

# MASTER OF CONTEMPORARY EDUCATION

Symposium Proceedings

# 2022



**THE MIND LAB<sup>®</sup>**



Master of  
Contemporary  
Education

## C8F SYMPOSIUM 29<sup>TH</sup> APRIL 2022

PLACE-BASED LEARNING, A HOLISTIC APPROACH TO TEACHING AND LEARNING

**Mark Armstrong**

PERSONALISED LEARNING FRAMEWORK FOR ILE CLASSROOMS

**Helen Wackrow**

PERSONALISED LEARNING THROUGH AN ONLINE PROFESSIONAL/ COLLABORATIVE  
LEARNING PLATFORM

**Sonia Johnston**

PROJECT-BASED AND SOCIAL-EMOTIONAL LEARNING WITH PRIMARY SCHOOL AGED  
LEARNERS

**David Martin**

DEVELOPING TEACHER CAPABILITIES TO DIFFERENTIATE LEARNING USING  
CONTEMPORARY TEACHING PRACTICES

**Jessica Prior**

TŪRANGAWAEWAE: PLACE-BASED EDUCATION THAT ENGAGES LEARNERS

**Karen Paku**

LEAVING NO STUDENT BEHIND, LESSON DESIGN THROUGH UNIVERSAL DESIGN FOR  
LEARNING

**Keren Wright**

TE RIPO: WHĀNAU AS AUTHORS OF DIGITAL STORIES

Violet Aydon-Pou

PLACE-BASED EDUCATION TO CONNECT TO COMMUNITY

Wynita Katene

USING COLLABORATIVE, SOCIAL-EMOTIONAL LEARNING TO INCREASE SELF-REGULATORY  
SKILLS

Caroline Leader



Master of  
Contemporary  
Education

## Executive Summary C8F

# Place-Based Learning, a holistic approach to teaching and learning

---

Mark Armstrong

Place-Based Learning (PBL) is a pedagogical approach to teaching and learning that has the potential to empower students (ākonga), teachers (kaiako) and families (whānau) to develop positive mindsets about metacognition. Metacognition creates learning pathways that can improve academic knowledge and emotionally responsive behaviours that will support their learning in future experiences of their schooling (Oakley, 2018). PBL particularly seeks to increase agency by establishing holistic and inclusive approaches to learning (Brown, 2008). This PBL approach connects with research from Piaget's theory that ākonga are more successful and empowered when learning is purposeful and interactive.

PBL improves ākonga's academic achievement, and well-being (hauora), using a holistic approach to leadership, teaching and learning practices (Sobel, & Smith, 2014). Ākonga engagement in learning has been impacted negatively by 2020 Auckland covid restrictions and lockdowns. Introducing PBL to kaiako gained traction as they were open to transforming and or supporting their conventional teaching practices using a PBL inquiry-led approach. Unfortunately, the 2021 Auckland restrictions and lockdowns impacted this project as access to kaiako and ākonga was limited to just a few short lessons a week within a tiny bubble. The original focus on introducing PBL to kaiako pivoted to avoid producing dead-end outcomes and squandered resources. Re-establishing relationships with ākonga and their whānau became the focus during the 2021 Auckland restrictions, by using the PBL holistic approach of including culturally responsive perspectives that are diverse in language, social class, ethnicity, religion and sexual orientation (Bishop, 2003). In doing so, the aim of using PBL would open opportunities for whānau and ākonga to feel comfortable using their cultural knowledge to support and enhance the learning experiences.

Refocusing on whānau participation was the most practical option as PBL provided opportunities to increase ākonga agency to empower them to create their own inquiries and share them with whānau. A Place-Based Learning Resource (PBLR) was created and introduced to support this study and any teaching staff or whānau who were interested in developing their own PBL program. This resource provided various resources such as integrated curriculum plans (Kaitiaki Kids/ Tūrangawaewae) links to PBL websites (MOE Pūtātara), journal articles, activities and other learning frameworks (MOE Tātaiako) that can be accessed throughout the PBLR website. The PBLR is an inquiry-led approach that empowers ākonga to develop their own learning pathways to solve real-life and meaningful problems using digital tools (eportfolios/ text messaging) to enhance their learning experiences and create opportunities to develop their cultural, creative, and critical thinking skills. Sharing their inquiries using eportfolios created an opportunity to redefine their learning experiences as well as an opportunity to share learning with whānau. A cyclical action research methodology was used in this project. Data



collected during the cycles determined the effectiveness of PBL by analysing the impact it had on progressing ākongas engagement, achievement and hauora. The research participants consisted of three Māori, four Samoan and three Cook Island ākonga and their whānau from a low decile kura in West Auckland. The limited number of whānau does not indicate a lack of engagement in their ākongas learning as there were other non-covid barriers such as connectivity, device access, work commitments, cultural norms, and apprehensiveness toward education that impacted the study. Assessing and reflecting on ākongas knowledge and their inquiries using the PBLR assessment framework created the first action research cycle - Walk and Talk Experience. This experience was the end product of ākonga inquiry learning. It incorporated a simple questionnaire that identified aspects of the Pūtātara Tūrangawaewae framework in their PBL journey.

Themes throughout this study indicated that ākonga had established or were developing an awareness of Tātaiako principles (tangata whenuatanga, ako, manaakitanga, wānanga, whanaugatanga) and how it supported their understanding of the kura's learning muscles. Using a holistic approach allows learners to use their cultural perspectives and knowledge and increases their engagement and hauora (Brown, 2008). Throughout the project, the majority of ākonga indicated that they were developing or had established better learning habits which improved their hauora. Cycle two collected data on whānau participation and attitudes towards PBL using e-portfolios and text messaging. Case studies by the Ministry of Education (MOE) identified that when whānau participate in their tamariki learning, it fosters better learning outcomes (MOE, 2020). Quantitative data were collected pre and post from the PBL program, which analysed the responses from whānau with the number of 'likes' or 'comments' using e-portfolios and text messaging. Qualitative data was collected if whānau commented on ākongas work. All data was compiled which identified text messaging as the most used form of communication. This study highlighted text messaging as being a successful tool as it is a low-cost and easy form of technology for whānau to use. Texting became a very successful tool for communicating and sharing ākonga eportfolio links with whānau.

