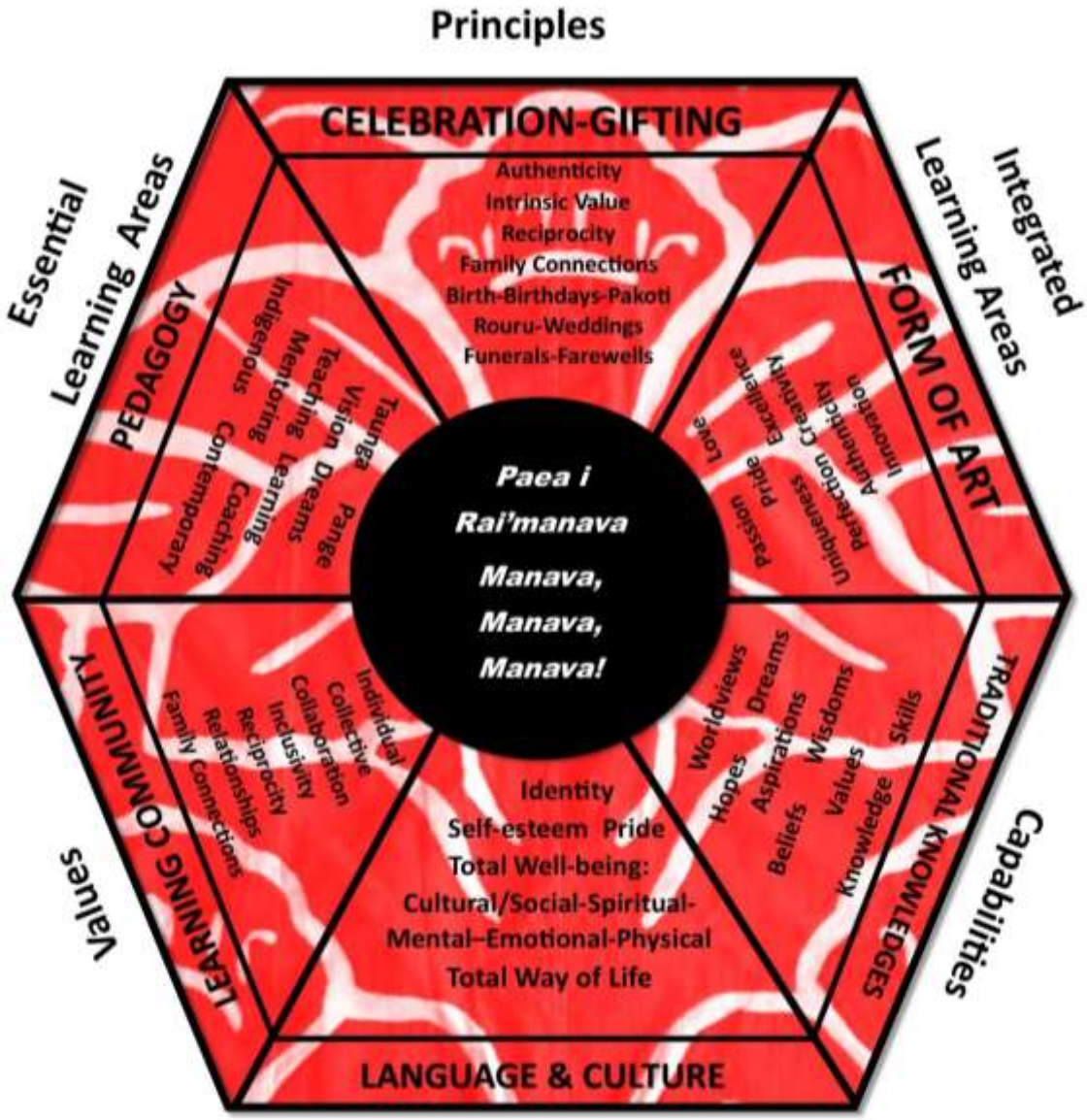
COOK ISLANDS
Ministry of Education
Maraurau o te Pae Api'i

No. 3, 2015

Korero

The Research Journal for Cook Islands Educators



Research by Cook Islands Educators

Korero: The Research Journal for Cook Islands Educators

Korero is published by the Cook Islands Ministry of Education, PO Box 97, Nikao, Rarotonga, Cook Islands

No. 3, 2015

Editors:

Kathryn Cheval
kcheval@education.gov.ck
Andrew Duncan
peerassociates@ymail.com

Cover Image:

Cook Island Curriculum Framework Tivaivai

Printed by:

Rarotonga Printing Ltd.

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Foreword and Acknowledgements

Kia Ka to Rama e Tama-*May the Beacon of Research Inspire You*

Learning in the 21st century creates challenges for educators and teachers alike. Shifts in learning & teaching paradigms are well documented in research conducted over time, and in a range of contexts. Action research within Cook Islands schools, and the publication of articles in the *Korero* journal, are recent developments. The urgency to delve deeper into the art and practice of learning and teaching to meet the needs of the 21st century has increasingly challenged educators and teachers to undertake research in their current thinking and practice in order to 'make sense' of the way children are learning, or, are failing to learn. In other words, identifying and establishing the connectivity of practice and learning outcomes to quality learning. With this goal in mind, the contributors of this publication of *Korero* set to task in their respective areas of interest.

The *Tivaivai* metaphor features on the cover of this publication; a paradigm to illustrate a conceptualisation of learning and teaching that is contextual, innovative, forward-looking and embracive of local and global settings. The art of research is synonymous to the art of sewing a tivaivai. The threads, running through the articles are deliberately selected, researched, critiqued and constructively crafted to delineate the key findings and conclusions.

I commend the ECE teachers on Rarotonga for their determination and perseverance to lift their professionalism. They took, both the individual and cluster approach to research, and, through consultation, collaboration and critical review, confronted some of the challenges affecting learning outcomes for them as facilitators of learning, and for the children as active participants in the learning and teaching paradigm. The four articles entitled: *Differences between Boys and Girls; The Importance of Early Childhood Education; The Challenges of Teaching Maori Language in ECE* and *The Challenges of Recruiting and Retaining Teacher Aides,* provide challenging reading and reflections. The findings are in no way conclusive, but encourage further interaction through research. Of equal significance is the realisation of ongoing professional learning development and professional reading to ascertain currency in knowledge, skills and pedagogy that connects with the 21st century.

The 21st century also signifies the onslaught of technological advancement, and its potential to revolutionise learning and teaching. The article: *Technology in Teaching: Does the Implementation of Laptops as Teaching Tools Enhance the Work of Teachers at Tereora College?*, took a specific look at the use of laptops by teachers at the national school. The article highlights the challenges, positive and negative, faced by teachers in using laptops to enhance their practice. At the same time, it raised questions in relation to capacity and capability of teachers to effectively utilise the laptop to achieve

maximum outcomes for students. Most significantly, is the absence of planned and targeted professional development, and ongoing support prior to the distribution of the laptops.

Numeracy is one of the foundation skills for all other areas of learning. Two articles explore its significance in terms of classroom practice and community engagement: *The Acquisition and Application of Basic Fact Knowledge* and *Community Engagement: Involving Parents in Numeracy*. As with all learning contexts, a living, stimulating and interactive environment encourages enquiry in the process of learning and teaching; in particular, the acquisition and application of basic fact knowledge of addition and subtraction. Such environment fosters success, enjoyment and challenge. Likewise, parents play a pivotal role in the early learning behaviour and attitudes of their children. Of reciprocal significance is the beliefs, attitudes and mathematical knowledge of parents towards that learning. Set against the backdrop of researched body of evidence, the deliberate and strategic act by the Numeracy Advisors to facilitate a community education initiative, paid dividends. The second article, highlights the fact that synergy and harmony within learning communities has the potential to release positive, meaningful and sustainable outcomes for all concerned.

The issue of aggression among adolescents is the focus of the article, *Relational Aggression and Physical Aggression among Adolescent Cook Islands Students*. This study is a first for the Cook Islands context, and presents opportunities for further research. The findings reflect interesting perceptions and interpretations in addressing aggression, some of which are determined by cultural and Christian beliefs.

A special feature of this publication of *Korero* is the discussion on modern learning environments (MLEs). The destruction, by arson, of part of Avatea School in 2013, presented an opportunity for the Ministry to co-construct a 21st century learning environment. The merger of Avatea School and neighbouring Nikao Maori School, was, therefore, born to become Apii Nikao. The editorial introduction to the articles on Apii Nikao puts it quite succinctly as *A Phoenix Arising from the Ashes*. One can only imagine the controversy, complexity and enormity of such a shift; historically, politically, culturally, socially and educationally. The three articles: *Apii Nikao: A Way Forward*; *How to Make It Stick: Pedagogy and MLEs*; and *Apii Nikao: Taking the Temperature;* capture the journey from an educational perspective. The connectivity to the *Tivaivai* paradigm that is articulated in the Apii Nikao Tivaivai Vision Framework is a powerful symbol of the unity and optimism exemplified in the *vision, voice, place,* and *values* of Apii Nikao. We are also left to contemplate on the future of the school: the ongoing shaping, moulding and carving of the *Phoenix*.

It is indeed my privilege to congratulate all the contributors to *Korero* No. 3, 2015. Like those who came before you, you have made your mark, and the findings of your research will not only raise more questions in terms of your practice, but will inspire your

colleagues to follow your example. The realities of the 21st century demands that as educators and practitioners; it is imperative that we maintain currency in knowledge, skills and pedagogy if we are to prepare our children for tomorrow.

