori: Revitalization of an endangered language*. Oxford University Press

Perucica, N. (2022). Our children are growing up with AI. Here's what you need to know. *World Economic Forum*. Accessed online 23/2/2022. www.weforum.org/agenda/2022/01/artificial-intelligence-children-technology/

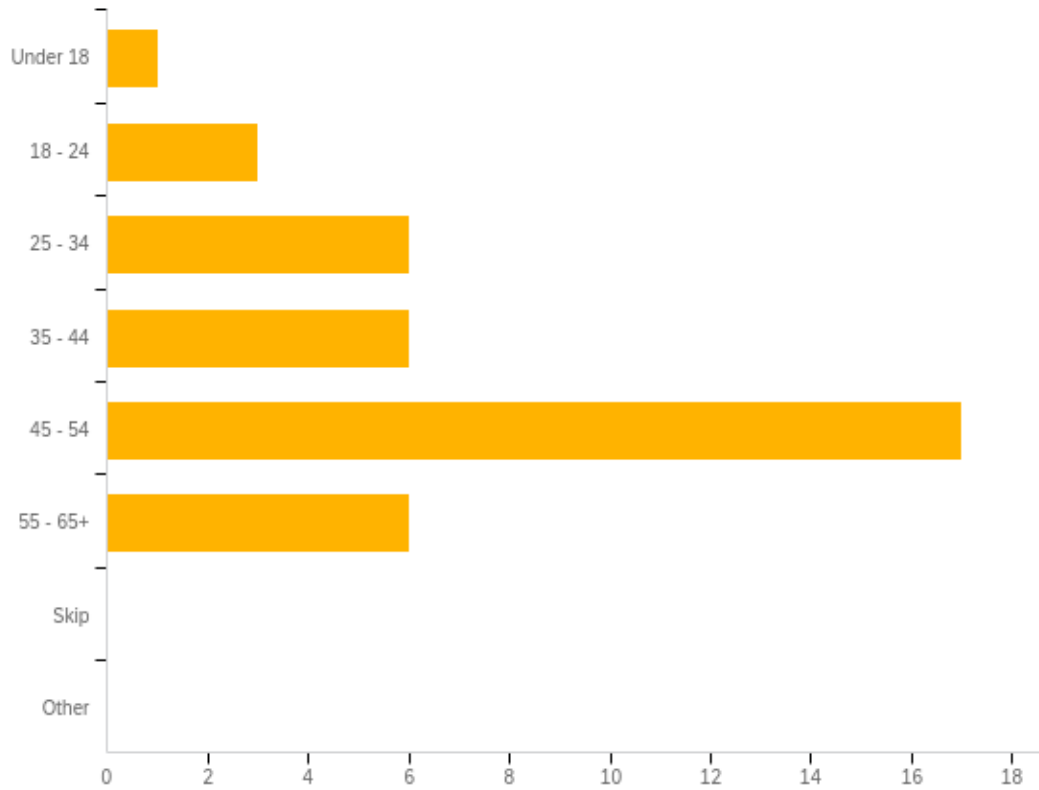
Te Kupenga, Stats NZ. (2020). Te Kupenga: 2018 (final) – Te Reo Māori. Published online, last updated, 9/11/2020. www.stats.govt.nz/information-releases/te-kupenga-2018-final-english

Appendix 1

Age of respondents:

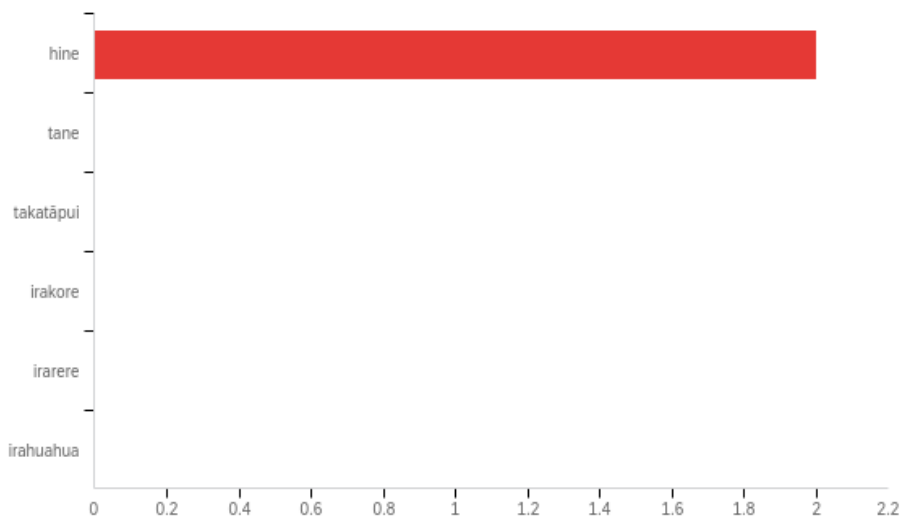


Of the two respondents who completed the te reo Māori survey, one indicated that they were between 25-34 years old, the other indicated that they were outside of the age groups represented in the survey.



Most respondents who completed the English survey, were between 45-54 years old.

Gender:

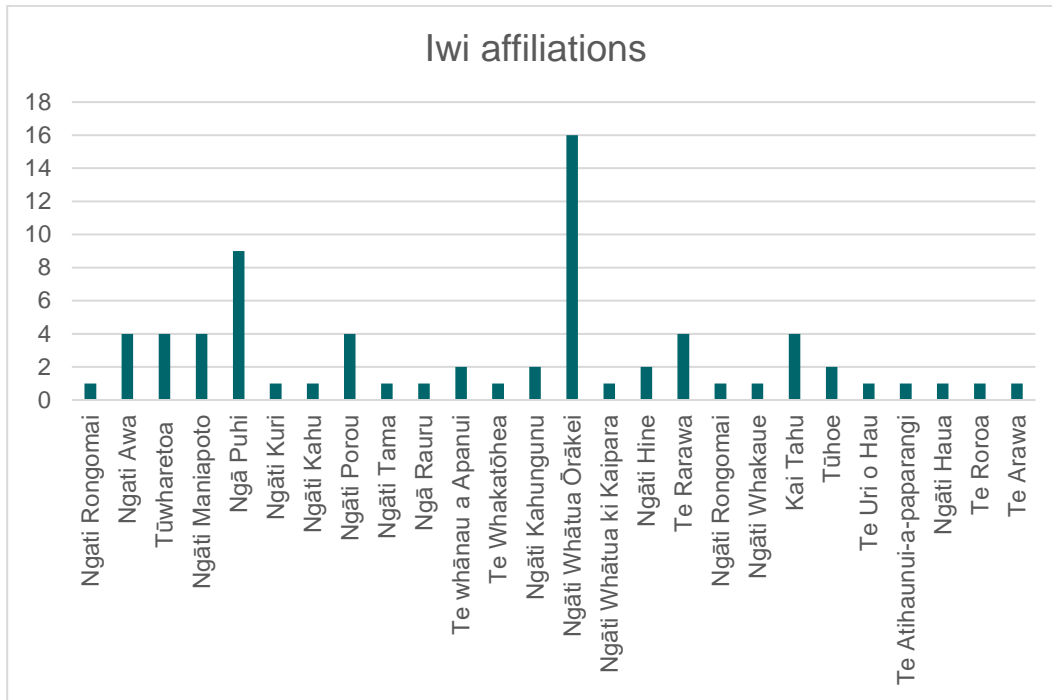


Both respondents that completed the te reo Māori survey were wāhine (women).

39 respondents of the English survey were female and 4 were male

wahinetoa
wāhine
female
wahine

Iwi affiliations:



Most respondents' whakapapa (genealogy) to Ngāti Whātua Ōrākei (16), followed by those who whakapapa to Ngā Puhi (9), which is indicative of the location of their respective tribal regions, Auckland, and Northland.