Overall, the impact of PBL within this project was restricted by Auckland's covid lockdown and traffic light settings. However, PBL's inclusive but unconventional approach to teaching and learning gave this research fluidity to integrate a variety of strategies which is common in most PBL programs. Introducing tātaiako principles increased participants' knowledge of how a holistic approach can make PBL more meaningful and fun, especially when adapted to the PBL Putatara framework. I intend to enhance my PBLR by recrafting the Putatara framework and embedding the tātaiako principles into my practices to support the needs of my community. In doing so, I will be able to improve my self-awareness and PBL knowledge to become a more cultural, creative, critical kaiako and citizen.

## Reference List

- Bishop, R. (2003) Changing Power Relations in Education: Kaupapa Maori messages for 'mainstream' education in Aotearoa/New Zealand [1], *Comparative Education*, 39:2, 221-238, DOI: 10.1080/03050060302555
- Brown, M. (2008). Outdoor education: Opportunities provided by a place-based approach. *New Zealand Journal of Outdoor Education*, 2(3), 7-25.6.
- Ministry of Education (2020). Learning Support Action Plan. Published by the Ministry of Education,
- Oakley, G. (2018). *Mobile Technologies in Children's Language and Literacy: Innovative Pedagogy in Preschool and Primary Education*. United Kingdom: Emerald Publishing Limited.
- Sobel, D., Smith, G. A. (2014). *Place- and Community-Based Education in Schools*. Ukraine: Taylor & Francis.



## Executive Summary C8F

# Personalised Learning Framework for ILE Classrooms

---

Helen Wackrow

This research project intended to identify and explore the possible barriers to personalisation of learning in the New Zealand Curriculum and within mainstream classrooms. The first goal of this project was to develop expertise in personalised learning theory and methodology that supports student agency and engagement. Secondly the research would test resources with students set up as a one day school with a unique timetable. Finally, the researcher was to draft an online professional development (hereafter abbreviated to PD) resource in personalised learning theory that could be facilitated or used for self-paced learning.

Three beneficiaries of this research were identified. Firstly, the stakeholders of ākonga and kaiako. Colleagues would benefit from professional development in the areas of personalised learning, project-based learning and student agency. Students would be supported to become agentic and to advocate for their own needs within a learning space (Bolstad et al., 2012). All learners would collaborate, share, mentor, demonstrate, learn with their peers, access experts and connect with other learners universally (Bray & McClaskey, 2012; Deed et al., 2014). In addition, the researcher would consolidate current knowledge of project-based learning, student agency and personalised learning through trialling planning, tracking and reflection resources.

The first iteration of this research planned for the creation of both facilitation resources and a visible learning platform for students to access flipped learning and share their projects. Students and staff would provide ongoing feedback to improve the resources. Subsequent iterations would see the practice grow to larger groups and later operate within the ILE spaces using a co-teacher model of facilitation. However, Covid-19 lockdowns in the Auckland area meant that establishing collaborative relationships with kaiako, whānau and ākonga were severely limited or not possible during much of the 2021 school year. This pushed the project to pivot away from student-centred research and towards a resource that supported professional development for teachers.

The final resource developed was an online platform to support professional learning groups with implementing personalised learning with students that had a range of abilities and independence. Because this could not be facilitated with students, the research and data collection focused on teacher feedback. This approach was twofold. A Google Survey was used to establish prior knowledge about the personalised learning theory present in the teaching community. This survey pinpointed successful strategies as well as barriers previously experienced by teachers. It was also used to identify biases and misconceptions. The second set of data collection used the Delphi Method of gaining expert critique to review the resource (Cohen et al., 2007; Niederberger & Spranger, 2020). This was achieved via a Strength, Weakness, Opportunities, Threats (SWOT) analysis survey.

When analysing the qualitative data within these surveys, the 'reflexive thematic analysis' approach from Virginia Braun and Victoria Clarke was used. The method is designed to be applied to data generated from people's views and perceptions (Braun & Clarke, 2022). Along with the inductive qualitative analysis, the reflective thematic approach used was primarily a latent lens, where themes were formed by grouping data into common threads (Braun & Clarke, 2022). This was used to reveal potential underlying influences, assumptions or biases.



SWOT analysis examined the internal and external factors that potentially impacted the success of the project. It provided data that was used to analyse the current state of the project and devise a strategy to improve the outcomes of future iterations.

Of the respondents, 52.2% had successfully attempted personalised learning previously and 8.7% had attempted personalised learning unsuccessfully in the past. 43.2% of respondents defined personalised learning as being 'tailored to individual needs'. When sharing professional development experiences in Personalised Learning, 7 out of 23 respondents were self directed, 6 out of 23 respondents had PD led by colleagues and 7 out of 23 respondents had never had PD in personalised learning.

The SWOT data showed that educators are aware of the need for divergent thinking and innovative practice in classrooms to better meet the needs of diverse learners. Sustainability is a key concern for teachers - via resourcing, disseminating leadership, adaptation, professional development and mentoring. Respondents identifying resourcing as a concern are not only referring to physical resourcing, but also that of people and time.

Another trend that emerged through the thematic analysis process was the impact, both positive and negative, that support from colleagues and leadership had on participants' success with personalised learning theory.

Respondents felt the student dispositions that had the greatest positive impact from personalised learning were: students experiencing success, engagement and participation, critical thinking, curiosity and innovation. Survey respondents reflected on current literature and research on perceived and actual barriers to personalised learning.

A conclusion is that professional learning communities (both formal and informal) and self-directed learning opportunities are significant contributors to the ongoing development of teacher practice. The data also illustrates clear gaps between goals for innovative practice set by the Ministry of Education, and the lack of adequate resourcing and professional growth provided by Ministry sources to embed goals in mainstream schools.

## References

- Bolstad, R., Gilbert, J., McDowall, S., Bull, A., Boyd, S., & Hipkins, R. (2012). *Supporting Future-Orientated Learning and Teaching (Report to the Ministry of Education)*. NZCER.
- Braun, V., & Clarke, V. (2022). *Thematic Analysis*. Thematicanalysis.net; University of Auckland. <https://www.thematicanalysis.net/>
- Bray, B., & McClaskey, K. (2012). *Personalization vs Differentiation vs Individualization*. <http://www.my-ecoach.com/online/resources/925/PersonalizationvsDifferentiationvsIndividualization.pdf>
- Cohen, L., Manion, L., & Morrison, K. (2007). Action Research. In *Research Methods in Education 6th Edition* (pp. 297-313). Routledge. <https://gtu.ge/Agro-Lib/RESEARCH%20METHOD%20COHEN%20ok.pdf>
- Deed, C., Cox, P., Dorman, J., Edwards, D., Farrelly, C., Keeffe, M., Lovejoy, V., Mow, L., Sellings, P., Prain, V., Waldrip, B., & Yager, Z. (2014). Personalised learning in the open classroom: The mutuality of teacher and student agency. *International Journal of Pedagogies and Learning*, 9(1), 66-75. <https://doi.org/10.1080/18334105.2014.11082020>
- Niederberger, M., & Spranger, J. (2020). Delphi Technique in Health Sciences: A Map. *Frontiers in Public Health*, 8. <https://doi.org/10.3389/fpubh.2020.00457>
- Piggot-Irvine, E. (Ed.). (2009). *Action Research in Practice*. New Zealand Council for Educational Research (NZCER) Press.