I acknowledge all the contributors to Korero No. 3. I think the greatest achievement for each one of you, is the realisation of the difference you have made professionally, and the impact this would have on the children in your service. I, therefore, congratulate the following researchers: Stephanie Puiri, Marise Henry, Nileshni Chand, Nooroa Tamangaro, Mami Omao, Columba Henry, Theresa Noovao, Marama Denny, Teokotai Taio, Ellen Paquis, Mary Vakatini, Tungane Rasmussen, Tania Akai, Ngatutai-Annie Tearetoa, Mariana Mataio, Strickland Upu, Dr. Kathryn Cheval, Dr. Angela Page, Dr. Lisa Smith, Janet Woodger, and Alexander Davis.

The strength of any institution is the people within it. The support team from the Cook Islands Ministry of Education Learning and Teaching Division who provided professional guidance and mentoring throughout the process is also deserving of recognition: Strickland Upu, Dr. Kathryn Cheval, Alexander Davis, Janet Woodger, Tasman Mouldey, and Tania Akai. A special acknowledgement also goes to Dr. Andrew Duncan who, in the capacity of a volunteer, conducted a writing workshop to kick-start the writing process and also spent many hours providing editing support for the journal. The journey has been equally challenging for both researcher and mentor, but at the heart of the matter is an unrelenting commitment to educational success for all children.

Akamaroiroi.

Upokoina Herrmann

Director of Learning & Teaching

Differences between Boys and Girls in ECE

Stephanie Puiri, Blackrock Preschool, Rarotonga

An edited summary of a thesis submitted to the University of the South Pacific in partial fulfilment of the requirements for a Bachelor of Early Childhood Education.

Context

The subject of my research project is investigating the possible differences between boys and girls in early childhood; their differences in how they learn, how they play, and the teaching strategies used to take these differences into account, in order to prove the best teaching and learning opportunities as possible, for both boys and girls.

The issue that I have noticed, is that boys seem to need more rough and tumble, active play, whereas girls seem to be happy with more gentle, calm, focused play.

Boys seem to need to be outside, running around, 'letting off steam" and being rather rough. Girls seem to be happy painting pictures, playing with play-dough, reading books, and doing puzzles. It seems more challenging to get the boys to settle down and focus on more quiet activities, whereas girls seem to be able to concentrate better, and are able to focus on more exact, challenging activities.

One of the motivations for this research choice, is the concerns that some parents have shared with me. They are concerned that all their boys want to do is run around outside, that they never want to sit down and focus on "school work".

I want to be able to give these parents some answers as to why their boys need the outside rough and tumble time, and to research answers on **why** they may indeed need that time, so that I can reassure the parents that their boys will develop to their full potential, and that rough and tumble play time is not a waste of time, but rather an essential part of their boys development.

Therefore, I aim to carry out searches to find research on the differences between how boys and girls learn, and also whether or not there are differences between how their brains develop, which could potentially explain the difference in how they play and learn.

Research questions

1. Is there a difference between how boys and girls play and learn?
2. If indeed there is a difference in the way boys and girls learn, what teaching strategies can we adopt to better cater for boys?

The benefits of make believe play

Make believe play is an important way for children to develop socially and cognitively, as well as make friends, and help them to make sense of their world, and to provide a way for children to work through things that they are worried about (Scarlett, Naudeau, Salonious-Pasternack, & Ponte, 2004). It also provides some background about make believe play at the early childhood/preschool level.

> *When young children engage in joint make-believe, they foster the most important of all social skills: thinking about others' thinking. Joint make-believe gives them practice in taking perspectives, or so scholars have assumed. Furthermore, when young children construct a full-blown story in make-believe, a story with different characters and scenes, they create characters with different points of view. In sum, make-believe provides an important context for developing social skills (Scarlett, Naudeau, Salonious-Pasternack, & Ponte, 2004, p. 60).*

The authors also talk about gender differences in play, and believe that as toddlers, boys and girls happily play together but then as boys get older they tend to separate into groups of just boys, and carry out rough play together. Parents and teachers need to understand these benefits, so that they learn that play in early childhood is not a waste of time.

Helen Fletcher carried out research through observations at Stimpson Avenue School, (in Northampton in the United Kingdom,) of children playing with the Make a World technique, created by Lowenfield in 1950, in which children are given a large tray of sand, and assorted toys and objects to play with to make a mini world. They are recorded and observed doing so, and the results interpreted as to how much of their play is sensorimotor, cognitive, socio-communicative, imaginative/creative, or emotional development. The findings showed that there was no real difference between which type of developmental play exhibited by boys or girls during this experiment, although the author did point out that it was a limited study, and differences may well have been discovered if the children were observed in a different context, such as out in the playground (Fletcher, 2004).

Gender differences in preschool aggression

A study by Ostrov and Keating (2004) showed that boys were indeed more physically violent than girls, however girls displayed more relational aggression than boys.

> *Consistent with current thinking, behavioural observations revealed that preschool boys and girls relied on different aggressive tactics when interacting with peers during free play. Boys exhibited more overt (physical and verbal) aggression than did girls. Girls displayed more relational aggression than did boys. As victims, children received more physical and verbal aggression from male playmates and tended to receive more relational aggression from female playmates (Ostrov & Keating, 2004, p. 16).*

The importance of rough play

Carlson (2011) talks about how important big body, rough play is, especially for boys. Rough play enables boys to burn off excess energy, allowing them to then settle down and better focus on quiet classroom work when the time comes. Carlson suggests, ”Rather than forbidding rough-and-tumble play, which can aid in increasing a child's social skills, teachers and parents efforts are better directed towards supporting and supervising this type of play, so that young children's social skills and friendship-making skills can develop” (p. 19).

I love the idea of letting boys be rough, and contrary to popular belief, rough play does not often turn into violence, but is simply a group of children enjoying using their big muscles to wrestle, play fight and have fun together. In my experience, I have indeed found that if the boys are given rough and tumble time to burn of their seemingly endless excess energy, they are then able to sit down quietly at mat time and listen to a story.

The gender of ECE teachers

Wardle (2007) proposes a number of ideas on how to better serve the needs of boys in our education programs. One suggestion he makes is to increase the number of men found in the early childhood sector.

> *Boys often struggle to be successful in our early childhood programs. This is no accident. Our programs provide a goodness-of-fit for girls because most caregivers and teachers are women, and the field of early childhood reflects a female culture. This leads to environments, activities, curricular plans, and interactions that tend to match up better to what girls enjoy and are good at doing. But boys have some needs that are distinctly different from girls. If we truly believe in educational equity, we must find ways to help boys be more successful in our programs (Wardle, 2007).*

Parry (2010) talks about how the majority of kindergarten teachers are women, and that this has led to a low tolerance for boy's violent play and rough housing, and that not allowing the boys to play in such a way may be harmful to them. This article the gender of the teachers may affect whether or not boys are allowed to play rough.

> *While some educators prohibit this behavior, other educators and researchers claim that banishing violent play from classrooms can be harmful to boys. It's a debate entangled in gender issues, since nearly all early-childhood educators are women, and they may be less comfortable than their male counterparts with boys' impulse (Parry, 2010, p.1).*

He also notes that providing large outdoor play areas or open spaces to allow for more rough and tumble play, commonly has a lower priority over trying to add IT equipment such as computers and laptops to the classroom.

The differences between girls and boys brains

There has been a lot of research done on the differences between boys and girls brains, and that boys simple behave differently than girls because their brains are “wired’

differently. Perhaps this is why boys learn in different ways and at a different pace than girls.

James (2008) talks about how boy's brains are simply wired differently than girls, and take longer to develop. This means that teachers need to implement a number of teaching strategies to cater for boys and improve their chances of success, from incorporating movement and more hands-on activities, to relating the subject to more current or real events, in order to capture and retain boys interest.

In 2006, Gina Holland researched what was happening in classrooms in Australia and New Zealand, and wrote very highly of the Boys in Schools Programme, started in Australia through the Family Action Centre at the University of Newcastle. This programme had identified that there are three very important areas to focus on in order for boys to succeed: identity, learning and relationships. Holland went on to recommend that teachers work hard to better cater for the learning styles of boys, through providing a more practical, visual and tactile way for boys to learn, which allows for physical movement and interaction, and allows boys to express their feelings and emotions through actions rather than verbally.

King and Gurian (2006) suggest a number of teaching strategies designed to help boys achieve greater success in school. Strategies such as allowing the boys to choose their learning topics, allowing for more kinaesthetic and physical learning opportunities, providing strong male role models and cresting single gender learning environments, have all been proven to improve success rates for boys, at Douglass Elementary School in Colorado, USA.

Gurian and Stevens (2010) summarize ten ways to help increase boys chances of success at school. These strategies include: providing skills training for homework, allowing children to choose at least 50% of what they read, having the teachers get up and walk around the classroom, and having a culture of male mentoring through all parts of the school.

Methods

This research was a piece of Qualitative research, in that it is attempted to make sense of human behaviour- whether or not the teachers in Rarotonga think that boys play and learn differently than girls. It was a phenomenological study, in that it gathered the opinions of early childhood and grade one teachers on the subject of whether or not there is a difference between the way boys and girls play and learn.

