Evaluation of project-based learning in the New Zealand Certificate in Study and Career Preparation (Level 3) in Kawerau

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Executive Summary

In 2017, work began on a re-conceptualisation of one of Toi Ohomai Institute of Technology's most widely delivered Foundation and Bridging programmes: The New Zealand Certificate in Study and Career Preparation (Level 3). One of the programme development team had been teaching in Kawerau and knew the region, the community, the learners – and their needs. This location became the site for the first delivery of a new Project-Based Learning (PBL) model in Semester 2, 2018, and the case-study evaluation described in this report.

The research aims were:

- To document key strategies and enablers as part of this approach to teaching, so that other Level 3 programmes can follow a similar path
- To evaluate the effectiveness of the teaching approach from multiple stakeholder perspectives – students, teachers, managers and community representatives.
- To create a video resource which showcases key features of the programme for dissemination across Toi Ohomai Institute of Technology and the wider sector.

Using a mixed-methods, case-study approach and following the protocols of other programme evaluations conducted recently across the organisation, the research team conducted (1) semi-structured interviews and (2) focus groups to collect perspectives and insights from current students, tutors, managers and programme designers, and community representatives. Data sources also included (3) comparison of academic results with previous cohorts and other level 3 programmes from the Faculty of Community Wellbeing and Development, (4) document analysis of course evaluations/first impressions survey, and (5) analysis of course documents including graduate profile and assessments to see how interview data aligned with the intentions of the programme learning outcomes. Finally, members of the research team attended the Graduation ceremony and (6) gathered further feedback from the students and local community members in attendance.

Findings have been extremely positive. Qualification completion for the 16 students in the studied cohort was 93.75%, compared to 66% for all Level 3 Career Preparation students in 2018. Programme evaluations were also very positive – 100% of students who responded agreed that they were satisfied with the programme, that the assessments were relevant and that the programme was interesting and enjoyable. Teaching staff saw students developing confidence, courage, resilience and communication skills, but most especially, an enthusiasm for learning. Teachers talked too of the changes a PBL approach had wrought in their own professional practice, with distributed leadership

and student-directed learning that generates strong trust and respect, in the classroom and beyond, into the community.

These results, and the video record of the student project (the creation of a business organisation and building a scale model 'tiny house' from recycled and donated materials), have already been shared with teaching colleagues, and in a symposium presentation, at which the lead researcher was accompanied by the tutor and some of the students. The PBL, business organisation framework has now been adopted by other sites delivering the same programme. Likewise, the idea of evaluating the learning experience, and of capturing success in a video format has been extended into similar undertakings by level 1, 2 and 4 Foundation and Bridging programmes at Toi Ohomai.

Three representative quotations serve as a summary of what this project has meant to participants; the following report tells the full story.

> *"My time on this course has got me knowledge I didn't know I was able to have, but it's also gained me lifelong friends"* (Student)

> *"We're going to employers now and they're saying come and share your journey – they've got confidence in us to go forward"* (Teacher)

> *"In our heart of hearts, we want local people to have first dibs on the employment opportunities coming this way and education is going to make that happen"* (Community member)

Figure 1. The Kawerau L3 students, October 2018

Introduction

Background

The New Zealand Certificate in Study and Career Preparation (Level 3) at Toi Ohomai Institute of Technology is a 17 week long academic programme that aims to provide an opportunity for learners to increase their literacy, language and numeracy competence through the application of a complex web of reading, writing, speaking, listening, critical thinking, problem solving, numeracy skills and communication technology so that they can achieve their own goals in meaningful social, cultural vocational and/or learning contexts: "*The qualification is for people intending to pursue focused development in the skills, capabilities, knowledge and attributes needed to succeed at NZQF Level 4 or above, within the context of a field of study or career pathway*" (Toi Ohomai Programme document, 2017).

The current programme was first offered in February 2017, across multiple delivery sites. Toi Ohomai has over 40 delivery sites, and Level 3 Career Preparation programmes are offered at many of these. It is seen as an important avenue for assisting students develop the necessary personal and professional skills for the workplace; it also serves as a conduit into higher qualifications in a range of disciplines. Many of those who enrol are what the Group Manager refers to as "educationally disadvantaged": they may have left school with few, or no academic qualifications; they may have been away from study for years, or decades; they may struggle with literacy or learning difficulties/disabilities. The programme, then, is their gateway to a future, and likely a "make or break" learning experience.

Students undertake both theory and practical learning activities throughout the duration of the programme. The programme literacy focuses on the written, numerical and oral language people use in everyday life and work, including all forms of literacies such as critical thinking, interwoven with knowledge of social and cultural practices. Previously, delivery has followed a relatively traditional academic approach of units of study accompanied by assessments of learning. There were lots of hands-on activities, but overall the programme was tutor-led, following a pre-determined structure which varies little, regardless of where it is taking place. While programme evaluations have been generally positive with students reporting satisfaction, or high satisfaction, completion rates have been sporadic, averaging 60% over the past two years, but with a range of 33% to 94%.

Many of the tutors in the teaching team have recognised regional variations and character across the delivery sites. Further, meeting the needs of regional communities is one of Toi Ohomai's strategic aims, however little had been formally put into place to address this. Then in 2018, a teacher from Kawerau, the case study site for this project, expressed concern that their students on the Level 2

programme required further opportunities to draw on and develop the skills learnt, but that the current 'academic' and text-based structure of the Level 3 programme was unlikely to provide a good fit for these learners.