## Executive Summary C8F

# Personalised learning through an online professional/ collaborative learning platform

---

Sonia Johnston

The purpose of this project was to provide professional development for staff in Personalised Learning and develop an online professional learning platform that would support professional and collaborative learning. The researcher grappled with the dilemma that many leaders contend with when advocating for and providing professional development for Personalised Learning, i.e. "How do teachers know what that means from a learners perspective, if they may not have experienced Personalised Learning as a learner themselves?" The researcher, a school principal, recognised the parallels between teacher practice, and their engagement with professional learning, i.e. it was still teacher and leader centred, and not learner (including adult learner for PLD) centred. A number of factors added to the complexity of the situation, i.e. the Covid 19 lockdowns increasing the demand for online communication and learning, and the staff identifying the potential for such learning, as well as the need for digital fluency for themselves and their learners. School leaders also saw the benefits of online professional learning for their adult learners (key teachers engaging in Digital Fluency PLD, Teacher Aides provided with online learning modules), and how this might be further developed to support the work of their Professional Learning Community and their connected Communities of Practice.

The project involved setting up a professional learning site, using google sites, drawing on the principles of ePortfolios as a repository for online learning resources to support professional learning, but also a forum that can promote or generate ongoing learning (Basken, 2008). Basken suggests that it is this generating [of learning] that is often overlooked. Key teachers, involved in the recent Digital Fluency Intensive (DFI) PLD, collaborated with the researcher, to suggest and refine both the technical aspects for site development, as well as provide insights from managing their own class learning sites. An action research methodology was selected, facilitating a participatory approach to the design and implementation. Qualitative data, in the form of note-taking from talanoa sessions, feedback from surveys, notes and surveys from interactive self-guided learning sessions, and interviews, were gathered and analysed from the participants (school leaders, DFIs, select Support Staff- Teacher Aides).

A thematic analysis method (Braun & Clarke) was used to analyse the data and provided the flexibility to be able to sift through the multiple sources of information (as cited in Maguire & Delahunt, 2017). Key themes emerged, i.e. teacher's preference for learning, i.e. in the community; the aspects to consider when designing for professional learning, i.e. the social, emotional and cultural factors, as well as recognising the value of drawing on principles and frameworks to support collaborative learning processes. Participants' understanding of Personalised Learning echoed what was found in the literature, i.e. it's not clearly defined (Digital Promise Global, 2017), and that perhaps their own familiar experiences trying to personalise learning through differentiated or individualised approaches, need to be reconsidered through the lens (and complexities) of 21<sup>st</sup>-century learning (Leadbeater, 2005; Blaschke, 2012). This was captured in one of the themes- 'What kind of learning/





learners are we talking about here?'. This question also summed up the other key aspects in the literature that informed this project, i.e. heutagogy, collaboration and contemporary leadership, and related to what Blaschke (2012) suggests when talking about such learning, i.e. that the pedagogical and andragogical approaches won't quite cut it for equipping learners to thrive in the workplace. A more self-directed, self-determined- or in other words, heutagogical approach is needed. Hannon claims that these approaches are not for the faint hearted (as cited in Leadbeater, 2005)- this mahi is complex! More than pockets of personalised learning practice, of individual teachers, or even schools, it's going to require a systems level shift. The findings in this project affirms the role that collaboration plays in nurturing a culture of inquiry within the PLCs and CoPs that could contribute to bringing about such approaches, and encourages the researcher in the contemporary leadership approaches that might need to be better understood and practised in supporting collaborative learning.

The project, undertaken in the midst of the Covid 19 pandemic, with lengthy lockdowns and tight restrictions, impact the project's implementation, and although a source of frustration for the researcher, it only highlighted even more so, the contemporary approaches needed for leading and learning during such times. There are lessons however, that can be shared with other educators, particularly those who are considering the similar circumstances they might too be facing, i.e. how to sustain the professional learning of their staff, while also prioritising their wellbeing. This project reflected the connections between collaboration and personalised learning and identified the importance of making time and creating safe spaces for learners to 'make sense' of what was happening for them personally, in order to then draw out the learning inherent in those experiences. As one participant reflected - knowing that you are doing work that is meaningful contributes to your well-being; and the researcher also concluded that sense-making, or 'bringing meaning to one's work' equals meaningful work.

The researcher reflects on the use of the professional learning site, recognising its role in supporting professional learning, including online interactions, that provide an alternative when there are limitations on meeting in person; but realised during the project that the site was more of a symbolic gesture about empowering others to step into their own leadership for learning, individually and collectively. The researcher comments: "Build a field site and the people will come", and it is hoped that when they do, they too will be co-investors with this mahi (Leadbeater, 2005) and the site will continue to be *their* work in progress.

## References

- Basken, P. (2008). [\*Electronic portfolios may answer calls for more accountability\*](#). The Chronicle of Higher Education
- Blaschke, L. M. (2012). *Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning*. The International Review of Research in
- Open and Distributed Learning Digital Global Promise. (2017). *Research and the Promise of Personalized Learning*. Retrieved from: <https://files.eric.ed.gov/fulltext/ED614327.pdf>
- Leadbeater, C. (2005). *The Shape of Things to Come personalised learning through collaboration*. Retrieved from: <http://charlesleadbeater.net/wp-content/uploads/2005/01/The-shape-of-things-to-come.pdf>
- Maguire, M. & Delahunt, B. (2017). *Doing a Thematic Analysis: A Practical, Step-by Step Guide for Learning and Teaching Scholars*. All Ireland Journal of Higher Education. Vol. 9. No. 3 <https://ojs.aishe.org/index.php/aishe-j/article/view/335>



## Executive Summary C8F

# Project-Based and Social-Emotional Learning with Primary School Aged Learners

---

David Martin

This project aimed to lift the academic outcomes of students at the primary school level through the use of project-based learning (PBL) in combination with the explicit teaching of social-emotional (SE) skills. Literature informed the creation of a framework that supported students with PBL. PBL is often claimed to provide a platform to motivate them to learn and to develop curriculum knowledge. In addition, the positive effect of PBL on students makes it a vehicle to support the development of SE skills (Ningsih et al., 2021). The knowledge gained from this project is expected to help teachers develop learning experiences that support engagement in learning and the development of the skills required to thrive in education.