The goal was to gain some insight on the subject of boys behaving differently from girls and having different learning and teaching needs; to open this topic up to the wider teaching community. I carried out a survey and interviews of ECE and grade one teachers here on Rarotonga to gather their thoughts and opinions on the subject and to establish

whether or not there are specific teaching strategies that they have put in place in order to cater for the different learning needs of boys.

To analyse the surveys, I use open coding to look for similar responses to my questions, then axial coding and selective coding to find patterns in the teachers responses. I looked for common themes in their answers, and summarized what the majority of the teachers think, with regards to the differences between how boys and girls play and learn

I delivered the survey to a total of 18 early childhood teachers and 4 grade one teachers here on Rarotonga, from a total of 11 early childhood centres and/or primary schools. This represents approximately 95% of the early childhood teacher and teacher aides on Rarotonga. This netted 22 returned questionnaires.

Results

The following is a summary of the responses, set out as per each questionnaire question:

Question 1: In your experience as a teacher, have you noticed any differences between how boys play and learn, compared to girls?

One respondent answered "no". Fourteen answered "yes." While the remaining 6 did not say yes outright, they indicated their opinion that boys indeed do play differently than girls by explaining the differences that they have observed between the way boys and girls play at their ECE centre.

That is a resounding positive result, confirming that here in Rarotonga, the majority of our ECE teachers think that boys play and learn differently to girls.

Question 2: Have you noticed any differences between how boys and girls interact with their peers?

Again the majority have noticed differences between how boys and girls interact with their peer, with the most common comment being that boys are rougher in play and more physically active than girls. This supports Wardle's article (2007) on boys needing rough and tumble, physical play.

Other comments that came out include that boys are more active, more bossy, more confident, less likely to share than girls and are more likely to play with other boys, rather than play with girls.

Question 3: Do you treat boys differently from girls in your class?

18 out of the 22 respondents said that no, they do not treat boys differently in their class, that the boys and girls are treated the same.

3 out of 22 said "sometimes" they treat boys differently.

1 out of 22 said "yes", they do treat boys differently than girls in their classroom.

<u>Question 4</u>: Have you noticed that boys do anything more than girls do?

There were a large number of different answers to this question, represented in the table below:

Activity that boys do more often than girls	Number of respondents that mentioned this activity
Physical play	9
Following the girls	3
Being competitive	2
Being more playful	2
Taking risks	2
Variety of activities	3

<u>Question 5</u>: Are there any particular toys or games that boys play more than girls?

One respondent answered "yes", but then did not elaborate on what these toys or games were. Two respondents answered "no". The remaining respondents mentioned a number of different games that boys play more than girls:

Toys or games that boys play more than girls	Number of respondents who mentioned that game
Guns	6
Sand play	3
Trucks	6
Cars	3
Bikes	2
Balls	4
Blocks	13
Physical activity e.g. running	2
Superheroes	4
TV influenced games	5
Water play	1

The above table illustrates boys love for guns, super heroes and TV influenced games. These findings reflect the observations made by kindergarten teacher Jane Katch (Parry, 2010) in an article about boys and violent play. Katch talked about how simple everyday objects are often transformed by boys into imaginary weapons, guns and other super-hero inspired objects. She has since "learned to work with, rather than against the violent boyhood fantasies that accompany these transformations" (Parry, 2010, p.1)

<u>Question 6</u>: Any other comments/observations that you would like to make?

This question offered up the opportunity for the participants to add anything else that they think is relevant to the topic. The responses were varied, and included:

- *Every child learns at their own pace and learns through whatever activity that they are doing.*
- *We all treat boys and girls equally.*
- *Boys mingle with themselves mostly.*
- *Boys find it harder to follow instructions*
- *Parent's interactions with their child affect how well their child is able to play and interact with other children.*
- *If we allow children to make their own decisions on what they choose to play with there should be no gender issues.*
- *Boys are less affected by what their friends do or say; girls are more sensitive.*
- *Boys get lazy as they get older.*
- *Boys are generally less focused and more tactile*
- *It's up to the teacher to be more creative.*
- *Boys should be encouraged to play with girls.*
- *ECE centres need more resources.*
- *As time progresses, changes in culture and attitudes to child rearing will affect parents expectations for both their children and for the teachers.*

<u>Question 7</u>: How long have you been teaching?

There was a wide range of results when it came to how long each respondent had been teaching, as represented in the table below:

No Response	0-5 years	5-10 years	15-20 years	20+ years	30+ years
1	7	6	5	1	2

<u>Question 8</u>: What is your highest teaching qualification?

Qualifications of the teachers interviewed ranged from no formal teaching qualification at all, to two teachers having a degree, as outlined in the table below:

Not answered	No formal qualification	Certificate	Diploma	Degree
1	4	8	7	2

Five of the certificate teachers are currently studying towards their ECE Diploma.

Implications and Conclusions

There is no doubt that the ECE teachers on Rarotonga have noticed differences between how boys and girls play and learn. There is a vast knowledge out there on what toys boys seem to prefer to play with.

In some ways it is good to know that the teachers treat girls and boys the same in their classroom, which means that there is not discrimination due to the sex of the child.

However, statistics have shown that boys are not succeeding as well as girls in the older age groups, so maybe it is time to treat boys a little differently from girls, in order to give them a greater chance to succeed.

I passionately believe that early childhood is the most important sector in every child's education- if we do our best at the early childhood level to instil positive learning dispositions in every child, to have them moving onto primary school as competent, confident, motivated young learners, they will have a huge chance of success in their subsequent primary, secondary and tertiary education.

I believe the next challenge is to implement teaching strategies in early childhood, that do more to boost the confidence and happiness of boys, that allow them to play and learn in ways that are beneficial to their holistic development, and that will set them up as motivated, engaged, interested young learners, ready to move on to succeed in primary and secondary school.

My teaching strategies for boys in early childhood education

Get to know the boys at your centre, find out what they are interested in and plan learning activities that exploit those interests. For example, if the boys show an interest in dinosaurs, make or buy colour charts and counting charts that feature dinosaurs.

Allow the boys plenty of outdoor play time to run around and let off steam. Rough play should be allowed, as long as all the participants are laughing and having fun- the safety of the boys is the teacher's responsibility so the outdoor area must be well supervised.

Give the boys the freedom to choose their own activities as much as possible, perhaps giving them two options and allowing them to choose the one they want. This will empower them, and motivate them to participate.

Boys love messy, hands on tactile play. Let them do finger painting, hands prints, water play, mud pies, play dough and other such play activities that stimulate their senses

Take the time to talk to and LISTEN to the boys in your class. Let them share their ideas and do your very best to accommodate them wherever possible. Listen to both side of the story when conflicts arise- boys need to know that their voice will be heard.

Comfort boys when they are upset and give them cuddles and affection. I believe they need to learn that it is ok to express their emotions and to cry if they are hurt or upset.

Praise the boys for positive behaviour, try not to focus on the negative. Treat each day as a new day, without expecting certain boys to misbehave. Try not to "typecast' or label a boy as being a naughty boy, otherwise it will become a self-fulfilling prophesy and he will indeed be naughty..

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The Importance of Early Childhood Education

Marise Henry, Apii Avarua ECE Centre, Rarotonga
Nileshni Chand, Imanuela Akatemia ECE Centre, Rarotonga
Nooroa Tamangaro, Apii Arorangi ECE Centre, Rarotonga
Mami Omao, Apii Nikao ECE Centre, Rarotonga
Columba Henry, St. Joseph ECE Centre, Rarotonga
Theresa Noovao, St. Joseph ECE Centre, Rarotonga

Context and Research Focus

This Action Research study was conducted by a cluster of ECE educators and aimed to examine the factors that influence the Importance of Early Childhood Education (ECE) and how these factors can assist us as ECE Educators to reflect on our current practices and make appropriate changes that befit the importance of our work with children in our care at our ECE Centres.

Early Childhood Education is a branch of education which relates to the teaching of early childhood children; children from birth to eight-year-olds (Hughes, 2000). For the purpose of our research, early childhood education refers to those of three (3) to four (4) year olds. The reason is that three to four year olds are ages that are catered for at the ECE Centres in the Cook Islands, before entering Grade (1) at the age of five years old. (Apii Tamariki Potiki Early Childhood Education Curriculum Document , 2005). Cluster members researched the responses from Early Childhood Educators here in the Cook Islands through discussions, face-to-face interviews and questionnaires. They also researched online to gather factors given by scholarly early childhood educational institute and or specialists on the importance of ECE. It is anticipated that through this research, we would respond to the question of "Why is early childhood education important?" and how we as ECE Educators will reflect on our current practices and make improvements that will echo the importance of ECE.

Methods

Cluster research participants were from Avarua, Arorangi, Nikao, Imanuela and St. Joseph ECE Centres. Discussions within cluster as well as with parents, Care-givers, Principals, Teachers and ECE Educators were held, questionnaires were formulated and distributed to the same. A complimentary question was added to include Cook Islands to the Research Question: "Why is ECE important for the Cook Islands?" Early Childhood Education Books, inclusive of the University of the South Pacific Units were referenced.

Online Internet Research was also carried out by each member. The results were discussed and summarized giving closure to our Research.

Literature Review

In research conducted by the Perry Preschool Project in the 1960's for African American children born in poverty and at high risk of failing in school, it was found that those who went to preschool performed much better than those that didn't attend preschool. They were more likely to have graduated from high school and had higher earnings (highscope.org, 2015). This research reflects the importance of early childhood education for young children despite their backgrounds,

The development of the holistic skills at early childhood education forms the measure of the whole child. Physical, Social, Emotional, Cognitive and Language skills form the checklists of development milestones for early childhood children (Hughes, 2000). Social and emotional self-regulation are key to school readiness and convincing evidence exists that high quality ECE centres contribute positively to factors such as high-self-esteem, motivation and positive social behaviours (Hughes, 2008).