A second driver for change came with the most recent EER, as teaching staff accepted that a programme was needed to cater to the particular demographic profile observed in the student cohort in Kawerau. The student group comprised a range of ages, abilities, capabilities, and experiences; many were from challenging educational backgrounds, and most were work-focussed. The concern was that the way in which the programme was being delivered would not allow the students to bring their true selves - their local knowledge, cultural identity, and unique experiences - to the classroom in a meaningful way.

The *Bay of Connections Māori Economic Strategy* (2013) has a strategic priority to focus on the skills and qualifications of individuals to participate in the economy and to generate greater wealth and prosperity for Māori and the region. Over recent years, it has been publicised that Māori students continue to achieve lower levels of NCEA qualifications than non-Māori. The 2013 Census data from Statistics New Zealand showed that Kawerau has a usual population of 6,363 people, with over 60% of the population belonging to the Māori ethnic group. In September 2018, *Education Counts* (Ministry of Education) reported that 67.9% of Māori school leavers achieved NCEA Level 2 or equivalent, compared with 83.8% of Pākehā school leavers.

One of the *Bay of Connections Māori Economic Strategy*'s strategic priorities focuses on 'Education and Skill Development', stating that education providers have an obligation as enablers to success to align training to regional market needs. Similarly, the Ministry of Business, Innovation and Enterprise released *He Kai Kei Aku Ringa – the Māori Economic Development Strategy and Action Plan* in 2012, which calls for better connections from education to the workforce and states "*in order to achieve economic growth we need the right skills and education, effective institutions, access to resources and capital, and the ability to innovate*" (Ministry of Business, Innovation and Enterprise, 2012, p. 8).

This ideology served to further support the redevelopment of delivery and assessments for the Level 3 Career preparation qualification, which aimed at moving away from an earlier more traditional classroom delivery which would be unlikely to engage the student cohort (over 95% of students identified as Māori in Semester 2, 2018), or meet local market and employer needs.

In July 2018, a recently redeveloped version of the programme was offered as a flagship offering for higher education in communities with few, or no, tertiary study opportunities. For this particular study, we looked at the semester 2 delivery of the new project-based learning model in Kawerau, in

the Eastern Bay of Plenty. The classroom tutor compared the new concept for delivery with what had gone before, saying:

> *We're offering opportunities for communication – this talking we're doing in the groups, doesn't happen enough. Sitting in front of a computer means we don't talk to each other….so why would we encourage that learning at home (online) if it means they're going to continue not talking to each other. Computers, cell phones, screen-time… we and they miss out on interacting and exercising the skills needed to communicate face to face. I'd rather have the students in this low risk environment and have a crack at practising it, without them realising they even are.*

Project-based Learning

Fischer (2017) describes project-based learning (PBL) as "several methods of curriculum organisation". It is formally known as a teaching method in which students gain knowledge and skills by working for an extended period to investigate and respond to an authentic, engaging, and complex question, problem, or challenge (Buck Institute for Education, 2019). Fischer (2017) mentions that there are many benefits to this style of learning, including that the flexibility of projects can serve a range of student learning needs and preferences in many forms: cultural, developmental, cognitive, motivational, and stylistic. This style of learning allows students to identify and cultivate a range of skills depending on the project and fosters a sense of belonging, empowerment and ownership (Fischer, 2017).

The Ministry of Education (n.d.) notes that for this teaching approach to be successful, teaching staff need to understand students' interests and passions, and how to connect these to the world outside the classroom. The teacher moves from a traditional teaching style to a facilitator role, and when the two instruction styles are compared, Strobel and van Barneveld (as cited in Ministry of Education, n.d.) reported that students engaged well and demonstrated a positive attitude towards learning. A review by Thomas (2000) mentions that according to teachers' experiences with PBL, activities had a variety of positive outcomes for the students, including importantly, their self-esteem, attitude to learning and work habits. This is supported by Kingston (2018) stating that *"PBL can promote student learning and may be more effective than traditional instruction in social studies, science, mathematics, and literacy".*

Evaluation aim and video resource

The aim of this evaluation was to identify the extent to which the shift to PBL in the New Zealand Certificate in Study and Career Preparation (Level 3) in Kawerau created a successful and satisfying learning experience for students, programme staff and other stakeholders. A longer-term goal was

that factors identified which enabled success might be transferrable to other programmes within the Study and Career Progression department at Toi Ohomai. A parallel objective was to produce a video record to showcase key features of the programme both as evidence of learning and skill development for the particular cohort participants, and also as a resource to disseminate across Toi Ohomai Institute of Technology for other Level 3 programmes and new-to-PBL teachers.

Figure 2. Peer support for literacy and numeracy upskilling

Methodology

A mixed method, case-study approach to evaluation was taken. Case studies allow an in-depth examination of topics over time, related to processes and practice (Schneider, LoBondio-Wood, & Haber, 2003). A case study of the two delivery sites will be a useful framework for this evaluation, allowing us to gather multiple sources of evidence and viewpoints of how a re-configured delivery of the certificate is impacting key stakeholder groups, and what each participant group perceives to be the benefits and challenges. Information was collected from the following sources and informants:

- Focus group interviews with students (Appendix A) and staff (Appendix B)
- Interviews with employers and community representatives (Appendix C)
- Comparison of academic results with previous cohorts and other level 3 programmes from the Faculty of Community Wellbeing and Development
- Document analysis of course evaluations/first impressions survey
- Analysis of course documents including graduate profile and assessments to see how interview data supports the intentions of the programme learning outcomes stated here

The mixed methodology approach was used to enable the collecting, analysing and mixing of both quantitative and qualitative data gathered from the research, the combination of which provided rich and insightful material with which to work.