Observations highlighted that learners were disengaged. A factor contributing to this was a lack of SE skills to manage task focussed behaviours, this was often amplified if the learner had experienced trauma. Another factor is that they may have a negative mindset towards learning as if they have to achieve academically. Thirdly, they may not have connected to the learning material if it is irrelevant or does not interest them.

This research project used an action research approach, which explores an issue, gathers information, analyses that information, and then sets a plan in action (Burns, 2009). Once the literature had been collected, deciphered and sorted into themes, an implementation plan was developed. Part of this plan was to create resources that would support students and teachers in using PBL, which connected to the local hapu's narrative. Also, a survey was created to collect information about how nga ākonga viewed their SE skills.

This project ran in a Year 6 and 7 class in an urban, low decile school in Taranaki and focused on mathematics. Due to COVID lockdowns and timetable constraints, it was conducted over nine weeks consisting of three iterations, each lasting three weeks. Over the first iteration, the main focus was on supporting students in understanding how to use PBL resources. This iteration's projects and problems were short and focused on one curriculum area. Over the second and third iterations, problems and projects grew in length and complexity of curriculum coverage. The first iteration focused on SE skills to develop collaboration and to understand the process. The final two iterations concentrated on creating positive self-efficacy.

Qualitative and quantitative data were collected throughout the project. A survey was used to gather student voices on their SE skills. In addition, self and peer evaluations helped give insights into the explicit teaching of SE skills. Observational notes were used to gain further insights into the impact that PBL and SE skills had on nga ākonga. Academic data were collected before, during, and after the project. Initial data was gathered from a mathematical Progressive Achievement Test (PAT) and an in-class test to find the academic areas students needed to focus on. Academic data was collected throughout the project by analysing students' work. They completed another PAT after the research project to evaluate this research project's impact on their academic achievement. Then, qualitative data were grouped into themes and extracted to analyse it as quantitative data. Tables and graphs



enabled data to be analysed to see the research project's impact on the participants. Analysing the data in three key areas (PBL, SE, and academic) enabled a clear link back to the purpose of this research project and whether it achieved the desired outcome.

The literature around PBL and SE skills suggests that these pedagogical education approaches will positively impact students' academic achievement. One of the few authors to write about the positive impact of the combination of PBL and SE on nga ākonga is Kaechele (2021). He proposed that the combination of PBL and SE together strengthened each other and helped students academically and socially. English and Kitsantas (2013) suggest that more research on teaching both PBL and SE in combination is needed, especially regarding self-regulation and PBL. An important area that literature on these two topics does not cover is the importance of teaching in the moment. However, Hattie & Yates (2014) view this as essential to learning.

The research supports literature on PBL and SE, as the project had a positive outcome regarding the students' view of their own SE skills and academic outcomes. Continuing this research project over a year would enable further data collection that may provide more depth and a clearer picture of PBL and SE's impact on academic outcomes. It would also allow students to understand PBL better and apply curriculum outcomes to projects, enabling them to demonstrate their knowledge.

Due to limited literature focusing on the combination of PBL and SE and how both impact nga ākonga outcomes, this research helps support what literature exists while helping to close a gap in the literature. In addition, this research project gives a New Zealand primary school focus and provides an example of how PBL can be used to deliver the local curriculum.

## Reference List

- Burns, A. (2009). Action research. In J. Heigham & R. Croker (Eds.), *Qualitative research in applied linguistics: A practical introduction* (pp 112–134). Springer.  
[https://doi.org/10.1057/9780230239517\\_6](https://doi.org/10.1057/9780230239517_6)
- English, M. C., & Kitsantas, A. (2013). Supporting Student Self-Regulated Learning in Problem- and Project-Based Learning. *Interdisciplinary Journal of Problem-Based Learning*, 7(2).  
<https://doi.org/10.7771/1541-5015.1339>
- Hattie, J. A., & Yates, G. C. (2014). Using feedback to promote learning. *Applying science of learning in education: Infusing psychological science into the curriculum*, pp. 45–58.
- Magana, S. (2018, April 6). *Disruptive Classroom Technology and the T3 Framework* [Video]. YouTube.  
<https://www.youtube.com/watch?v=dex9AClsY28>
- Ningsih, T., Kurniawan, H., & Rahayu, S. (2021). Life Skill Education Development Through Project-Based Learning in Distance Learning at MI Al-Falah UM. *İlköğretim Online*, 20(2).  
<https://doi.org/10.17051/ilkonline.2021.02.10>



Master of  
Contemporary  
Education

## Executive Summary C8F

# Developing teacher capabilities to differentiate learning using contemporary teaching practices

---

Jessica Prior

The purpose of this practice-based change project was to provide teachers with Professional Learning and Development (PLD) that develops their capabilities to differentiate learning to meet the needs of gifted and twice-exceptional learners. As well as teaching gifted learners, my role at The New Zealand Centre for Gifted Education (NZCGE) includes offering support to the feeder schools where these learners usually attend school. This project was initiated as part of the needs voiced to me by these classroom teachers who were wanting to support the gifted learners when they are not attending the one-day school. Furthermore, many gifted learners are unable to attend MindPlus, a one-day school for gifted learners; and these learners are not always catered for within their classroom environment.

It is a sad reality that gifted education, and strategies to meet the needs of gifted learners, is not a topic covered in pre-service teacher training (Sahin, 2021; Rowan & Townend, 2016). Research in New Zealand schools, confirms that many teachers feel unable to confidently recognise and appropriately provide for gifted learners (Ng, 2018). Using this evidence, my project has focused on supporting classroom teachers to facilitate learning using contemporary practices which can be used with all learners, including gifted to meet their needs. Teachers worked through PLD modules to develop their capabilities through a Knowledge, Attitude, Skills and Aspirations (KASA) framework. Four modules of learning include: (1) An introduction to gifted and 2E learners, (2) Heutagogy, (3) Phenomenon-Based Learning and (4) Digital integration and Gamified learning. These modules combine to provide both theory and practical application of contemporary practices in order to meet the needs of gifted learners with an approach that can be used with the whole class or as enrichment activities.