Working with Infants and Toddlers (Graham, 2006) states that experience plays a crucial role in 'wiring' a young child's brain. Experiences form connections of brain neurons called synapses. If they are not used repeatedly or often enough they are eliminated.

In Maria Montessori's book, '*The Absorbent Mind',* she expounds "that man begins mental growth at birth and pursues this with the greatest intensity during the first three years of his life" (Montessori, 1984). This mental growth is well supported by a new research on the development of a child's brain by two leading researchers in this field. Dr. Patrick Kuhl, a Professor of Speech and Hearing Sciences and Co-Director of Learning Sciences at the University of the Washington, have included a video on the amazing evident that 'earlier is really better'. Starting early makes it easier for a child to learn in later life (nbcnews.com, 2015).

Montessori further expands on the importance of giving active care to the children (Montessori, 1984). This reference supports the importance of active care by early childhood educators and caregivers in an appropriately prepared environment.

Another research report shows that early education has proven to increase graduation rates. These increased rates contribute towards quality workforce and healthy economy for a nation (earlychildhoodeducation.blogcommunity.com, 2015).

In another research study, which included the development of an infant's brain from birth, the results vividly showed the development of synapses as a result of early interactions. This points to the importance of early childhood education where, here in the Cook Islands, children of 3 – 5 year-olds are admitted into ECE Centres.

Results

Feedback from parents and teachers were mostly positive. Most parents' responses attested to improved developments in terms of social and language skills. ECE is important for families in socializing children, prepares them for pre-reading and writing and develops holistic skills. Through singing and rhymes and themed activities, children interact with both their peers and adults in their environment, they problem solve and they become articulate. Most importantly, early childhood education theme and activities are well suited for inclusive learning and development. For these reasons, ECE is good time to determine the learning needs and seek out appropriate intervention.

Some parents also commented on their own experiences. For instance, new mothers who are new at ECE Centres say they have learnt a lot from 'mother helping' and that the time at ECE has been good learning for them and their children. Working parents commented that ECE allows them to return to the workforce, which was beneficial to their family.

On the non-positive side, some parents commented on the need for more resources at their children's centres.

Feedback from fellow educators or teachers indicated that ECE is important as they lay the foundation for lifelong learning. They also reflect children's readiness and skill development. A response from a school Principal indicate ECE's immense contribution to a child's physical, emotional, social, intellectual and speech development; these are the holistic skills that are the main aims of ECE Educators. These responses continue to indicate that at ECE, children's learning experiences are increased as they are continuously stimulated to explore their potentials – to learn what they are capable of doing for themselves. Furthermore, with play-based learning, children learn new skills and enhance the development of their fine and gross motor skills.

In response to the complimentary question "Why is ECE important for the Cook Islands?" educators' responses indicate that most of the parents in the Cook Islands do not have sufficient skills or knowledge to help in the development of their children in their homes. It is not that they are incapable but rather that they are just not equipped or taught how to help their children in their development and this is where ECE comes in. Additional responses suggested that ECE builds on what parents may lack in terms of developing children in their early years to expand, to enhance and scaffold children's existing knowledge and experience. In further reference to the importance of ECE in the Cook Islands, there is mention that for some young people becoming parents, they are ill-equipped to help their young children in the areas of health and development. ECE is very important in these instances to assist in their children's holistic, health and sensorial developments.

Of notable interest on the Cook Islands, are responses that associate the contribution of ECE to the healthy economic growth of the nation through the development of human resources, that through early education, the nation can have good leadership to lead with vision and wisdom.

In summary, some identified factors that influence the 'Importance of Early Childhood Education' include its suitability for inclusive learning since ECE is an opportune time to seek out appropriate interventions for learning needs. In addition, the various experiences at ECE level allows for brain development at an early age. Children who attend ECE are socialized and will transition confidently into formal schooling at Primary school level. Finally, ECE offers parents the opportunity to return earlier to the work force and contributes to a healthy economy by laying the foundation for life-long learning.

Conclusions and Implications

In sum, we conclude that ECE **is** important for the Cook Islands for the benefits identified. We acknowledge that our studies have limitations. Firstly the time allotted is not sufficient to have detailed discussions with the majority of the ECE Educators to delve deeply into their developmental successes. Secondly, our focus group may represent views and values that are in the positive support of our Research Questions. Finally, we recognize that in order to demonstrate our belief that Early Childhood Education is important, we as Cook Islands ECE educators need to provide high quality practices in a well prepared environment. For it is here that the child will freely act upon to shape the man that he will become!

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The Challenge of Teaching Maori Language in ECE

Marama Denny, Apii Rutaki ECE Centre, Rarotonga
Teokotai Taio, Apii Arorangi ECE Centre, Rarotonga
Ellen Paquis, Imanuela Akatemia ECE Centre, Rarotonga
Mary Vakatini, Apii Nikao ECE Centre, Rarotonga
Tungane Rasmussen, St. Joseph ECE Centre, Rarotonga

Context

This research aims to face the challenges of teaching Te Reo Maori in our ECE centre. There are different aspects which we as ECE teachers have encountered in delivering teaching techniques.

Te Reo Maori is an important part to preserve our culture and language. Therefore this research is set out to find effective ways to teach Maori language applicable to our ECE centre.

Research Question

What simple techniques can an ECE teacher practice to teach the Maori Language for the children to enjoy and embrace?

Methods

In every centre there are different challenges in teaching Te Reo Maori. All teachers involved in this research have listed down the challenges they are facing in their classroom. We have decided to focus on the one challenge of teaching Te Reo Maori. In every centre teachers encounter numerous barriers and challenges in teaching the Reo Maori. There are different challenges in teaching Te Reo Maori. Information gathered and compiled highlights the different challenges and appropriate techniques.

This research will outline the challenges and some applicable strategies considered as long term solutions to support the teaching of Maori. What to apply in teaching Maori inside the classroom the clarification of implementing short term and ongoing solutions is each individual's decision. We consider the short term or ongoing solution.

Findings

ECE Centre	Challenge(s)	Strategies/Solutions – Long Term
Imanuela Akatemia	➢ Teachers are not Maori Speaker ➢ Parents don't speak Te Reo Maori at home ➢ Students with different nationalities	➢ Teach the students the importance of using the Maori language ➢ Encourage them to embrace it (positive reinforcement) ➢ Teachers should embrace Maori language and have the passion to teach it ➢ Make it part of the ECE curriculum to have Maori day for the students ➢ Motivate students to speak Maori Language ➢ Encourage repetition during mat time ➢ Encourage Te Reo during kai ti time ➢ Include Te Reo Maori in your learning stories/portfolios/newsletters etc. ➢ Refer back to your own schools mission and vision statements and goals ➢ Language of Instruction ➢ Simple expression in local dialect e.g. Ka kite, Aere mai ➢ Visit an outer Island centre for observation
Rutaki / Arorangi	➢ Not all children are Maori speakers ➢ Parents use Te Reo Maori towards adults more than children at home ➢ Translating English into Maori ➢ Writing Maori into English ➢ Finding the right vocabulary	
Nikao	➢ Parents are not speaking Maori in their homes ➢ Parents are not full Cook Islander's ➢ Parents' high expectation to teach their children Te Reo Maori but when the children go home they speak English. ➢ Making resource for our parents to learn how to speak Maori.	
St Joseph	➢ We promote Te Reo through our Faith Journey at Mass through songs, prayers and story-telling. ➢ Throughout the week, teachers speak Te Reo and English to the children. ➢ 1 x morning a week is set for pure Te-Reo Maori for ECE 2 ➢ Every Friday is Te-Reo Maori Day for ECE1	➢ Continue with our Te-Reo Maori in our Faith Journey; through songs of praise, prayers and stories. ➢ Culture Days we promote songs and legends ➢ Our Parents Night this year is very much in the Reo as we celebrate the 50th Anniversary ➢ When we invite speakers that we ask them to present in Maori ➢ That teachers converse more in Maori at school ➢ Increase current schedule to double for Maori time
TECHNIQUES		
SHORT TERM/ON GOING SOLUTIONS	1. Through music, stories, activities, instructions and greetings 2. Naming everyday object, 3. Poster on walls(Maori Environment) 4. Through visual aids including the hyphen & dash, macron 5. Have Maori day that they will learn the simple Maori words 6. Oral repetition 7. Inclusion in teaching/learning stories	

Implications

This research offers possible solutions to enable us to overcome the great challenge of teaching Te Reo Maori. The most important is self- trust and being truly passionate in teaching it and imparting it in our children. Hindrances will always be there. Practicing different ways of planning, using effective teaching techniques and strategies in our daily routine will help minimise the gaps in delivering and teaching Te Reo Maori. If we plan for it and apply in our classroom without delay all the techniques we know, then our children will be drinking in a flowing river. Sufficient implementation of daily Maori practices will help the flow of the language within adults and children.

I am always sorry when any language is lost, because language are the pedigrees of all nations.
-Samuel Johnson

The Challenges of Recruiting and Retaining ECE Teacher Aides

Tania Akai, Ministry of Education, Rarotonga

Context

This research focuses on a number of challenges faced especially by ECE teacher aides. Staffing policy allocates either a qualified teacher, an ECE aide or both depending on class size. A total of 12 ECE Teacher Aides were recruited in Cook Island Centres during 2015.