The case study of the delivery site was a useful framework for this evaluation, and allowed the gathering of multiple sources of evidence and viewpoints of how a re-configured delivery of the certificate is impacting key stakeholder groups, and what each participant group perceived to be the benefits and challenges. Interviewers independent of the teaching team, talked to students, tutors, employers and community representatives about the shifts in practice, learning and attitude they saw in order to gather narratives and obtain student voice. Semi-structured interviews allowed participants to 'take the lead' where possible as they shared and constructed their own stories, enabling these to be featured in the outputs, and letting their voice emerge for a wider readership/audience.

Students from the cohort (Kawerau = 16 students) were asked for information about what drew them to study on this programme, their views about the programme itself and how they found completing tertiary level education in this method. As well as this, teaching staff, and other key informants (employers, representatives of key community organisations and any whanau members identified by the teaching team who may be interested to contribute) were asked for their perceptions on the programme.

Transcripts were analysed by reading and coding emerging themes, the research team met to determine the most significant findings and how they might best be represented in this report. Video recordings were gathered as part of the assessment process with students asked to sign a retrospective consent form to allow access to previously recorded videos. Researchers also asked students for volunteers to speak directly to camera about the same topics covered in the interview, to contribute to the vlog produced. All participants were offered the chance to preview this before it was shared more publically at Toi Ohomai Institute of Technology, ITPNZ Symposium at Eastern Institute of Technology, and in any other external dissemination.

Participants

In Kawerau, in Semester 2, 2018, 100% of the 16 students in the case study cohort were Māori; all were local, with ages ranging from 16 to 40 years of age. Gender in this cohort was predominately male. Primarily this programme is populated with second chance learners, students from secondary school where school has not worked for them for a variety of reasons. Two teaching staff were interviewed, two senior community members and the Group Manager and Faculty Leader.

Focus group interviews with students

Semi structured interviews were held with students on the programme at the delivery site in Kawerau. A description of the questions and the purpose of the evaluation was provided to the students, before two research assistants facilitated a discussion based on the pre-determined schedule of questions and prompts (Appendix A). These discussions were held throughout a teaching day, where the research assistants observed and interacted with the group in their learning setting, to allow student participants to 'take the lead' where possible, sharing and constructing their own stories.

Students were asked for information about why they chose to enrol on the programme, their views about the programme and its value, what they liked and didn't like, what their intentions were after the programme.

All students (Kawerau = 16 students) were given the opportunity to discuss information about what drew them to study on this programme, their views about the programme itself and how they found completing tertiary level education in this method. Students were also given the opportunity to provide input to be included in the video resource.

The initial intention of this evaluation was to look at two locations, however due to unforeseen circumstances (interpersonal issues and classroom logistics) the teaching staff identified that it would not be appropriate to interview the students or the tutors at the time at the second location. It was also originally desired that there would be a Kaupapa Māori facilitator to be involved in these

interviews, however, the students and teaching staff identified they weren't comfortable with this as the students had established their own strong sense of identity.

Interviews with Toi Ohomai staff

Individual discussions with staff (both teaching and management) were facilitated using the pre-determined schedule of questions and prompts at both the Kawerau delivery site and the Windermere campus (Appendix B). The topics covered looked at the perception of changes compared to previous iterations, the value and success of the programme for students and the challenges and successes. Some of these interviews were video recorded, to be part of the video resource.

Student Interview Data

An important aspect of this research was learning about the student experience and their responses to an integrated project-based learning project. Semi-structured interviews with the students allowed them to tell their own stories of previous learning experiences and the differences they saw in the approach taken by the L3 Career Prep programme. Text notes and voice recordings from research team members' phones were transcribed by members of the team and then transferred to an electronic document and checked by another member who was present at the time of interviews. No names were used in the transcripts.

Academic Results Data

Academic results were accessed from Te Ao Mārama – a website that provides a range of information for Toi Ohomai. It is freely available to all staff through the staff intranet. Te Ao Mārama has a variety of dashboards and contains information for self and academic evaluations, survey results, demographics and other reports (Te Ao Mārama, N.D).

Programme Evaluation Data

Of the student cohort, 7 students provided feedback through an institution led programme evaluation survey (Appendix C). This is regular institution wide practice for quality assurance monitoring. Summary documents of the collated and anonymous comments were included as it gave the opportunity to compare the questions asked during the semi-structured interviews and the anonymous responses of the programme evaluations.

Course evaluations/ first impressions survey.

- Interviews with community representatives
- Comparison of academic results with previous cohorts and other level 3 programmes from the Faculty of Community Wellbeing and Development

- Document analysis of course evaluations/first impressions survey
- Analysis of course documents including graduate profile and assessments to see how interview data supports the intentions of the programme learning outcomes stated here

Video Recording

Video recordings were gathered as part of the evaluation process. Students were asked to sign a retrospective consent form to allow access to additional previously recorded videos and photos that their tutors had taken throughout the semester. Student volunteers were asked to speak directly to camera about the same topics covered in the interview, as part of the video resource.

Teaching staff were asked for their feedback on the teaching and learning and overall experience of delivering this programme, and how they adapted their teaching styles. These interviews were edited together, into a 10 minute summary video complementing this report, while providing a long lasting record of the innovative practice, as a resource for new staff and to the faculty.

Ethics

Participation in this process was voluntary and participants were provided with full information prior to giving written consent. Participants were assured that any feedback would remain anonymous. Student names were not used. The evaluation was conducted by a team that were disconnected from the teaching and faculty staff and was approved by the Toi Ohomai Institute of Technology Research Committee (TRC 2018.053).

Findings

Prior to reporting results from the evaluation gleaned from the multiple sources of data outlined in the previous section, it is necessary to provide an overview of the project students conceived, designed and carried out during their study. It was this experience which led to the personal growth, skill development, and learning achievement which followed.