My overarching goal for this project was for teachers to gain an understanding of why it is important to use differentiated teaching practices that support the development of gifted and twice-exceptional learners through contemporary teaching approaches which can also be used with all learners in the class. The delivered products from this project are four self-paced PLD modules which will be available for teachers who are looking to develop their capabilities to differentiate learning for gifted and 2E learners. These modules include three contemporary teaching approaches that they can implement in their classroom that will support all learners, including those with gifted and talented learning attributes. The second deliverable of the project is a collaborative digital resource folder for participating teachers to use, add and adapt resources that support these contemporary teaching approaches. The PLD modules and digital resource folder also provide an ongoing resource for NZCGE consulting services which other schools may wish to use and develop for their own context.

This project was implemented through online, self-paced professional learning and development (PLD) slides which all followed a similar format. Each module was sent to participating teachers which included a google slide and a reflection form which followed the same format. There was a balance of information presented through videos, topic descriptions, images, links for further information, and teaching resources as well as an opening karakia and whakatauki and culturally responsive approaches for each slide set. Once teachers had completed their reading, watching and learning, they completed



a brief quiz and reflection. These quizzes were used as both a reinforcement of learning as well as for data collection purposes. This style of professional development follows characteristics of a Heutagogical approach to learning (Hase, 2009; Blaschke, 2012), demonstrating to participants ways in which they too may implement this approach with their learners. Utilising a self-determined approach, teachers developed capabilities with a focus on ensuring elements of each module would support a shift in their attitude, knowledge, skills and also aspirations. A total of five primary school teachers completed these modules and associated data collection which included one-on-one interviews, a google form with 6-point linear scale pre and post questionnaire and the written reflection (artefact of learning) from each module. A second iteration of this project will be done without one-on-one interviews in order to reach a broader scope of educators.

To conclude, the goals of this project were achieved and this PLD proved to be a successful model with participants to develop their capabilities. As demonstrated across all data collected, participants positively shifted their initial attitudes towards each of these topics, gained new knowledge and understanding, obtained skills and strategies to implement these approaches and showed aspirations for further use and development of these ideas. A significant insight and finding from this project is that it has provided a future-focused perspective on gifted education. New knowledge has been generated which includes my own personal learning and the capability development for participants in this practice-based change project. The unique combination of each of the four modules of learning is easily accessible, requires a minimal time commitment and can have an immediate impact to improve the professional practice of educators.

This PLD will remain available to all participants and any other educators who wish to improve their understanding of gifted education and contemporary practices. It has been valuable for educators to take up this opportunity of their own accord. However, sharing these findings with educational leaders and Principals could lead to greater uptake of participation and support to implement these approaches in the classroom. Many of the participants shared informally the benefits with other teachers and a desire to have leadership on board with these practices. By allowing other stakeholders such as local iwi, kahui ako (communities of learning) and also others in the NZCGE organisation to utilise this PLD, it could inform as many educators as possible in order to reach and cater to the gifted learners across New Zealand.

## References

- Blaschke, L. M. (2012). Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning. *The International Review of Research in Open and Distributed Learning*, 13(1), 56-71.
- Hase, S. (2009). Heutagogy and e-learning in the workplace: Some challenges and opportunities. *Impact: journal of applied research in workplace e-learning*, 1(1), 43-52.
- Ng, S. (2018). Gifted students with learning difficulties negotiating identity and capability in New Zealand Schools: A theory of conceptualising difference. (Unpublished Doctoral Thesis). University of Auckland, Auckland, New Zealand.
- Rowan, L., & Townend, G. (2016). Early career teachers' beliefs about their preparedness to teach: Implications for the professional development of teachers working with gifted and twice-exceptional students. *Cogent Education*, 3(1)<http://dx.doi.org/10.1080/2331186X.2016.1242458>
- Sahin, Ç. Ç. (2021). A Meta-Synthesis of Teacher Training Studies in the Focus of Gifted Education. *International Journal of Progressive Education*, 17(1), 97-110.



## Executive Summary C8F

# Tūrangawaewae: Place-Based Education that Engages Learners

---

Karen Paku

Wairoa students are disengaging from education. From a report sent out by the Ministry of Education, 41.6% of students attend school regularly. Education needs to adapt to the changing circumstances and create a solution that will engage these learners and motivate them to return to school. This project aimed to provide educators with an explanation of how place-based education can provide students with authentic, relevant learning experiences that increase students' engagement. It discusses the importance of identifying the mana of your students and explains what happens when allowing students choice and encouraging them to direct their learning. It aimed to encourage students to take action and become active citizens that strengthen the connection between the people and the whenua.

In this project, I took the time to survey the literature: the land and the people. I went to wānanga, which was about the importance of riparian planting, water quality monitoring and how to catch, gut and cook eels. This helped me form relationships with whānau and local experts who could be beneficial to the completion of the project.

This project was based on an Action Research approach. It had two iterative cycles. The first one was called Tūrangawaewae - A Place to Stand. The goal was to build students' identities and encourage students to connect with a place where they felt confident. Two speakers were invited in to share local stories and waiata. We also had someone show us the steps of creating and editing videos. Students created videos about their Tūrangawaewae, and some students showed their videos at the Wairoa District Film Festival.

The second iterative cycle aimed to reconnect the students with the land by using the land as a teacher. The students took the time to evaluate the issues and worked collaboratively - discussing ideas and sharing possible solutions that would solve the problems present. The team contacted local experts, designed solutions and took action, testing their ideas and making improvements to our school maara kai. They created compost bays, resurrected buried gardens, created worm farms and attempted to build a chicken coop that the chickens couldn't escape from.

A survey was completed at the beginning and the end of the project. This survey gathered students' opinions and highlighted factors that increased engagement in learning. The analysed data, personal observations, and artefacts proved that place-based education increases student learning engagement. Allowing learners to make their own choices, discuss their ideas, contact experts, and plan their solutions gives the student a sense of ownership in their learning, which boosts engagement.

The data showed that Place-Based Education could boost confidence. When the participants were asked what strengths they bring to the classroom, there was an increase in strengths written down. This could have been because this was the second time they had filled out the form, and they knew what questions were going to be asked, so they were prepared. More participants felt that teamwork and building were skills that were strengths they had acquired. I know from the data that place-based education boosts engagement. My next research topic would be to prove this statement from David Sobel (2014) that place-based education can improve learning- Test scores increase, attendance surges, language arts assessments show richer self-expression, speaking skills gain a community cause, maths engagement flourishes, and students do science and not just study science.