Teacher Aides are as important as the Lead teacher in a Centre. They provide much needed support to classroom teachers and students. ECE teacher aides are instrumental in providing instructional support and likewise enriching the teaching of lessons by providing support to the teacher and students on a consistent basis. Assisting students in successfully learning the daily lesson objectives is useful to reinforce targeted skills to small or large groups of students. Planning future lessons to contribute to daily learning is also required by ECE teachers and this provides an opportunity for training while on the job for ECE teacher aides. As stated in the MOE Workforce Plan 2014-2024, the demand for ECE Aides is expected to increase and, given the nature of the tasks they perform, it is reasonable to expect that, with retirements and attrition there will be a need for 20 or more qualified aides in the next decade.

The process of recruiting teacher aides however needs strengthening. We need to prioritize this and not just take 'whoever is available', or recommendation from Principal, lead teachers in ECE Centres, and active parent committee. Instead there is a need to ensure that teacher aides can contribute quality assistance with a good educational and cultural background. ECE teachers should also be fluent in Maori as this is critical to ECE classrooms to assist and sustain the use of our language in ECE Centres.

Research Focus

The focus question of this research is on "Why is it so difficult to recruit and retain ECE Teacher Aides?"

Identifying challenges in recruiting and retaining ECE Teacher Aides required a lot of inquiry based on certain elements such as:

ECE TEACHER AIDES	REVIEW INITIATIVES
REQUIREMENTS AND JOB DESCRIPTION	Requirement when advertising ECE Teacher Aides position should be outlined. Job Description for ECE Teacher Aides to be issued on start of job.
QUALIFICATIONS	There should be a minimum standard qualification when recruiting ECE Teacher Aides.
TRAINING PROGRAMMES	USP courses and PD's is supported by MOE and is ongoing.
PAY ROLES – (PAY BAND) – role, training, experience	Re-numeration is not available for any awarded qualification or training while working in the position of teacher aide. This can be improved to retain ECE Teacher Aides.
LEAVE POLICY	Needs to be specifically clarify paid/unpaid and special leave if entitled to any?
HOURS OF WORK as that of lead teacher – 'team planning, workshops, staff meeting, PD's, being a part of the Staff and School Community'	As ECE Teacher Aides are paid 3hours, most PD's, meetings, workshops happen after their working time. Is there possibility of slotting this time on their pay role?

Methods

Data collection for this research included:

- Having informal interviews with ECE Teacher Aides and their respective principals.
- Meeting with Director HR/HRM Advisor, ECE Advisor, ECE Teacher's, ECE Teacher Aides collaboratively.
- Collecting based evidence from the MOE Workforce Plan 2014-2024
- Question sheets distributed to randomly chosen teacher aides around the Cook Islands

List of questions issued out to selective ECE teacher aides:

1. How did you become an ECE teacher aide? / What attracted you to become an ECE teacher aide?
2. How do you feel being in the profession?

3. Do you have an ECE Job Description? If yes, does it outline clearly your job to that of the teacher in your centre? If not, why?
4. What do you think of your hours of work?
5. How about your pay band? Do you think it should be reviewed?
6. Attending after working hour PD's, should you be attending? If Yes or No, please state reason(s).
7. USP courses are very vital in your work to help enhance your knowledge in ECE teaching. Do you want to comment on this? Negative/Positive please state reason(s).
8. How do you think the MOE should help in the way of supporting you in your job apart from what already exists?
9. Do you have any queries or comments you want to express about job? Challenges/Issues? Please feel free to write them down.

Results

ECE teacher aid survey

The majority of ECE teacher aides have been recruited through the system of in many ways. Some took up the profession by being asked by lead teachers, participating parents, or even by being there as a mother themselves and saw the need of a teacher helper in the centre. Some took it as a means of income to support their family.

The allocated time of work is comfortable, however the expectation of being expected to attend after hours PD's and USP courses is sometimes adding extra load to the job. One teacher aides stated that the workload can be a bit too much at times. In addition, teacher aides sometimes feel that they are looked down upon in the profession, which can be undermining for an individual.

ECE teacher aides strongly believe that incentives or increment in pay should be part of the initiative when passing USP or study courses even though taking the course is being funded by MOE. Enlightening and enhancing ECE teacher aide's knowledge, confidence and sustainability through such PD's is vital in this profession and the increased skill and knowledge should be acknowledge through an increased increment in pay.

Most ECE teacher aides have training on the job to be qualified and are comfortable being helpers in the Centre. However, there are issues and challenges they face when asked to take up extra tasks. This may include contributing to the compiling of student portfolios, writing up learning stories and preparing daily activities which they have little knowledge about. At times they look after the centre while lead teachers are allocated to other tasks within the school itself.

This research indicates barriers and gaps that needs to be addressed. Collaboration work within the system of early childhood education should be strengthened to allow quality, high standard of recruiting and retaining ECE teacher aides.

Working as a teacher aide can be a stepping stone to a job as a lead teacher in the classroom or ECE Centre. Status, recognition, pay parity are just some of the important elements contributing challenges in recruiting and retaining ECE teacher aides.

Up-skilling of Teacher Aides – MOE WORKFORCE 2014-2024

Arising from Learning and Teaching staff discussions of preliminary drafts of this report, there may be a real benefit from:

- a review of the policy and practices for hiring and training ECE aides
- the development and implementation of policy and practices to enable teacher aides to progress upwards on the salary scale, and to move forward to a teacher training program should they so desire
- Implementation of a mandatory minimum training program in developmental education and sound teaching pedagogy for teacher aides. This could initially be an in-house, in-service program to up-skill existing aides and pre-train candidates for future positions.

Implications

The findings clearly shows that one major dispiriting barrier to recruiting and retaining ECE teacher aides is low pay. To be able to consistently recruit and retain highly skilled ECE teacher aides, there needs to be parity of pay with incentives for increasing knowledge and skills. ECE teacher aides are employed into a challenging environment for the purpose of nurturing children's curiosity and fostering learning, therefore they are as important as the lead teacher. To invest in quality personnel in early childhood education is very important and comes with many challenges. However, such an investment would be worthwhile to attract ECE teacher aides to sustain their profession. One crucial way to retain more of these ECE teacher aides is to pay them well including the extra hours they invest for attending PD's and Meetings and offer incentives for up-skilling.

Technology in Teaching: Does the Implementation of Laptops as Teaching Tools Enhance the Work of Teachers at Tereora College?

Ngatutai-Annie Tearetoa, Tereora College, Rarotonga

This article is an edited summary of a mini-thesis submitted to the University of the South Pacific in partial fulfilment of the requirements for a Masters of Information Systems.

Context

Cook Islanders enjoy the privilege of being New Zealand citizens. This makes Cook Islanders an unusually migratory people with frequent travel between, and residency in the two countries. As a result it is not sufficient for Cook Islanders to meet some arbitrary "Cook Island Standard". They must be educated and equipped to function effectively in both countries. The provision of laptops to all Tereora College teachers was a deliberate move by the Ministry of Education to create a teaching and learning environment to foster this goal.

The purpose of this study was to analyse and evaluate the implementation of laptops as a teaching tool to enhance the work of teachers at Tereora College in 2015.

Research Focus: Literature Review

Much of the existing research on technology in teaching relates to learning environments in large nations with extensive and complex school systems. These countries have very different cultural norms to Pacific Island countries in general and to the Cook Islands in particular. This study is important because it adds the small Pacific Island and Cook Islands perspective to the existing body of knowledge.

A review of the literature shows that using Information Technology (IT) in the Pacific Islands faced a multiplicity of challenges ranging from corrosion issues arising from a hot, humid and salty environment, the cost and difficulty in obtaining replacement parts, the lack of expertize in equipment upkeep and the lack of reliable internet access. A study in 2013 found that in the US-affiliated Pacific States, computer labs in public schools were found to be mostly in a state of disrepair and without internet access.

Two South Pacific studies, one on Niue Island and the other in the Solomon Islands, provided addition information and impetus for this research.

In 2008 a One Laptop per Child (OLPC) study was begun in Niue and laptops were provided for all students and teachers. After a period of initial excitement and

enthusiasm, and early reports of improved confidence and knowledge on the part of teachers, and increased interest by students, the programme began to flounder. Teachers had problems with the technology, with printing and network issues, and over time, increasing numbers of laptops were broken and unrepaired and by 2010 the project had been abandoned. A review of the project showed that teachers had not been involved in the planning and implementation, that they had little idea of the purpose of the project and that they felt rushed in to the programme. Further, apart from very limited training in computer use, no professional development or guidance on how to use laptops in teaching was given, and no technical support to maintain the equipment was provided.

An OLPC project in the Solomon Islands carried out in 2008 reported much more positive outcomes with teachers. Teachers felt they had better access to information improving their ability to plan and deliver lesson. Access to the technology reduced their planning workload enabling more time to be spent with needy students, and the technological assistance meant teachers could create extra activities for faster students.

Teachers also reported that the computers enabled them to record and store student data, send homework home, better communicate with parents and generally make communicating and writing faster and easier.