The PBL project

In Kawerau, in Semester 2, 2018, the class were introduced to the idea of PBL by the teacher. The overarching concept was outlined by the Toi Ohomai academic development team who developed the new-look delivery model. This consisted of a project-based, whole-class development, with integrated portfolio assessments. The student group were given the task of forming a pseudo company or trust that has a specific focus to develop a project related to community needs in Kawerau. This was based on a business model.

The project began with a brainstorm – what did the Kawerau community need? The class agreed to focus on housing, with a solution that met the SMART (Specific, Measurable, Achievable, Realistic, Time-bound) criteria – tiny homes. The class then researched the topic, as well as organisational structures. They wrote a mission statement, elected a Chief Executive, wrote job descriptions, held interviews for top jobs, wrote CVs. Everyone had a role - divided into teams – management, HR, carpentry, plumbers, sparkies. One decided a liaison was needed between management and construction teams – he researched titles and job descriptions, then wrote his own. Challenges included resignations and having to re-fill positions. The class only needed to produce plans, but ended up building a 'garden-size' home – like a children's' playhouse, or a 'wendy house' as a scale model. The materials used for this construction was mostly donated by various community stakeholders and money that students had fundraised to assist with the cost.
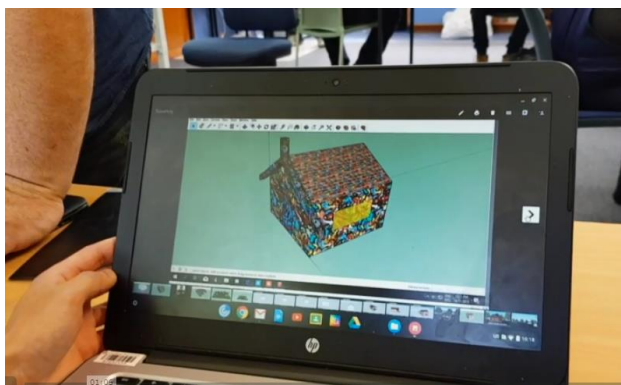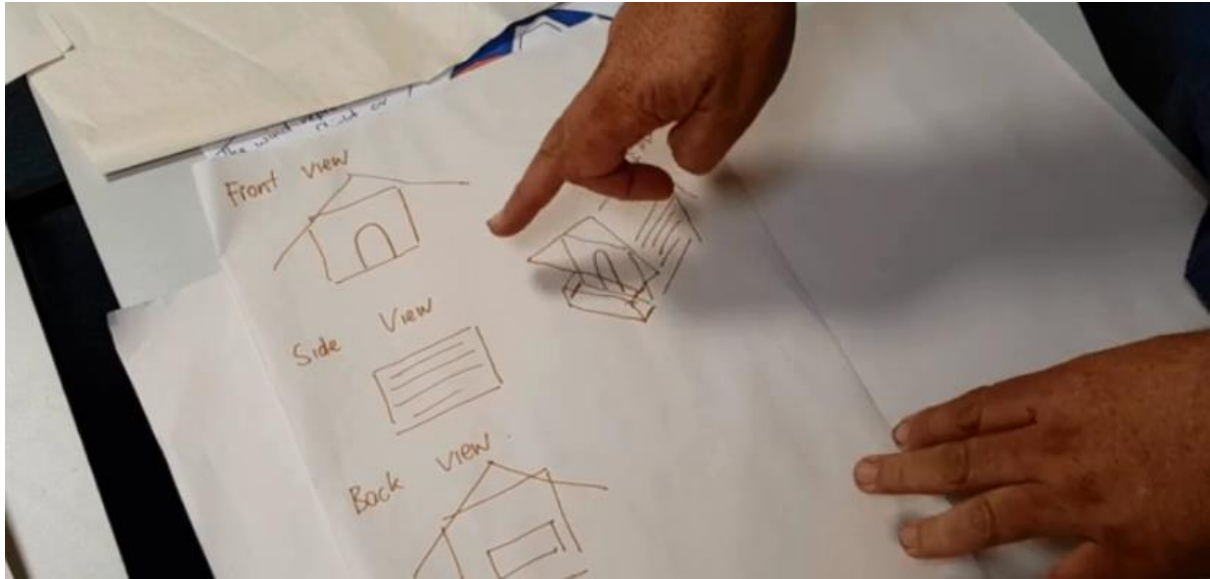
Figures 3-5: Students working on project design in class

The students kept records of their meetings, decision-making and actions, focussing on the evidence rather than the mode – learners used a variety of modes such as , reports, videos, blogs, word-process, handwritten notes and oral presentations to demonstrate their learning journey throughout this project. Several students had advanced technological skills and an interest in graphics, they were able to produce electronic copies of plans and diagrams of the 'house' as the project developed.

The teacher recounted that students embraced the idea of co-constructing their study from the first instance, and were clear that they were looking for a learning experience that was as different as possible from their past schooling experience. They wanted jobs, and the skills that would lead to this outcome. They wanted to know how organisations worked, and how they could best fit in and contribute. Students often stated that they felt valued and given an opportunity to put their current skillset to the test as well as further developing their literacy and numeracy skills.

Underpinning the project was an agreed set of values and behaviours to support the learning environment. Chief among these was *whanaungatanga* - the sense of kinship and belonging through strengthened relationships. The students selected a *whakatauki* (proverb) to encapsulate their values, goals and vision:

> *"Ma nga huruhuru, ka rere te manu"* – without feathers, the bird cannot fly

The students spent a number of weeks developing a class room *taonga/pakihi* which represented their journey and paid respect to Maori deities. They incorporated their *maunga, waka*, *tangata whenua*, *tipuna* and their journey throughout each day whilst being guided by their *whakatauki*. The *taonga*, and organisation name was "Winged Ventures".