What happened after the project finished?



The School hired a dedicated person for two days a week to lead the work in the garden. Students still go down to the garden. The Enviro Schools' manager was contacted and has made connections with the Gardens manager, and she is working one day a week in the garden.

I have developed a place-based learning project that includes digital storytelling and Te Ara Whakamana, or Mana Enhancement. We will be working from a place of strength so that the students will be directing their learning, and I will just become the guide on the side, helping them identify their goals and map their learning pathways. I am also looking at how we can create mixed reality lessons so students can explore their Tūrangawaewae digitally. I will be leading this programme in Term 2, 2022. I will be working with students across the Kahui Ako in Wairoa.

The Wayfinding Leadership approach resonated with me. I am currently looking at incorporating the Māori principles of whakawhānau, kaitiakitanga, manaakitanga and wairuatanga into my programme. I also think it is vital that educators and the community continue to make links to Mātauranga and look at ways to share that traditional ecological knowledge and Tikanga with others. To be a Wayfinding leader, you must be brave to traverse the unknown and be willing to lift the veil bringing this knowledge into the light.

Place-based education is a teaching approach that creates authentic, meaningful and engaging learning. It is an immersive learning experience that connects learning to communities and the world around us.

#### References:

- Gruenewald, D. A. (2003). *The best of both worlds: A critical pedagogy of place*. *Educational researcher*, 32(4), 3-12.
- Olson, A., & Peterson, R. L. (2015). *Student engagement*. Lincoln: University of Nebraska-Lincoln.
- Sobel, D. (2014). Place-Based Education: Connecting Classrooms and Communities. Closing the Achievement Gap: The SEER Report. *NAMTA Journal*, 39(1), 61-78.



Master of  
Contemporary  
Education

## Executive Summary C8F

# Leaving no student behind, lesson design through Universal Design for Learning

---

Keren Wright

This project aims to improve teachers' understanding of Universal Design for Learning to support teacher planning so equitable access and inclusion in learning can occur for all learners.

Courey et al. (2012) tell us that when teachers use the Universal Design for Learning framework to guide "the proactive design of classroom instruction and learning opportunities to make them effective for a broad range of learners" (p. 36).

Through online and face-to-face professional development sessions, participants developed knowledge and capabilities in designing learning that removes barriers so learning becomes authentic and relevant.

The following goals helped keep the project on track. I analysed relevant literature to understand how Universal Design for Learning can support lesson design to become inclusive and accessible to learners' needs. By developing and implementing this collaborative professional development project, participants could understand how Universal Design for Learning allows learner access and inclusion when designing learning. Data was collected through questionnaires and group discussions to assess collaboration and construction of new knowledge using the Microsoft Partners in Learning 21st Century rubric and resources developed and shared in an accessible teacher drive.

The benefit of this project was to develop teachers' capabilities and knowledge to address the underlying symptom of students' lack of motivation and engagement that originates from learning not being designed to address all students learning needs.

The argument was to enhance student engagement through teachers planning lessons that remove barriers allowing access and inclusion. Developing understanding using the Universal Design for Learning framework helps develop teachers' capabilities by building collaborative lessons designed to address the lack of student motivation. Participants ranged in age, gender, ethnicity, teaching experience, responsibilities, and subject areas. The project covered 20 school weeks using professional development time and self-paced online learning. I developed a professional development programme using online self-paced and face-to-face learning containing slides, readings, and collaborative activities.

This project's methodology was Action Research. McNiff (2016) says, "action research is about improving practice through improving learning and articulating the reasons and potential significance of the research" (p. 2). Administering an online survey of closed and open questions allowed me to understand participants' initial knowledge of Universal Design for Learning. Evaluating discussions and interviews throughout the project enabled me to see how it created new knowledge and capabilities.





Group interviews using open questions helped me see if and how the professional development project changed participants' thinking in designing learning to better meet all students' needs. I also gained insight into how this project could become sustainable in my context.

Data analysis informed the next cycle by identifying themes based on inclusion, learning barriers and knowledge of the Universal Design for Learning framework. To enable change, participants shared ideas and experiences in what DeMatthews (2014) terms "collective action" (p. 183). I observed participants engaging in collaborative learning during face-to-face sessions. Exposing them to different perspectives, which is supported by DeMatthews (2014), "brings about greater change than the sum of individual efforts in isolation" (p. 184). Therefore, this project has successfully met its aim to design learning collaboratively. All participants developed their knowledge and capabilities of Universal Design for Learning to enable access and inclusion.

CAST (2010) suggest that when teachers design learning using the Universal Design for Learning framework, all learners gain knowledge and skills for learning. Designing learning that eliminates barriers to the curriculum and keeping achievement expectations high for all learners allows access and inclusion in learning.

Most literature reviewed focused on special education and tertiary levels with little on the secondary context. However, participants could still adapt the research to their context throughout the project. The final findings agreed with the purpose of this project as the participants understood the benefits and developed capabilities from collaborative planning using the Universal Design for Learning framework.

Data from participants shows the project is beneficial in developing understanding and capabilities of using Universal Design for Learning to design inclusive learning. Allowing access to the curriculum enables learning to move away from what Bolstad et al. (2012) term the "one-size-fits-all model" (p. 17) so that learning meets the needs as it is relevant and accessible.

This project is the pilot for designing learning that uses Universal Design for Learning to develop the broader staff's knowledge and capabilities. The next step is to work collaboratively with the school's external professional development provider to implement the deliverables through the school's professional learning groups. This makes the project sustainable by ensuring all teachers examine their learning design using the Universal Design for Learning framework. They can develop their understanding and capabilities through collaborative planning to engage all students by removing barriers and allowing equitable access to the curriculum so that learning is inclusive.

Evidence that the project was successful was observing participants working collaboratively across all departments as silos soon reformed into a community of learning to support, challenge, and engage participants to see themselves as leaders of learning.

The timing of the project in the second half of the academic year is a limitation as the participants could not trial their learning in their classrooms due to time constraints and workload. The relationship I have with the participants could also affect the reliability of measuring how effective the shift in teachers' capabilities is to design learning using the Universal Design for Learning framework that is equitable and inclusive.

## References

Bolstad, R., Gilbert, J., McDowall, S., Bull, A., Hipkins, R., & Boyd, S. (2012). *Supporting future-oriented learning and teaching: A New Zealand perspective*.