In contrast to the Niue project, in the Solomon Islands project teachers and students received training prior to the implementation of the project and a project officer was assigned to provide technical support and ongoing training throughout the programme. Notwithstanding the improved training in the project, in their evaluation of the project teachers noted a need for additional training on: (a) adapting the curriculum so that it "worked" with computers; (b) technical expertise to enable them to create or install programs, use the internet, email, and set up networks, and (c) training in computer maintenance and repair.

Recommendations from the program included ongoing training in the incorporation of curriculum into computer based lessons, and on how to address minor technical problems. A further recommendation was that all school have local technical support.

Other research on IT integration suggest that teachers evolve through a slow process from:

1. Improved learning, but not changing their teaching practices; to
2. Incorporating IT into their current teaching; and finally
3. Using technology for major changes in their methods of teaching.

Additional research shows that teachers were more likely to see the connection between their subject and technology if stronger content specific examples were used, and other

studies show that strong pedagogical knowledge is a fundamental prerequisite to the successful implementation of computers in the classroom.

Research suggests that pedagogical knowledge is more important than technical skills and, therefore, the more teachers know about how students learn, the more they are likely to try new teaching strategies to cater for different learning needs. Further, studies show that successful professional development for IT integration needs to:

1. Focus on content (technology, knowledge and skills)
2. Enable teachers to do "hands on" work
3. Ensure that professional development is consistent with teacher needs.

Research Focus: Personal

As a teacher with a strong Information and Computing Technology [ICT] background teaching at Tereora College, I have watched teachers struggle with the implementation of technology in their classrooms, especially following the provision of laptops to all teaching staff. Discussions with my colleagues prompted a number of questions:

- Do teachers have adequate ICT training?
- What is the problem?
- Are there unresolved network issues?
- Is there student interest in technology supported instruction?
- Are the laptops adequate for the task?
- Do teachers have the knowledge and skills to integrate ICT into their instructional practice?
- Do we need an ICT administrator dedicated to teaching and learning?

The questions seemed to have no easy answers so I decided to focus on what I see as the central issue, namely: **Does the current use of computers at Tereora College enhance the learning experience for students?**

Methods

The research participants were 27 teachers at Tereora College in Rarotonga, Cook Islands. The college has 45 teachers, aged from 24-55, 24 of whom are female and 21 are male. Twenty seven of these teachers voluntarily participated in the completion of a questionnaire and did so anonymously; the ages, genders or ethnicity of the participants was not determined. Six teachers agreed to be interviewed to gain further insights into participant responses.

A draft questionnaire was emailed to two staff members and a retired professor to read and commented on the draft. Once their comments had been received, changes were made to the questionnaire and it was emailed to the 45 teachers who taught with laptops in the classrooms. In the email was an explanation of the research that was being carried out and what it was for. The email also asked staff members to put the completed questionnaires in my pigeon hole for collection and, in this way, their identity would remain unknown. Questionnaires were also printed and distributed in each staff member's pigeon hole in case they did not wish to use email for the research. The questionnaire also advised the teachers how to return the completed forms anonymously. This method of research was chosen because it gave teachers the opportunity to choose between electronic or paper communication. Once collected, the quantitative data were entered into a spreadsheet and results tables were created.

Findings

The table below shows the frequency of laptop use for various classroom activities.

Frequency of Activity in Times per Week						**Cumulative activity rate** per week**
	0-1	2-4	5-7	8-10	11-13	
Activity						
Create student worksheet	6	6	8	1	6	150
Print student worksheet	4	6	7	4	6	170
Create assessments	7	4	5	4	7	165.5
Print assessments	6	5	4	4	8	174
Show visual for students learning	5	5	4	3	10	188.5
Play video for learning purposes	6	8	4	4	5	147
Liaise with parents via email	15	5	3	2	2	82.5
Lesson plans, unit plans	0	0	0	2	25	318
Work related emails	4	5	6	3	9	188
Mark class roll on KAMAR*	2	1	1	3	20	277
**KAMAR is the student database, which contains information about students such as their attendance, grades and personal details.						
** Cumulative activity rate is calculated multiplying the number of teachers doing the activity by the frequency (taken as the midpoint in the range).						

From the table one can see the heaviest rates of computer use were on administrative tasks with the 27 teachers using computers for:

1. Creating lesson and unit plans: a total of 318 times – an average of 11.8 times per teacher/ week
2. Marking the class roll: a total of 277 times – an average of 10.3 times per teacher per week
3. Work related emails: a total of 188 times – an average of 7 times per teacher per week

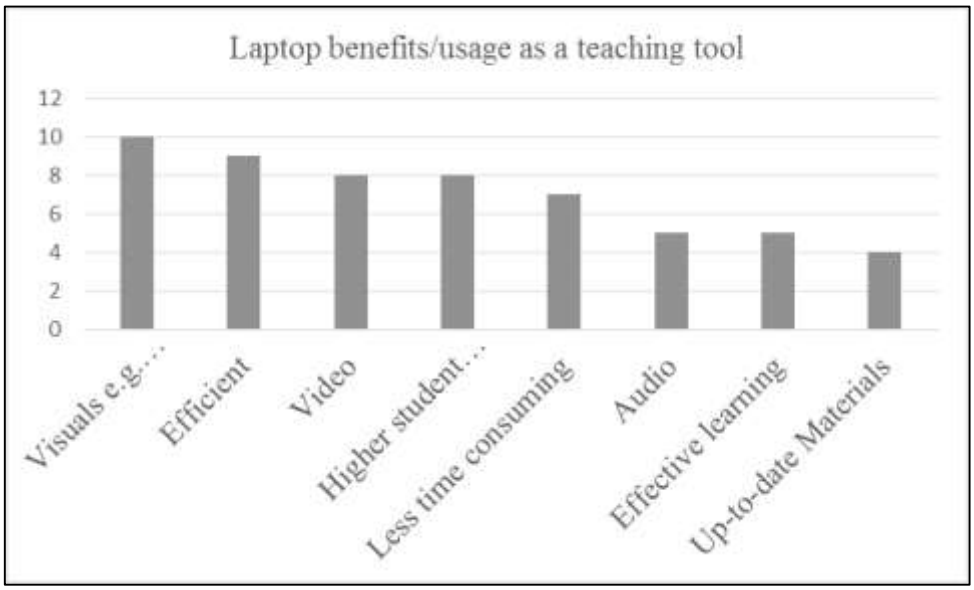
For instructional activities the frequency of use varied from 188.5 occasions per week, an average of 7 times per teacher each week, to playing videos for students' learning on 145 occasions each week, and average of 5.4 times per teacher, per week, thus, on average a teacher used computers to:

1. Show visuals for student learning 7 times a week
2. To print assessments 6.4 times a week
3. To print student worksheets 6.3 times a week
4. To create assessments 6.1 times a week
5. To create student worksheets 5.6 times a week
6. And to play videos for students' learning 5.4 times a week.

On average, teachers used email to liaise with parents 3 times a week.

It must be noted that there were variations in the frequency data and that individual teachers may have done any given activity far more, or less than the "average".

On both the questionnaire, and during the interviews, teachers were asked open-ended questions related to the advantages and benefits of using laptop computers as a teaching tool, their responses and response rates are summarized in the graph below.



Discussion

The Tereora research showed that laptops were playing a large, and ever growing, part in the lives of the teachers, and that without the computers, some of the teachers would feel lost. There were participants who relied on laptops for administration tasks, preparing for classes, and for communication with work colleagues. Additionally, there were some participants who were slowly making the transformation from manually writing their work to digitised plans.

The research found that although some teachers at Tereora College had very little knowledge and skill about the technology, and had no technical support, they were using the laptops in the classrooms and in their daily practices. These Tereora teachers were using it to mark student attendance, on-the-spot editing of lessons, and using email to liaise with colleagues as well as parents. Even though these teachers had no training, no technical support, and no professional development they took the plunge and accepted the technology.

Barriers to effective integration of computers into the learning environment at Tereora included:

- Limited skills with laptop computers
- A lack of sufficient/appropriate professional development activities
- Fear of student perceptions of their technology skills
- The lack of full time technical support for technology

The study also revealed that some teachers at Tereora College had very little knowledge about how to effectively operate a laptop. They had limited laptop skills, which could have prevented them from creating effective learning for students. Without proper laptop support or training, those participants were not able to navigate a laptop successfully. The teachers with only limited knowledge were not able to further develop plans or class activities, thereby preventing them from enhancing student learning. However, participants who had sound knowledge of laptops could cater to students' needs by knowing how to carry out effective research on the subject, creating operative PowerPoint visuals as well as knowing how to use different Microsoft office programs.

The Tereora College staff are all on email and are encouraged to utilise the program efficiently as it was the main point of contact with the principal. The researcher noticed that some older teachers, who were Cook Islanders, seemed to have difficulties in accepting the idea of using laptops in teaching. However, they have been gradually increasing their use of the equipment in response to the Ministry of Education's vision of moving with the times and new technology.

Implications

The study at Tereora College highlighted a number of issues. Firstly, the Cook Islands Ministry of Education should have integrated adequate IT support in order for laptop integration into Tereora College to have been more effective. Appropriate IT training and support should have been planned and carried out before the implementation of the technology. For example, the ministry could have run some professional development programmes for the teachers prior to the introduction of the laptops into the college. Additionally, the ministry could train one or two staff within the school to cater for the teachers' technical problems as well as having a technician from the Ministry of Education available to tend to problems that the staff are unable to fix.

This study showed that, when it comes to technology integration, the teachers at Tereora College were not very different from those in schools in New Zealand and other parts of the world.

