



Media release: Research projects to improve outcomes for learners share \$1.3 million in funding

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The Teaching and Learning Research Initiative (TLRI) has awarded over \$1.3 million in funding to eight projects, which are expected to improve outcomes for learners.

All the projects are based on partnerships between researchers and educators, but diverge from there to span the curriculum across the early childhood, school, and tertiary sectors. The eight projects are summarised below, and include goal setting for schools, effective mathematics teaching in Māori medium settings, and the potential of online citizen science.

The TLRI has been operating since 2003, and this allocation means a total of 145 projects have been funded. The fund has an annual budget of \$1.5 million, available for projects that may run for 1 to 3 years.

The [TLRI](#) is funded by the New Zealand government and administered by the [New Zealand Council for Educational Research](#) | Rangahau Mātauranga o Aotearoa.

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Strengthening belonging and identity of refugee and immigrant children through early childhood education

Investigator: Linda Mitchell

Partnership: University of Waikato; Carol White Family Centre; Crawshaw Kindergarten; Hillcrest Kindergarten; Iqra Educare; Waikato Kindergarten Association

This project will explore the role of early childhood education and teaching and learning strategies in supporting a sense of belonging and identity for refugee and immigrant children and families in Aotearoa New Zealand. It will develop a package of resources for use in multicultural early childhood education centres.

Funding: \$199,993 over 2 years

Māku anō e hanga, i toku nei whare - I will build my own house

Investigators: Ngarewa Hawera and Leeana Herewini

Partnership: University of Waikato; Te Wharekura o Rākaumanga

This project looks at the largely unexplored area of how to teach pāngarau (mathematics) effectively in modern learning environments, especially in Māori Medium settings. The goal is to strengthen ākonga (student) engagement and achievement in pāngarau.

Funding: \$129,991 over 2 years

Supporting teachers and learners of programming by understanding feedback on syntax, semantics and style

Investigators: Andrew Luxton-Reilly and Ewan Tempero

Partnership: University of Auckland; ACG Sunderland College; Pakuranga College

Effective teaching requires providing high quality feedback. The feedback needed for computer programming can be classified as being: for syntax (how to write valid code), for semantics (how the code behaves), or for style (how the code looks). Each category has different challenges in how to provide high quality feedback. This research project aims to improve the use of feedback by students and teachers of programming in the context of the NZ Digital Technologies Curriculum.

Funding: \$200,000 over 2 years

The apiscope buzz: A mixed methods action research project investigating STEM to STEAM using the apiscope as a tool for differentiated teaching and learning

Investigators: Tracy Riley and Anne Noble

Partnership: Massey University; Newlands Intermediate School; Avalon Intermediate School

This project places an observational beehive at the centre of an exploration of differentiated teaching and learning. The investigators want to understand science, technology, engineering and mathematics (STEM) learning through observation-led teaching and expressed through the creative arts. The project will create professional learning and support for teachers so they can plan differentiated STEM to Science, Technology, Engineering, Arts, and Mathematics (STEAM) opportunities for their students.

Funding: \$129,523 over 2 years

Leading effective goal-setting to improve school outcomes

Investigators: Frauke Meyer and Linda Bendikson

Partnership: University of Auckland; Bucklands Beach Primary; Mangere College; Auckland Girls' Grammar

This research collaboration with one primary school and two secondary schools investigates effective goal-setting by school leaders. The project aims to understand how principals can lead more effective goal-setting practices and improve equity in student outcomes.

Funding: \$200,000 over 2 years



Citizen scientists in the classroom: Investigating the role of Online Citizen Science in primary school science education

Investigators: Markus Luczak-Roesch and Dayle Anderson

Partnership: Victoria University of Wellington; Koraunui School; Muritai School; Hampton Hill School; South Wellington Intermediate School

This project investigates the potential of online citizen science (OCS) projects to contribute to the improvement of science education of primary-age children. It will map OCS projects to the NZ science education curriculum. The project will deliver a practitioner's guide for using OCS in the classroom and provide insights into how teachers can best engage children in OCS to improve their science capabilities.

Funding: \$99,978 over 1 year

Pathways to the past: Fostering effective pedagogies for Māori and Pasifika students in the historical disciplines

Investigators: Nancy November and 'Ema Wolfgramm-Foliaki

Partnership: University of Auckland

This project addresses the low enrolment and pass rates of Māori and Pasifika students in history-based courses at university. The project will employ Kaupapa Māori and Pasifika methodology to better understand Māori and Pasifika students' characteristic ways of knowing and learning in the historical disciplines. It will develop pedagogies to foster historical literacies and improve educational outcomes for Māori and Pasifika students in these disciplines.

Funding: \$200,000 over 2 years

Investigating the impact of non-routine problem solving on creativity, engagement and intuition of STEM tertiary students

Investigators: Sergiy Klymchuk and Mike Thomas

Partnership: Auckland University of Technology (AUT); University of Auckland; Whitireia New Zealand; Manukau Institute of Technology

This project investigates what happens when science, technology, engineering, mathematics (STEM) students are asked to solve non-routine problems. A non-routine problem is one where there is not a ready-made method that can be applied to solve it. The investigators anticipate that wide implementation of this learning enhancement would improve the engagement of STEM students, as well as their employability since innovative and creative thinking is a workplace requirement.

Funding: \$198,205 over 2 years