- CAST. (2010). *UDL questions and answers*. Retrieved from <http://www.cast.org/research/faq/index.html>
- Courey, S. J., Tappe, P., Siker, J., & LePage, P. (2012). *Teacher Education and Special. Teacher Education and Special Education*, 36(1), 7-27.
- DeMatthews, D. E. (2014). Principal and teacher collaboration: An exploration of distributed Leadership in professional learning communities. *International Journal of Educational Leadership and Management*, 2(2), 176-206.
- McNiff, J. (2016). *You and your action research project*. Routledge.



## Executive Summary C8F

# Te ripo: whānau as authors of digital stories

---

### Violet Aydon-Pou

Guided by the literature regarding partnership and the engagement of whānau in education, the role of whānau/parents tends to be viewed as passive and their position, at best, junior level partners in the home/school relationship. So, it really does beg the question: how can whānau be more *active* partners in their children's learning journey?

I saw an opportunity to make this the focus of my 'change in practice' project, that is: offering whānau an active, purposeful role to play in their child's education by way of becoming digital authors of early reader stories, stories they could read to, read with, and share read with their child. What better way to help beginning readers and writers than to provide stories all about them; and what better way to empower whānau to be active, purposeful partners in their child's education than to ignite their storytelling voices.

This project was implemented in the home setting, with whānau who send their children to a kura-a-lwi, located within the tribal boundaries of Te Whānau-ā-Apanui. I embraced an Action Research methodology embedded in Kaupapa Māori. The Teina/Tuakana leadership model (Walker, 2004) and Pohatu's Āta approach (2005) served to counter any power imbalances or inequities between the researcher and the research community. The nature of the study, whānau creating and reading digital stories to their child, lent itself to a qualitative research design. Apart from an analysis of three whānau authored digital stories (artefacts) the primary tools used to generate information were HUI whakawhitiwhiti kōrero - reflections and planning meetings with whānau. The hui with the teacher (Kaiako KK) were professional conversations around engaging with whānau and refining the Google digital booklet

Unfortunately, Covid 19 lockdown impacted the number of whānau participants in this study and compressed timeframes. In term 4, 2021 we were able to complete two iterations with one whānau group. In the first iteration, digital templates were presented to whānau in a Google docs booklet, the second iteration, an e-book. An e-book provided two additional modes of transmission: audio, and video.

The data showed the concept of creating digital stories in the home setting was well received. Furthermore, there was keen interest in using Book Creator for stories because 'audio' and 'video' options allowed whānau to create a more sophisticated story - their stories became multi-modal. The primary whānau participant was 'Mum'. At our closure hui, Mum shared with me that she would be creating Social Stories for and with her brother-in-law by adapting some of the digital templates used in this study.

While the focus of this study was empowering and enabling whānau to be active participants in their child's education, I came to the realization that these templates could also be used in other settings, for example in schools with ICS (In Class Support) learners who benefit from multi-modal stories all about them; with people who have brain damage, and for people who wish to use 'storytelling' as a healing strategy.

## References

- Pohatu, T. (2005). Āta: Growing respectful relationships. Retrieved December 2021, from <http://www.rangahau.co.nz/assets/Pohatu/Pohatu%20T.pdf>
- Walker, P. (2004). Partnership models within a Māori social-service provider. *International Journal of Social Welfare*, 13(2), 158-169.



Master of  
Contemporary  
Education

## Executive Summary C8F

# Place-Based Education to Connect to Community

---

Wynita Katene

Place-based education is important to us all as it is a way of us looking at how we belong to our place and contribute to our place in a positive way. Place-based education can be perfectly described by Smith (2002) when he talks about the strengths of this approach by how we can adapt learning to the unique characteristics of our place and help bridge the gap between school and our learners' lives (Smith, 2002, p. 588).

This project aimed to create more involvement with our local community and help create positive relationships which will lead to a better understanding of our Place and engagement with learning. It aimed to give our students a place to belong and have pride in their place and learning. The primary goal of this project was to improve student engagement in the classroom through the use of Place-based Education.

Over two cycles of 10 and 8 weeks the students were introduced to Place-based education. They were exposed to opportunities to get out into their place and see what was out there. The introduction to Place-based education was implemented through a learning plan that allowed them to discover their place by using what they were interested in and wanted to learn more about. The second iteration provided an opportunity to delve into other Place-based education themes. The focus was the need to understand the social factors, local history, environmental approaches, and cultural beliefs when implementing a well-rounded perspective when learning about their place were the themes they discussed.

Data were collected at the beginning using a questionnaire and were redone at the end to see if there were any shifts in thinking about the understanding of what place means to us and engagement with learning. Observations, artefacts and teacher reflections captured important moments that were reflected on during the project.

The key findings from this project were that if Place-based Education is done well and takes into account all aspects as mentioned above it can be a powerful tool to drive student engagement. The skills that Place-based education will teach our learners are important skills for their future. This can be seen through the six design principles that are discussed in the book *The Power of Place: Authentic Learning Through Place-Based Education* (2020). They are: the sense of community expanding relationships and understandings of experts in their area; being learner centred which provides relevance and enables student agency; an inquiry-based foundation which will help with questioning, predicting and collecting data on all parts of their world; place-based education helping local to global learning and understanding these challenges in relation to their place; design thinking providing an approach for students to create and make a meaningful impact in communities through the local curriculum; and the last principle is Interdisciplinary, the importance of their curriculum matching the real world and being integrated through an integrated approach to learning (Liebtag et al., 2020, p. 185).

Place-based Education helps the teacher to focus on three key aspects of the learner. It helps them to see their uniqueness in a meaningful way. The learner is seen as having unbound potential which they will bring out in their way, at their own time. Place-based education helps each learner to have an innate desire to learn (Liebtag et al., 2020, Location 806). David Sobel (2004) also discussed these skills and the importance they have. He emphasises the curriculum and how important it is for our students to have a voice in the learning they find most relevant to their strengths in their community (Sobel, 2013, 28-32).

Place-based education is an appropriate contemporary approach in New Zealand to be able to learn about who we are and what our place is. It is engaging enough to help students to enjoy learning and creates opportunities for authentic meaningful learning.

My understanding of Place-based education and how it relates to my context grew. Smith (2002) talks about the strengths of Place-based education and how it can be adapted to the students' lives. Making their learning more authentic, which is a crucial part of student engagement, is a key driver of Place-based education which can be seen in the design principles discussed by Tom Vander Ark & Emily Liebtag & Nate McClennan (2020).