In Accomplished Teachers: Integrating Computers into Classroom Practice, Hadley and Sheingold (1990) asserted that, one day, some teachers will manage to change their teaching and create unforgettable learning experiences with students, *despite* the institutional economic, social, political and cultural factors that may come up as distractions in their path..

This sentiment was echoed in the results of this research, which showed that Tereora College staff will keep using the laptops as a teaching tool whether or not they have onsite support, training, and professional development.

The Acquisition and Application of Basic Fact Knowledge

Mariana Mataio, Apii Takitumu, Rarotonga

This article is an edited summary of a paper submitted to the University of the South Pacific in partial fulfilment of the requirements for a Bachelor of Early Childhood Education.

Context

This research focussed on the learning and teaching strategies that year four teachers use to enable students to achieve their numeracy strategy stage in the acquisition and application of basic facts.

Students in Year Four were having difficulties knowing the basic facts in addition and subtraction. They were not achieving the expected knowledge of their strategy stage. In mathematics classrooms, however, teaching and learning the basic facts is anything but simple. Helping students achieve mastery of basic facts means that student are able to give quick response (in 3 seconds or less) without resorting to an inefficient computational strategy (Crespo, Kyriakides & McGee, 2005).

The drill and practice method has been criticized because it focuses on rote learning verses deeper understanding and thinking strategies (Baroody, 1999; Isaacs & Carroll, 1999). With the Numeracy Project currently being introduced into the Cook Islands, this provides a strong link to the strategy that supports the development of deeper understanding (Upu, et al., 2005).

A review of the literature suggests teaching basic facts through rote memorization does not foster the development of fluency. According to Kling (2011), fluency refers to the efficient and appropriate and flexible application of single-digit calculation skills and is an essential aspect of mathematical proficiency. Children use the facts they have memorized in flexible, mathematical ways to recall facts they do not know. For example, if a student did not know the answer to 8 + 5, she/he could simply think of adding 5 + 5, and then add 3 more. Here the student uses a fact she/he is likely to know (5 + 5) to recall an unknown fact in an efficient, meaningful way. Therefore it is critical that fluency is presented to the children in such a way that they understand both the English and Cook Islands Maori languages in order to learn basic fact skills.

According to Cheval (2014), communication is very important in any mathematical class as it allows teachers to convey lessons to the children and children responds to the

teachers. A classroom communication should include sharing, thinking, asking questions, and explaining and justifying ideas (Kinman, 2010). Encouraging children to ask questions to their peers and discussing amongst each other and also explaining their thinking before sharing it to others in the class has been proven to be quite effective. This may take time for children to be able to master the process as they are used to getting responses from teachers all the time and some children may have the vocabulary to verbalize their thinking. Therefore opportunities should be given to children to get used to talking and sharing with each other and coming up front to share their findings to the class.

Children should learn the basic facts because knowing them is useful both in school and out of school (Isaacs & Carroll, 1999). As children raise their proficiency at various strategies, they begin to remember the simplest facts. In addition, a strategies approach helps children organize in a meaningful network so that they are more easily remembered and accessed. For example 9 + 4 can be solved using 10, such as 9 +1, 6 + 4, and so on if the child is firm with his/her addition within 10. Otherwise he/she will use other strategies such as the number line where he/she recognizes that he/she is going to start at the higher number that is 9 and count on 4 to get 13.

As children get older they begin to use strategies more quickly and efficiently (Baroody, 1999). Therefore children learn from easy strategies to advance strategies as they grow older. According to O'Connell & SanGiovanni (2011), exploring big ideas form the foundation for the development of math fact strategies. The big ideas are: 1) our number system is a system of patterns, 2) the order of the numbers does not change the sum (the commutative property), 3) addition and subtraction are inverse operations and 4) numbers are flexible and can be broken apart to more easily perform an operation. The literature is showing that our goal is to continually reinforce the big ideas related to math facts as we help children develop addition and subtraction strategies.

Teachers should not be disappointed if the student does not adopt more efficient strategies at the start as each child perform at the rate suited to the child (Isaacs & Carroll, 1999). The teacher's role is to facilitate learning, encourage children through modelling the strategies and at the same time encouraging them to share strategies with their peers. The teacher plays an important role in making sure that the goal and objective of the class is achieved at the end of the day.

A review of the literature has supported the need for fluency and putting the value of communication at the centre of math instruction to have an exponential effect (Kinman, 2010). Teachers are the key role model in helping the children become more proficient with basic addition and subtraction facts. I hope to improve my instruction so that the children in my class would develop fluency with facts, better problem solving skills, reasoning skills, and positive attitude towards addition and subtraction.

Research Focus

The intent of this study was to guide teachers towards developing new ideas about how students learn and how to facilitate instructions that emphasize deeper understanding in basic facts achievement in addition and subtraction. This information would be used to create an instructional environment for the students. The focus was mainly on year four students attending Takitumu Primary School. Most people recognise that children should learn the basic facts because knowing them is useful, both in school and in life out of school (Isaacs & Carroll, 1999, p. 509).

The objectives of the study were to:

- Develop new ideas about how students learn;
- Facilitate verbal and written instructions that emphasize deeper understanding in basic facts;
- Determine the baseline assessment on students' progress;
- Observe students while actively engaged in their activities;
- Interview Teachers, Numeracy Advisors and Principals on learning and teaching strategies for basic facts;
- Observe classroom teachers delivering the lessons; and
- Use other relevant research to support interpretations of findings and provide further ideas for research methodology.

The following two questions were formulated from the aims and objectives of the study:

1. How can focussing my instruction on addition and subtraction strategies help fourth grade students develop proficiency with basic addition and subtraction facts?

2. What assessment tools shall I use to monitor students' progress?

Methods

Through this research I wanted to know if focussing my instruction on addition and subtraction strategies would help my students develop fluency with basic fact and if those strategies could be applied to extended facts.

In order to carry out my own instructional methods in the classroom and how they impacted my students, I conducted a qualitative type of research, a case study. A case study is an educator study and analyses the instructional strategies that a teacher uses to teach school subjects (Leedy & Omrod, 2010: p. 141-145). It was my goal to examine my instructional methods for teaching addition and subtraction in the classroom and how I could improve my instruction in hopes of helping my students become proficient in addition and subtraction.

Data Collection

I used several types of data collection during my study including a basic fact pre and post-test, a student questionnaire, a student class work and home work samples, informal interviews with students, observations on student and teachers. These instruments were used to provide data. Student's class work was collected in various ways including the strategy booklet they added to daily and practice worksheets (Crespo, 2005). These resources provided a tremendous amount of information for me to see how students were using addition and subtraction strategies and whether they were becoming more fluent in addition and subtraction. Classroom observation also provided a great way for me to analyse students' concrete understanding based on their explanation and justifications of strategies. Student interviews were helpful in allowing me to gather data from individuals. Interviews were very formal and conversational. Most of the conversations took place while the students' were working independently or in small groups. The questions I asked often depended upon the type of strategy a student used or if they needed help when using a particular strategy. The following types of questions were asked:

- Do you like using thinking strategies to solve addition and subtraction problems?
- Why did you solve that problem the way you did?
- Do you think it is easier to memorize or use a strategy to solve addition?
- Why are some problems easier for you than others?
- Which ones are easier?

Data Analysis

The data was analysed by looking for patterns where information is repeated among participants. I continually looked for emerging patterns while observing students in their activities. The data was categorised into themes such as addition strategies, subtraction strategies most commonly used by students and their attitude towards their learning of basic facts.

Findings

In the planning of my research, I was interested in how teaching addition and subtraction strategies would help my students attain fluency with basic facts. I wanted my students to build fluency with understanding, be able to choose appropriate strategies, develop problem solving skills related to addition and subtraction and deepen their confidence in themselves as being able to solve addition and subtraction problems.

Finding Their Strength

Students responded to the questionnaire I had created. One question asked if they liked mathematics. There was a wide range of answers to this question. Many reported they

liked mathematics but a few said “no” and “kind of”. I was glad to know most of the students replied positively, yet I hoped to change the minds of the others. I also wanted to know if my students spent time outside of school practicing basic addition and subtraction facts. The majority of the students wrote no and I was pleased to hear this because I felt it would really help me to see if my instruction truly is beneficial.

The questionnaire also revealed that most students thought learning addition and subtraction was important. Here are some of the responses to the question. “Do you think learning multiplication is important?”

- *Yes, if you want to be a teacher, you have to tell the student the answer.*
- *Yes, because my mama gets lost in counting her work so she ask for my help.*
- *Yes, because I want to be a shopkeeper.*
- *Yes, because addition and subtraction is part of my activities at home. Like setting the table for dinner.*
- *Yes, because I want to be the smart one.*
- *Yes, I want to be a dentist.*

It was interesting to see that many students already saw addition and subtraction as useful. One response caught my eye, when asked, “How do you feel about addition and subtraction?” the student responded, “I am very happy.” This statement was evidence of a productive disposition, an important part of proficiency in mathematics. I hoped that throughout the study all students would come to see themselves as capable learners and be happy when they were able to tackle problem. Overall the questionnaire generally revealed that my student had a positive outlook on mathematics.

