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The coding versus language debate

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Introduction

In 2016 in the United States, a bill was proposed that would enable high schools in the state of Florida to use courses in computer coding to cover their mandatory language teaching requirements. Two years of study of computer coding would allow students to enter Florida's state universities and earn university scholarships, which at the time required at least two years of language study (Postal, 2016). The Florida bill was passed by the Senate but was ultimately rejected by the House of Representatives. However, attempts to pass similar legislation to substitute computer coding for languages continue. As of early 2017, Florida was attempting to pass new legislation, and similar bills have been introduced in the states of Oklahoma, Kentucky, New Mexico, Texas, and Washington (Berdan, 2014). In Texas legislation has already been put into place that allows high school students "to take computer science to fulfill foreign language credits if the student has already taken a foreign language class and performed poorly in it" (Tate, 2016).

Alongside the debates at the legislative level, public debates have also played out through mainstream media channels, which have given voice to various stakeholders from both sides (Babu, 2016; Berdan, 2014; Galvin, 2016). Legislators argue that coding is the language of the 21st century, that it is universal, and that it is faster to learn than a natural language. Others use the poor performance and low interest of students in language learning as justification for a redirection of focus and funding (Galvin, 2016). Many educators have opposed the idea, arguing that language education "serves a humanistic purposes and exposes people to a global perspective, which is something valuable in college, the workplace and beyond" (Babu, 2016, para. 6). The ACTFL was instrumental in lobbying against the Florida bill, with a representative arguing that "if we want to prepare our students at every level to be ready for the challenges of a multi-cultural, multi-lingual, and global society, we need to lead with world languages" (Tate, 2016, para. 12).

While the original Florida bill was proposed by a former technology executive, there has been considerable opposition to the move from within the technology sector. The owner of one technology company that is in desperate need of people with coding knowledge, doesn't believe that replacing languages for coding is appropriate. As an advocate for both coding and languages, he stated that "our goal is to allow our child to experience all facets of life. Some they will not excel in, but not giving them the opportunity is the failure" (Tate, 2016). Igor Perisic, Vice President of Engineering at LinkedIn, also believes the movement is misguided:

“To equate foreign languages with programming languages reduces learning a foreign language to the mere acquisition of a set of tokens or words that are semantically and syntactically glued together. It fundamentally ignores the societal, cultural and historical aspects of human language” (Ruzvidzo, 2016, para. 6).

The developments in the United States have been followed closely by stakeholders in Australia, where a general apathy toward learning other languages and a push for increased learning of technology-related skills have sparked concerns that a similar phenomenon will be seen here (Olewitz, 2015; Special Broadcasting Service, 2016). The concerns are well founded when you note some of the news headlines that have been seen in recent years. An online ABC news report asks, “Want your kids to learn another language? Teach them code” (Goschnick, 2015). The Australian Financial Review suggests that “It’s time to teach our school kids a new language: Code” (Shiffman, 2015). The technology news website, *Techly*, posed the question, “Are you better off learning to code, or learning to speak a new language?” (Olewitz, 2015). While this article concludes that both have advantages, the headline forces the reader to make a choice between one and the other before they even start to read the article.

What’s happening in Australia and Queensland?

The pitting of coding against languages is an obvious concern for language advocates and educators in Australia, who for decades have had to contend with a public apathy toward language learning and constant justification of their position within schools (Liddicoat, Scarino, Curnow, Kohler, Scrimgeour, & Morgan, 2007; Lo Bianco & Slaughter, 2009; Mason & Poyatos Matas, 2016). This position becomes even more difficult to justify when considering the strong national focus in Australia on the so-called STEM subjects: Science, technology, engineering, and mathematics (Australian Government, 2015). The low position of languages in the curriculum hierarchy (Robinson & Aronica, 2009) means that languages are in a precarious position when the inevitable references to the ‘crowded curriculum’ begin.

Both languages and coding bring unique skills, knowledge, and opportunities to students living in an increasingly globalized and mobile world with rapid technological advancements. The rationale and aims of both have been outlined in their respective curriculums, the Australian Curriculum: Languages, and the Australian Curriculum: Technologies (of which coding is one part). Both curriculum frameworks underwent several years of revisions and consultation with key stakeholders and experts before final endorsement. Thus, states and (state) schools are obliged to provide students with opportunities to learn both languages and coding. This is why the ‘languages or coding’ narrative that has begun in Australia is so concerning.

One specific concern is the potential abuse of the term ‘language’. Whether or not coding systems constitute a language is a large part of the debate in the United States. The ambiguities and

complexities of human language mean that there are various definitions of the term which can be used to suit one agenda or another. Some definitions may give credence to a school's decision to replace a natural language with a coding language, subverting their obligations to provide opportunities for students to learn a language and coding. Interestingly, the position of Code.org, a major US non-profit organisation whose very aim is to increase the teaching and learning of coding in schools, is that coding is not a language. They believe that aligning the two under the one umbrella could undermine student access to coding (Code.org, 2014).