I have learnt that the skills that Place-based education will teach our learners are important skills for their future. 21<sup>st</sup>-century skills such as creativity, collaboration, communication and critical thinking can all be taught and interwoven into a Place-based education approach.

The impact on my practice has been inspirational and knowledge-expanding. Although not all of this project was done as well as I had hoped, the research and work done did create a shift. It has opened my eyes to the possibilities of new approaches that will work with my students in our context.

## References

- Bell, A. (2017). Working from where we are: a response from Aotearoa New Zealand. *Higher Education Research & Development*, 36(1), 16-20. <https://doi.org/10.1080/07294360.2017.1249066>
- Liebtag, E., McClennen, N., & Vander Ark, T. (2020). *The Power of Place: Authentic Learning Through Place-based Education*. ASCD.
- Penetito, W. (2009). Place-Based Education: Catering for Curriculum, Culture and Community. *New Zealand Annual Review of Education*, 18, 5-29.
- Smith, G. A. (2002, April). Place-Based Education. Learning to be where we are. *Phi Delta Kappan*, 584-594. [Place-Based Education: Learning to Be Where We are - Gregory A. Smith, 2002](#)
- Sobel, D. (2013). *Place-based Education: Connecting Classrooms and Communities*. Orion.



## Executive Summary C8F

# Using collaborative, social-emotional learning to increase self-regulatory skills

---

Caroline Leader

Throughout my Practice-based change project, my intention was to learn how to grow the social and emotional development of a diverse range of ākonga. By developing the opportunities to encourage student voice and agency and self-regulatory skills, I aimed to support ākonga, who had previously been unsuccessful in kura, to be armed with the skills needed for success. This would benefit ākonga, their whanau and the kura that they would eventually be transitioning into. I hypothesised that through collaborative problem-solving, ākonga would develop more vital self-regulatory skills. Encouraging student agency and voice in education is critical for engaging ākonga and having them become self-determined learners (Ministry of Education, 2016). However, there is a growing awareness that for ākonga to become agentic learners, self-regulatory skills must be in place (English and Kitsantas, 2013). It can be even more difficult for students identified as having social, emotional and behavioural issues (SEBD) to feel that they are valued members of a class as they are generally marginalised and not listened to (Jones et al., 2018). This can often result in ākonga disengaging (Cook-Sather, 2020). Furthermore, they may act out in the process, causing further ostracisation (Cook-Sather, 2020). To re-engage and best support the social-emotional growth of ākonga, relationships are key (Delahooke, 2019).

To create a programme that would have content suitable for different contexts and varying age groups, I developed a series of lessons designed around different themes that could be chosen and used depending on the needs of those involved. Each session was designed to encourage student voice, agency, collaboration and self-regulation. The original intention was that these would be run over three to four iterative cycles with small groups of ākonga, selected by the Special Education Needs Coordinator (SENCO). At first, I intended to support ākonga through the problem-solving process. After that, each session would be progressively more student-led. To assess effectiveness, I planned to use a questionnaire for ākonga and kaiako to self-assess against as well as a combination of teacher observation, Seesaw posts and student reflections. I also put together a Google site on which I included the rationale for the project, a how-to guide and all of the resources and lessons needed.

Covid-19 impacted my original goals and I had to adapt my plan in order to collect data to analyse. Instead of being able to run the project as originally intended, I instead focused on developing the Google site further, creates additional resources and guidelines for how to use the resources. This was then pushed out to peers through social media. My peers were encouraged to either use the resources as best they could or to read through the resources and think about how useful these would be in supporting ākonga to develop self-regulation.

Using Action Research as a research methodology, I attached a survey to the Google site. I thematically analysed and sorted the data, from the survey responses, email and personal communications, into positive comments and suggestions. I then made the suggested changes and prepared to resend everything back out for another research cycle. However, during this time, I

connected more deeply with Kaupapa Māori principals and realised there was a critical flaw in my programme design. I then altered the original programme to be used as a whole class programme, supporting all ākonga to develop a greater understanding of social-emotional learning and, in turn, each other. I also created another Google site that wove social-emotional learning through best practice for working with Māori ākonga.

My project findings were hampered by the limited amount of data and the inability to trial the programme during the research period. There was no clear evidence to show whether or not the programme would support collaboration or problem-solving. Likewise, there was no evidence to show that the programme would support the development of student agency or voice. However, the data received suggested that educators were interested in potentially using parts or all of the programme in their environment. Furthermore, some comments indicated that the educators felt that the lessons would support the development of self-regulatory skills.

Throughout this process, my practice has changed considerably. Although I had begun the research with good intentions, the initial model of my programme was centred around deficit thinking. Through making the much-needed changes, my programme now centres around mana enhancement. It values and emphasises relationships. Those relationships are essentially the basis for supporting ākonga to gain self-regulatory skills, which can ultimately help the growth of agency.

I intend to continue refining and growing the programme and resources and work with kaiako and kura to implement the programme. Through this, I will refine, change, and add any additional resources as needed. More than ever, I am determined to support struggling and vulnerable ākonga. They are vulnerable because they run the risk of not being heard and not finding their place in our educational facilities. It is time they are listened to, and their presence felt and honoured.

#### References:

- Cook-Sather, A. (2020). Student voice across contexts: Fostering student agency in today's schools - [https://repository.brynmaur.edu/cgi/viewcontent.cgi?article=1041&context=edu\\_pubs](https://repository.brynmaur.edu/cgi/viewcontent.cgi?article=1041&context=edu_pubs)
- Delahooke, M. (2019). Beyond behaviors: using brain science and compassion to understand and solve children's behavioral challenges. WI : PESI Publishing & Media
- English, M. C., & Kitsantas, A. (2013). Supporting Student Self-Regulated Learning in Problem- and Project-Based Learning. *Interdisciplinary Journal of Problem-Based Learning*, 7(2). Available at: <https://doi.org/10.7771/1541-5015.1339>
- Jones, J. (2019). Increasing Self-Monitoring Effectiveness Using Heart Rate Zone Notifications and The Zones of Regulation. (Electronic Thesis or Dissertation). Retrieved from <https://etd.ohiolink.edu/>
- Ministry of Education. (2016). Te Kete Ipurangi: Learner Agency. Retrieved on the 23rd of April 2021 from <https://nzcurriculum.tki.org.nz/Curriculum-resources/NZC-Online-blog/Learner-agency#>