Submission by

to the

EDUCATION AND WORKFORCE COMMITTEE

on the

EDUCATION (STRENGTHENING SECOND LANGUAGE LEARNING IN PRIMARY AND INTERMEDIATE SCHOOLS) AMENDMENT BILL

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CONTACT:
Graeme Muller
Chief Executive
NZTech
E: graeme.muller@nztech.org.nz
M: 021 0252 0767

NZTech wishes to appear before the Select Committee

INTRODUCTION

The New Zealand Technology Industry Association (NZTech) welcomes the opportunity to make a submission to the Education and Workforce Committee on the Education (Strengthening Second Language Learning in Primary and Intermediate Schools) Amendment Bill.

BACKGROUND

NZTech is the peak body for New Zealand's technology ecosystem and is a not-for-profit membership-based organisation.

Members are drawn from the private and public sector where we connect technology ecosystems, organisations and people to create a coordinated national voice for technology. NZTech also supports the New Zealand Tech Alliance, which comprises not-for-profit organisations representing 20 technology associations across the public and private sectors. Collectively, this represents over 1,500 organisations employing more than 100,000 New Zealanders.

Our unifying goal is to stimulate an environment whereby technology contributes to the economic, social, cultural and environmental wellbeing of New Zealanders.

DISCUSSION

NZTech supports the Bill with amendment.

A 2020 study published by the University of Washington shows an aptitude for learning languages is a strong predictor for an ability to learn Coding, as opposed to just mathematics or numeracy[1]. Recent neuroscientific research by MIT and Tufts University[2] found that while Coding did not appear to activate the language-related part of the brain, nor did it appear to rely upon parts of the brain used for mathematics and logic. Coding approaches and languages could be an important bridge to reinvigorating STEM by instead offering an opportunity to teach it as a language.

The need for a new approach can be read by secondary school participation in digital technology standards. Only 24 percent are female, 11 percent Māori and 6 percent Pasifika[3]. Even here, secondary technology participation has fallen over the past five years, by a compound annual growth rate (CAGR) of -2 percent[4]. This is despite unprecedented labour demand.

In its most basic sense, coding is translating logical actions into a language that a computer will understand. NZTech believes adding Coding Languages as a priority language at the primary level and teaching it as a language, enables the Government to highlight the importance of digital technology for New Zealand's economic and social future prosperity. By intersecting with

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[1] Chantel Prat, Tara M. Madhyastha, Malayka J. Mottarella and Chu-Hsuan Kuo (2 March 2020). *Relating Natural Language Aptitude to Individual Differences in Learning Programming Languages,* Scientific Reports, 10:3817 https://doi.org/10.1038/s41598-020-60661-8.

[2] Anna A Ivanova, Shashank Srikant, Yotaro Sueoka, Hope H Kean, Riva Dhamala, Una-May O'Reilly, Marina U Bers and Evelina Fedorenko (15 December 2020). *Comprehension of computer code relies primarily on domain-general executive brain regions,* eLife, 906. DOI: https://doi.org/10.7554/eLife.58906.

[3] Graeme Muller and Sarah Hindle (2021). Digital Skills for our Digital Future (Draft Embargoed to 28 January 2021), NZTech, Auckland, p.11

[4] Ibid, p.27.

technology in the New Zealand Curriculum, it may enable greater participation by young women, Māori and Pasifika and contributes to a more inclusive and creative society.

RECOMENDATION

1. Coding Languages to be specified alongside Te Reo and New Zealand Sign Language as one of 10-National Priority Languages.

SUGGESTED AMENDMENTS

1. **General Policy Statement**
   Amend the third sentence of the first paragraph to read:
   "Under the bill regulations will be made to identify at least 10 priority languages, including Coding as another language, which will be set following nationwide consultation with communities."

2. **New section 78AA inserted (Regulations prescribing national priority language)**
   Amend subclause 3(a) to read:
   "specify a minimum of 10 national priority languages, which must include Te Reo Māori, New Zealand Sign Language and Coding as another language."