Figures 6-7: Winged Ventures logo designed by the students

Classes were run like business meetings, and the teacher reported how students stayed 'in role' throughout, with extensive conversations as they planned and managed progress. They sourced recycled materials, and representatives approached local businesses for supplies, which led on at least one occasion to an invitation to present to the managers on what the class was doing. When the class decided they needed money they again brainstormed solutions and ran a raffle for firewood, successfully raising $250 which was spent on materials.

Figures 8-9: Tiny house model, and frame that the students worked on

At the time of data collection and site visits by the research team, the house model was still incomplete, although this was continuing to be worked on following graduation. The likely destination for this project outcome is a local kohanga reo.

Qualification Outcomes

Table 1 below condenses the course and qualification outcomes for Career Preparation Level 3 programmes offered in the last two years. "All students" captures the combined academic results for multiple delivery sites. The Kawerau figures show the aggregated results for Semester 1 and 2 deliveries run each year. Both the course and qualification completion rates for Kawerau have improved significantly, from 72% course success in 2017 to 82% in 2018, compared with 75% for all intakes. However, when looking at qualification completions for separate deliveries, the 2018 Semester 2 Kawerau intake which is the subject of this case study had a significantly higher rate of 93.75%.

Table 1: Course success by location for students in the New Zealand Certificate in Study and Career Preparation (Level 3)

Course and qualification completions for all students	2017	2018
All students		
Course completions	74%	75%
Qualification completions	65%	66%
Kawerau		
Course completions	72%	82%
Qualification completions	33%	73%*

*this figure includes two intakes as there was an intake that crossed over from October 2017 - February 2018.

The qualification success rate for the Semester 2 Kawerau intake was 93.75%

A second point of comparison which again highlights the success of the PBL approach, is a comparison of the Career Preparation Level 3 programme with another Level 3 programme delivered in the same setting in Kawerau, over the same time frame, but using a traditional teaching model (Table 2). Again, once the case study programme results of 94% qualification completion are separated from the aggregated 2018 results, the success of the PBL delivery is clear.

Table 2: Course success for students in two Level 3 programmes in Kawerau

Qualification and course success - Kawerau L3	2017	2018
New Zealand Certificate in Health and Wellbeing (Level 3)		
Course success	72%	70%
Qualification success	67%	64%
New Zealand Certificate in Study and Career Preparation (Level 3)		
Course success	72%	82%
Qualification success	33%	73%*

*this figure includes two intakes, as there was an intake that crossed over from October 2017 - February 2018. The qualification success rate for the Semester 2 Kawerau intake was 93.75%

Figure 10: Graduation December 2019

Programme and teaching evaluations

Programme evaluations from the *2018 Toi Ohomai Programme Survey* for students based in Kawerau were also very positive – 100% of students who responded in the 2018 survey agreed that they were overall satisfied with the programme. Most (85%) students also agreed that the programme met their expectations and 100% of the students agreed that the assessments were relevant and that the programme was interesting and enjoyable. Other positive comments received noted that

> *"…I was offered life skills that I never really knew I already had…"*

> *"…It has given me the confidence to share my thoughts and ideas, and motivated me to problem solve… I am aware of my strengths as well as my weaknesses, which has given me something to be proud of, as well as something to work on."*

Teaching evaluations from the *2018 Toi Ohomai Teaching Survey* for the tutor are positive, and illustrate the teacher's role as facilitator, rather than the source of content: with students stating that he

> *"…guides us back onto the right track as we can fall off the rails sometimes and forget what we are meant to be doing…"*

All students agreed or somewhat agreed that they were happy with the teaching on the programme. Other comments emphasise the way in which the teacher sets the tone for the work together, and embodies the classroom and institutional values, such as *whanaungatanga:*

"He is a good role model for all of us…"

Programme value and change

Teaching staff appreciate that each individual Level 3 cohort has its own needs and context. Comments from teachers and managers emphasised the importance that Toi Ohomai is committed to becoming more responsive to the needs of the students in the level 3 Foundation and Bridging programmes. One comment reflecting on the new PBL delivery model saw this as

"closely aligning their strengths and goals to match their learning style in an environment that challenges, encourages and supports real life learning and invaluable soft skills that sets them up for success."

Staff recognise the value of the programme for students, the community and their whanau - as the quotes below demonstrate:

"Students come away from the programme with the confidence and courage to seek new opportunities, whether through employment, self-employment or further study. They understand they need resilience which they develop through robust discussion, and the team developing agreeing and respecting values, policies and procedures which they create"

"They develop strong communication skills, for example they perform a presentation on their business structure to every visitor that comes into the classroom. This involves a formal welcome to the business, the business story is told and each student speaks to their roles and responsibilities. The value of achieving the qualification is life changing for these students."

"You start to see employment and further training lifting the whanau's mana, the manaakitanga shown to all whanau is very strong. The students understand how to recognise their needs, overcome weaknesses and look for opportunities as we consistently carry out SWOT analysis throughout the course."

"I think we're building more confident students, we're offering the opportunity to practise all these things, like time management, coming up with strategies for dealing with life and being able to think ok, this 'thing' is happening at home, but I'm going to prioritise and do this as well"

Teaching style

Teaching staff have found that PBL involves changing their teaching practice, and persona, but that the rewards are tangible. For the main classroom teacher, PBL provides an

"…infinite amount of naturally occurring experiences across a significant range of disciplines. The ability to be responsive to the needs of your cohort requires that you are very flexible and adaptable in your teaching style. I found myself melding into the background but you can always sense the students always know you are there, I believe it creates a really authentic style of leadership and teaching that generates very strong trust and respect across the whole cohort including the teacher."