Australian policies are clear about the role that languages should play in the overall education of students. The Melbourne Declaration on Educational Goals for Young Australians (Ministerial Council on Education, Employment, Training and Youth Affairs, 2008), and the Australian Curriculum: Languages (Australian Curriculum, Assessment and Reporting Authority, 2015) lay out aims and rationale, which provide de facto definitions of language. In the Queensland context, the only definition of relevance is that set by the Department of Education and Training (DET). In a personal communication with DET (August 14, 2017), the question was asked if there was any scope that would allow for language teaching requirements to be fulfilled by using coding as a language. Their response was:

“Principals, in consultation with their school community, decide on the language(s) taught; selecting from the fourteen languages and two frameworks in the Australian Curriculum: Languages.

The Australian Curriculum: Digital Technologies is a subject that has been developed to teach understandings and skills of digital technologies. The Digital Technologies subject provides students with opportunities to develop the skill of coding and the associated concepts.

The Australian Curriculum: Languages is framed around specific languages and does not include a framework for students to learn coding as a language.

Queensland schools are currently required to provide allocated time to the teaching of Languages and by 2020 to be implementing both the Australian Curriculum: Languages and the Australian Curriculum: Digital Technologies”

It is clear from the response from DET, that there is no scope for coding to be defined as a language, and that schools are obliged to provide teaching and learning of both.

However, the reality is that this has happened in at least one case in Queensland. In 2016, on the sixth page of a regional Queensland newspaper in a short article with the headline ‘Schools grooming our future’ (Walker, 2016), it was revealed that “instead of a foreign

language, the students at Maryborough State High School have the opportunity to learn a much more universal language – coding” (para. 1). The article details the school’s new Coding and Stem Academy, where Year 7 students in the honours class will have “the opportunity to study Coding as a state-wide first in the place of Language Other Than English” (para. 6). The Coding and Stem Academy is an innovation that is the first of its kind in the state, which has led the way in STEM study in schools, by making coding and robotics compulsory for all compulsory school age students, in a plan to be fully implemented by 2020 (Sadler, 2015). In personal communication with a member of the school faculty (August 4, 2017), it was clarified that only the one cohort of Year 7 students did not have access to language education due to timetable constraints, and that future pathways were being considered to hopefully accommodate a student’s desire to study both Japanese and coding.

While this is only one case, a clear precedent has been set in the United States which is being covered in Australian media. This raises concerns that this may become more frequent in Australia as the Technologies curriculum is rolled out across the country in the coming years. This is a particular concern in Queensland, where in 2009 the mandatory status of language education was quietly changed by Education Queensland without the endorsement of the State Government (Chilcott, 2010). While its status was reinstated upon backlash, two years later a report found that 75 schools were not meeting mandatory language teaching requirements (Chilcott, 2011). This is evidence that there is not a strong political will to ensure that schools are meeting their obligations to provide language education to their students.

There is no debate

For the moment, the substitution of languages for coding does not appear to have become a particular problem in practice in Australia. However, public discussions have started to mimic that which is being heard in the United States. Already, language and coding are being framed as mutually exclusive, and the public are being asked which side to take. It is imperative that supporters of language education do not engage in this debate nor propel this narrative.

If we engage in a competition with coding, our ability to win lays in our ability to better market our discipline. Coding is the cool new kid on the block that is backed by a strong political drive and a multi-billion dollar technology industry whose influence is embedded in our everyday lives. Languages, on the other hand, has been having a crisis in public relations for many years as it struggles to achieve widespread success in the teaching and learning of languages beyond the compulsory years (Liddicoat, 2010). In a country that is “staunchly monolingual” (Hyland, 2008), the cards are not stacked in our favour. Therefore, it is not wise to engage in debates about which will be more relevant for our students’ futures, about which will give our students the better jobs, about whether coding is a language and thus could replace Indonesian or French, about which can fit into

the curriculum at the expense of the other, or any other debates which attempt to place one discipline in a position of superiority over the other.

For language educators, the simple fact is that both languages and coding have been affirmed in the educational landscape in Australia, within two negotiated and endorsed curricula. Both learning opportunities have been deemed important in the education of the well-rounded citizens of the future, each with different contributions to make to the social and cognitive development of our students. There is no debate. Education departments and schools must provide opportunities for both. Supporters of language education need not be defensive or apologetic for their position.

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Addendum

The case of Maryborough State High School is also of personal interest to me. It is where I spent my five years of secondary education. It's where I learnt German and Japanese for three lessons a week for five years, taught by dedicated and passionate teachers. It's the one that hosted Japanese

students every year, several of whom I keep in touch with today – 20 years later. It's the one where teachers spent their holidays taking me and a group of students to Japan, a place where I currently live and work. Coding wasn't part of the educational landscape at the time, but if it had been I would have liked the opportunity to learn both, and that's what I want for my children too.

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Bio

Shannon Mason worked as a Japanese teachers in Queensland schools for ten years before recently moving to Japan, where she currently teaches in the Faculty of International Studies at the University of Nagasaki. Her interests include language pedagogy, language education policy, and language teacher issues.