It was important that the teacher retain an overview of the class dynamics and processes, even while they were discussing elements of the project. By making what was happening tangible and encouraging students to reflect on their own participation, they became aware of the 'soft' skills they were developing, and the way these would be important in the workplace:

"There are so many teachable moments in it – identifying the moments, embracing the engagement, where they didn't even realise what they just did, that they used body language, eye contact, all those things they've been avoiding. Unless you're aware of it, how do we create any kind of change?"

Other staff involved with the design of the programme found that watching the excitement from the students and the energy is a positive aspect of the PBL teaching strategy. One of the managers commented on a site visit:

"Three days in to week one, they (the students) were so excited, they couldn't wait to tell me what they were doing and what they were going to do. Half the battle is won already!"

Figures 11-12 Working with the tutor for individual skill development

Graduate destinations

Students told us in interviews and focus groups that they wanted employment as an outcome from their study. Community members too see participation in the workplace as a key indicator of success. The Deputy Mayor of Kawerau, speaking at Graduation, said:

> *"Opportunities. Sometimes you can't see them or identify them so you just have to grab at them. At the moment, our iwi and local community see a lot of potential for Kawerau, so we have to get ready"*

Of the 10 students (from the case study cohort of 16) who responded to an email or phone request from the teacher, asking about whether they had found work or were considering future study, four had found employment in Kawerau, 2 more were working in Rotorua and Auckland, and a further two were self-employed, using their skills to grow their own contracting businesses. One had already enrolled in further education, and the last of these respondents was working short-term in the kiwifruit season, but considering further study.

These are exactly the outcomes all stakeholders were hoping for. As the class teacher states:

> *"The local community has a real need to see its people realise their potential as the community has significant new employment opportunities occurring through the regional growth that is being experienced in Kawerau in particular. This in turns helps to lift whanau out of the poverty cycle that so many are finding themselves in"*

And,

> *"The community needs leaders across its entire demographic and these students are leading the way. They encourage others into training and employment"*
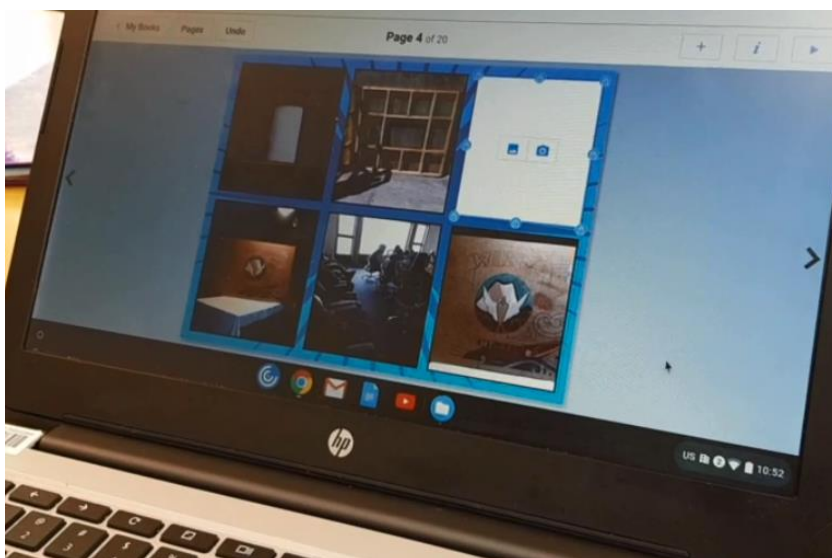

Figure 13. Computing skills: digital portfolios

Discussion

This evaluation set out to investigate the outcomes of a Project Based Learning model of teaching in a programme that was formerly delivered in a more traditional, curriculum led, classroom-based model. The feedback was overwhelmingly positive that the changes had been an improvement for this particular group of students, at this particular site. Indicators of success included high completion rates and strong graduate outcomes, as reported in the Findings.

In addition, success was observable in the sense of community, and with core Māori (and Toi Ohomai) values such as whanaungatanga observed in action, creating engagement, responsibility and enthusiasm for learning in the classroom and beyond. As one student participant shared:

> *"The main difference here is whanaungatanga. Might just be that the Pakeha system didn't work. Here makes me feel comfortable. I like the vibe… What's way easier here is the team environment, I don't have to do it all alone."*

Students came away from the programme with a renewed sense of confidence, after developing a strong sense of belonging and communication skills. The students were seen by teachers, managers and community members as respecting the values and processes agreed by the class as part of defining they way they would work together, and 'walking the talk' following their graduation. This aligns with other studies reported in the literature (Sciascia & Rangi, 2017), which found that learner success, in particular for Māori, is expressed in a variety of ways – not just grades. Graduates stood and presented at the inaugural Ahi Kaa Kaupapa Māori Research Symposium in December, 2018, and proudly presented their experience on the programme; the skills they had learnt and the respect that they had for each other and their teacher was obvious to the audience and remarked on by at least two of the presenters who followed. Other members of the audience at the symposium commented in emails to the organisers about this presentation, saying:

> *"Some of the work going on and surrounding practice is inspiring. I left yesterday feeling uplifted… strengthened"*

> *"I particularly loved the students' presentations for Winged Ventures… I am Pakeha and I felt very privileged to have the opportunity to hear the presentations covering so many facets of Māori experience in Te Ao Māori".*

Alongside confidence and public speaking skills, students identified improved interpersonal and relationship building skills as very important elements in their experience:

> *"I love everyone in the class, I love all my team mates. A real whanau. There's no negativity, we're all here to learn".*

Such comments again agree with the literature, for example, Bishop and Berryman's (2009) conclusion that "relationships and interactions between teachers and students are key to effective teaching of Māori students". Further, students feeling supported and comfortable within the PBL classroom context follows one of the key recommendations for teachers supporting PBL suggested by Kokotsaki, Menzies and Wiggins (2016). Sciascia and Rangi (2017) note that Māori pedagogical approaches to teaching and learning are advantageous to learner experiences and success. These approaches expose teachers to different ways of being, shifting from the traditional model, to a model where the teacher can also learn from the student. In the L3 class, the teacher was not just a source of knowledge, but a participant in the learning, knowing that students brought with them a bank of prior learning and life experience on which to draw:

> *"He has a big heart and is very respectful at all times…"*

Overall, the course and qualification completion data, as well as stakeholder interview data, confirmed that this delivery of the New Zealand Certificate in Study and Career Preparation (Level 3) using the PBL approach was a successful delivery mode. Thomas' (2000) observation that students and teachers both believe that PBL is beneficial and effective as an instructional method, and because of the various features, is more effective in adapting to various learning styles than a traditional model, was certainly the case here.

Challenges, Issues and limitations

It is important to note that the PBL approach to delivering the L3 programme has only been completed by one cohort of learners to date. There are so many factors which affect a student's study experience, completion and success, it is not possible to state that the PBL approach was solely responsible for these Kawerau students' success, or that the same results would occur for all similar cohorts in the future. However, further iterations of the approach are now in progress, so that cumulative data will assist the programme team to test the generalisability of these results over time, and in different delivery sites. Adopting a PBL approach in L1,2 and 4 programmes will further add to the dataset.

Project outcomes

- This report will be shared with other members of the Foundation and Bridging programmes, as the video resource is being already. Together, these two outputs will help the teaching team address issues of programme knowledge, sustainability and consistency, as new sites and new tutors come on board.

- The project has already informed a similar evaluation of L1, 2 and 4 programmes currently underway.
- The findings from this study have been presented at two conferences: 1. "name of presentation", Ahi Kaa Kaupapa Maori Research Symposium, Rotorua, December 2018. 2. "Name of presentation" at ITPNZ at EIT, Hastings, in April 2019.
- Growth in research, report writing and presentation skills by members of the research team, several of whom were novice researchers.

Transferability

The Bay of Plenty Tertiary Intentions Strategy (2015) states that "education is an essential component of wellbeing in contemporary society and that tertiary education provides individuals the best life-long protection against unemployment, low wages and poverty". Further evaluation and reflection on the delivery models in the other foundation programmes at Toi Ohomai are being addressed amongst the academic staff, specifically looking at ways to best engage learners in a purposeful way. This aligns with the Tertiary Intentions Strategy (2015), whose research findings identify that addressing issues regionally will have the best impact. For the majority of students, the traditional secondary school model of delivery has not suited their learning styles, with complaints that it was 'boring', 'didn't know why I was going', 'learnt nothing' etc. As education providers, we have to be mindful not to emulate this style of 'academic' and text-based learning in tertiary settings when clearly has not worked for such student cohorts. Each delivery site that offers PBL can be positioned to make a difference for the people of the community, taking into account the resources, funds, student cohort and teaching staff. This is achievable by creating meaningful partnerships with community groups, hapu and iwi, which will promote successful educational partnerships in each offering location.

For PBL to work in a range of locations, there needs to be a focus on employability skills, communication and relationship building. This is a pathway that could align to the Bay of Plenty Tertiary Intentions Strategy to improve the transitions between secondary and tertiary education, to provide work-ready graduates, that have the soft skills that employers and community members require. The PBL approach, as Thomas (2000) concluded, is "…effective at teaching students complex processes and procedures such as planning, communicating, problem solving and decision making…" and gives students the personal self-belief to achieve, which is paramount for students to succeed.

Many of the strategies that were trialled in the PBL approach in Kawerau can be transferred to other programmes. Based on a composite of stakeholder contributions, these include:

- Taking the time to build classroom values, relationships and share openly and honestly. This will help students feel comfortable and in turn responsive to as the relationships are authentic.
- Incorporating kinaesthetic learning experiences into the classroom, which will help with learners who don't 'sit and learn', while forming meaningful relationships within the classroom environment.
- Building resilience in both staff and students
- Adopting a strengths-based model, where the focus is on what people can do, rather than what and why they can't. The idea is to grow independence and empower decision-making for all, delivering learning that suits students, and not the provider.

Figures 14-15: Developing workplace skills in carpentry

Figures 16-17: Increased confidence in oral presentations

Conclusion

This report serves to document this very different approach to teaching skills for the future, including critical thinking, flexibility, problem solving, teamwork and leadership. We would also like to focus on delivery as a model for teaching-as-facilitating, in a democratic classroom partnership which doesn't just talk about being student-centred, but is student-led.

Based on the L3 Kawerau evaluation, the project has also prompted further research into evaluating strategies which managers and academic staff can use to foster innovation, inquiry-based learning, and hands-on employability skills development within L1-L4 curriculum delivery. It is proposed that three case studies of new teaching initiatives (Supported Learning Level 1; Certificate in Foundation Studies Level 2; New Zealand Certificate in Study and Career Preparation Level 4) will be evaluated and recorded as teaching resources that can be utilized across Faculties. The research team for this new L1 – L4 project has identified opportunities to introduce a number of similar teaching practices across a range of programmes which will incorporate the success of the Level 3 programme.

Recommendations

- Needs support of the wider institute to implement this PBL mode of delivery, as inevitably more resources are required - especially for practical and community experiences.
- Follow up project in six months – one year's time with graduates from the programme to see whether any benefits identified have been sustainable.

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Appendix A - Focus Group Questions for Students

You've recently been studying the New Zealand Certificate in Study and Career Preparation (Level 3) at Toi Ohomai Institute of Technology. We'd like to ask you a few questions about your study.

1. Why did you choose to study this course/programme? (What was your goal)

2. Tell us a bit about your experience in the programme?.

    (Prompts – *how long it took you to settle into your programme* timeframe, transport to and from course, interaction with your tutors, class mates, how was this course different from any other study or school experience? project-based learning etc)

3. Do you think the portfolio assessments were helpful in assisting your learning, how have they prepared you for further learning.

4. What did you like about the course?

    (prompts - *what has helped you, how you have found learning in a team, workplace experience)*

5. What has been the biggest challenge for you? Were you able to overcome them?

6. When you have finished this course, will you go into further study? Employment? Or other…

    (prompts - *how you have been prepared for life after this programme.*

7. *Do you think the portfolio assessments allow you to demonstrate your learning?*

8. What do/did your whanau think about you doing this course? (prompts: were they supportive, enthusiastic, etc.?)

9. Did this course enable you to keep with your initial goal when you enrolled?

Appendix B - Interview Questions for Toi Ohomai Institute of Technology staff

The following questions refer to the New Zealand Certificate in Study and Career Preparation (Level 3) at Toi Ohomai Institute of Technology.

1. What is your perception of the changes to delivery of this programme, compared to previous iterations, or to other Level 3 programmes you teach on?

2. What do you think the value and success of the programme is for students?

3. What do you think the value and success of the programme is for the community?

4. What impact do you believe this programme is having on students and their whanau,

5. What impact do you believe this programme is having on the community or particular groups?

6. How have you managed the learning process for students in their project/problem-based learning? (How much have you had to change your teaching style?)

7. How do you think the portfolio assessments were helpful in assisting your students learning, how have they prepared them for further learning.

8. What has been the most positive aspect of the project-based learning?

9. What has been the biggest challenge for you, of project-based learning?

10. How do you think that challenge(s) could have been mitigated?

11. How will you introduce this style of learning to your next cohort of students, completely new to the concept of project-based learning?

Appendix C - Interview Questions for Employers

Toi Ohomai Institute of Technology has been delivering a number of programmes in the Kawerau/Taupo area over the past few years. We are gathering feedback from a range of people and organisations about the impact of the programmes on your community.
1. What size organisation are you from? (number of employees, local or national organisation etc.)

2. What skills do you need for new employees in your organisation?

(Prompts)

• Is a qualification more important?

• Or an individual being able to fit into the workforce – soft skills(communication, work ethic, self-confidence, time management etc vs hard skills which can be taught on the job)

3. Have any of your staff completed tertiary study with Toi Ohomai Institute of Technology or another organisation? If yes, which one?

(Prompts - did they come with any particular skillsets required by your organisation)

4. Having viewed the programme document, what is your impression of the content covered? (summarise programme doc to view)

5. What is your perception of the suitability, value and success of the programme for students?

6. What is your perception of the suitability, value and success of the programme for the community?

7. What impact do you believe this programme is having on the community or particular groups?

8. What possible future educational needs do you see in your community, Toi Ohomai Institute of Technology might be able to provide? Do you see any gaps?

Evaluation of the New Zealand Certificate in Study and Career Preparation (Level 3)

You are invited to participate in an evaluation of the success and value of the Pathways for the New Zealand Certificate in Study and Career Preparation (Level 3). In order to ensure we are meeting the needs of our students and community, Toi Ohomai Institute of Technology wishes to know how useful this programme has been in preparing students for study. We would also like to know what experiences and observations - both negative and positive - you may have had with regard to this programme.

For students

We are going to interview two groups of students: students who completed the programme in Kawerau, and students who completed the programme in Taupo. You have been invited to participate because you are in one of these two groups. We would like to talk to you about your experiences of studying at Toi Ohomai Institute of Technology, how long it took you to settle into your programme, what has helped you, how you have found learning in a team and how you have been prepared for life after this programme.

Teaching staff, employers and community representatives

We are also interested in the perceptions and observations of others involved in the programme, or in contact with students and/or graduates. We hope that you will be able to assist us in recording any shifts in behaviour, attitude or practice that you have noticed in learners with whom you are in contact. You might also have ideas about the programme content and delivery for future improvements.

Participation

Participation involves an interview of about 30 minutes. We would also like your permission to include some of the photos and videos that your tutors have taken during the course to showcase the best of the programme and the work that has been produced. By signing below, you consent to us using a voice recorder to record this interview and including some of these images. You will be able to view the video and photographs before this is publicised. Any recordings will be kept confidential to the interviewer and will not be shared with anyone outside of the research team. The research team will only see your information with all names and identifying information removed.

Participation is voluntary; you may choose whether to talk to us or not. You may also choose to stop the interview and withdraw at any time, up until the data is analysed. When reporting on the results, what you tell us will be confidential, and in order to protect your anonymity and we will not use your name in our reports. A summary of the results at the end of the study will be available to you via email. Data will be kept in a password protected computer in a locked office, for three years. The results will be used to improve our programmes in the future.

This research has been approved by the Toi Ohomai Institute of Technology Research Committee (Approval number:) Research dates are from 19 November (to be confirmed)

If you have any questions or concerns about this research, please contact

Kate Shanaghan -

Pip Crombie -
Cath Fraser -
Naomi Bates -
David Simanu –
[Name] _____ [Contact details] _____

Thank you for your participation.