Models, Patterns and Strategies

For the very first instructional activity, I had students use a number line to add 5 + 14 where they had to count on from the highest number. Most students saw the pattern of identifying the highest number. I had a very interesting case where one boy used a part-whole strategy rather than counting on. His work is shown in figure 1. Rather and 14 + 5, he thought about the problem as 10 + 4 + 5 by breaking apart the 14 into 10 + 4. Then he realized that the answer to 4 + 5 is very close to 5 + 5. He described his strategy this way, “I know my double, 2 x 5 = 10, and then I add 10 + 10 = 20 and I only had to jump back one to get to 19.” This is evidence of the big idea that numbers are flexible and can be broken apart to more easily perform an operation.

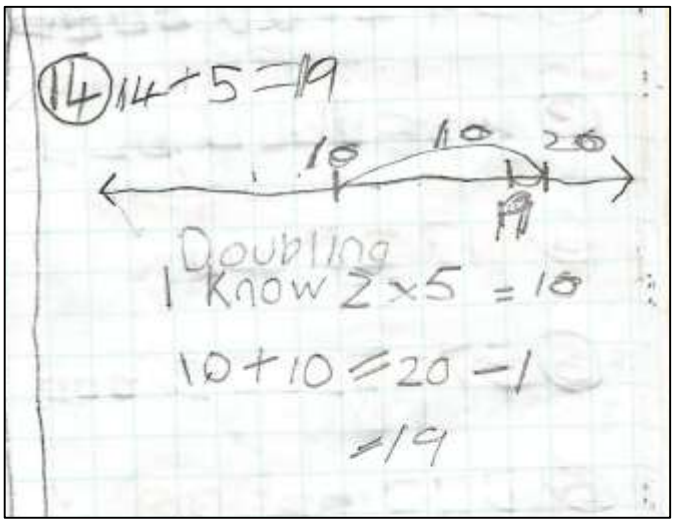


Figure 1

I observed students working in small groups, going through the instruction and drawing the number line, starting from 14 then add 5 more to get to 19. Then there was a disagreement between one group where one said, "The first number is five and how come we start from 14?" One responded by saying, "The instruction said, we had to count on from the highest number." In this sum 14 is the highest number and it does not matter where the highest number is written in the equation. This is evidence of the big idea that the order of the numbers does not change the sum.

Putting the Strategy to Use

When I asked the students to solve 16 + 90 using any strategy that they had learned so far, it was apparent the number line was the top choice of tools, while four students used the tens frames. A variety of strategies were used including counting on, doubling, and splitting numbers into ones, tens and hundreds and adding the ones together, the tens together and the hundreds together.

I wanted the student to practice what they had learned and share with their peers the new strategies and help each other. They were beginning to enjoy challenging themselves. Their discussion became much richer as student shared their strategies with the class. There would often be statements heard such, "I did it the same way" or "Wow, that is really interesting, I see why that works." The strategies they used varied from one problem to the next and were different from one student to the next as well. For example, 16 + 90, one girl use number line and split the 16 into a 10 and 6. She also imaged a tens frame to solve the problem a second way (see Figure 2).

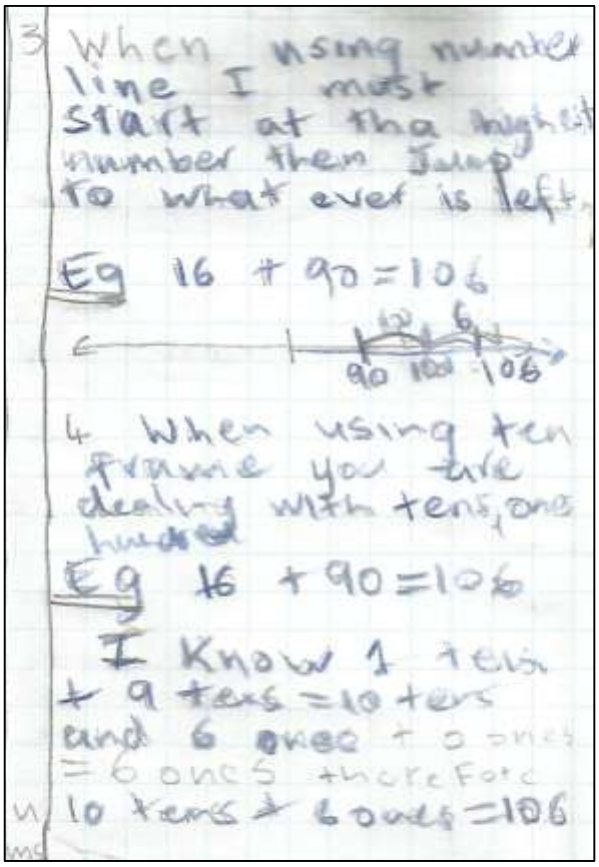


Figure 2

Implications

Overall, I learned basic addition and subtraction facts proficiency is developed in an environment that focuses instruction on deeper meaning. My students were forced to think about numbers instead of being spoon fed answers to addition and subtraction problems. Researchers highly supports the use of strategy instruction within the classroom (Baroody, 1984; Isaacs & Carroll, 1999; Cheval, 2014; SanGiovanni, 2011; Crespo, 2005; Kling, 2011).

According to Isaacs & Carroll (1999) the assessment of children's fact knowledge should be through collecting samples of student work, observations, class interviews and

discussions. That really supports what I did with my own students. The importance of instruction and practice as an opportunity to discover patterns and relationship (Baroody 2006) was evident in the data. When students used strategies without understanding, they could not apply what they had learned. Many times student just needed a little guidance in helping them use their strategies more efficiently.

This research showed that applying addition and subtraction fact strategies and knowledge to higher numbers is a challenging task. Teaching strategies for all basic facts is one way to do this. These are valuable insights to fourth grade teachers.

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Community Education: Involving Parents in Numeracy

Strickland Upu, Ministry of Education, Rarotonga
Kathryn Cheval, Ministry of Education, Rarotonga

Context

In 2005, the Cook Islands Ministry of Education (MoE) adopted the New Zealand (NZ) Numeracy Development Project as the basis for numeracy instruction in the Cook Islands for students in Years 1 – 8. The adoption of the NZ Numeracy Framework called for changes in the way mathematics was to be taught, most specifically in the number strand in the mathematics curriculum.

During the first year of implementation, teachers in Years 1-3 on Rarotonga received training which consisted of a series workshops including: an introduction to the Numeracy Framework; training on the administration of the Numeracy Project Assessment (NumPA); analysis of the data in order to group students and determine unit plans; an introduction to the knowledge domain of the framework; teaching strategies for addition and subtraction; teaching strategies for multiplication and division; and finally, teaching strategies for fractions, decimals and percentages. Following each of the workshops the numeracy advisor worked one on one with the teachers in schools to provide opportunities for co-planning, modelling and observation with feedback and feed-forward.

In the second year, the numeracy training was conducted for all Years 4-8 teachers and on Aitutaki, Atiu and Mangaia. In the third year, Mauke and Mitiaro were included. During this time, support on Rarotonga was ongoing.

After several years of implementation, the numeracy advisor noted that the fidelity of the implementation was inconsistent from school to school and classroom to classroom. Investigation of the issues indicated that the inconsistency was related to teachers' mathematical content knowledge. Many teachers of years 5 to 8 were not functioning at the Strategy Stages expected of Year 5-8 students.

In 2010, the MoE began an effort to up-skill the teachers' mathematical content and pedagogical knowledge by partnering with the University of Auckland. A cohort of 30 teachers completed a year-long paper called *Understanding and Extending Mathematical Thinking* which directly linked mathematical content knowledge and pedagogy to the NZ Numeracy Framework. In each subsequent year until 2015, a cohort of 25-30 teachers completed this paper. The Progressive Achievement Test (PAT) results

of 2013 show that, in schools where the majority of teachers of mathematics had successfully completed the course, there were significant gains in student achievement.

Despite the changes in the teaching of numeracy and the training provided to teachers, the information provided to parents was very limited and depended upon the initiative of the school leadership. Parents often commented that they did not know how to help their children with mathematics and that they did not understand what it meant that their child was at a particular Strategy Stage.

It was clear that there needed to be an effort to inform parents about the NZ Numeracy Framework. In 2012, the MoE employed another numeracy advisor to assist in the supporting of teachers, schools and the community. In 2013, the MoE numeracy advisors consulted with school leadership teams to seek out ways to better inform parents. Many principals and teachers expressed a desire to partner with the MoE numeracy advisors to host parent numeracy meetings. The purpose of these meetings would be to showcase the successful teaching and learning of numeracy and to be sure parents understood the Strategy Stages of the NZ Numeracy Framework.

Research Focus

Before embarking on this community education effort, the MoE numeracy advisors undertook a literature review. It was apparent from the research that parental knowledge and beliefs have an impact on their child's learning. A synthesis of studies indicated that there are links between parents' attitudes and beliefs about mathematics and their children's attitudes and performance in mathematics (Pritchard, 2004). In addition, parents' attitudes influence students' performance in mathematics (Desforges & Abouchaar, 2003) and their own lack of skill, knowledge and confidence, particularly in mathematics, was an issue in home-school partnerships (McNamara, et al., 2000). Furthermore, the literature indicated that *informed* parental involvement made a significant difference in their children's performance at school. Students performed better academically and had more positive school attitudes if they had parents who were aware, knowledgeable and involved (Cai, 2003; Sheldon & Epstein, 2005).

Given that the research supported the intuitive belief that parental knowledge and support were critical to children's learning, the MoE numeracy advisors began developing a plan to: inform and educate parents about the NZ Numeracy Project; help parents understand the way in which their children learned mathematics (because it was dramatically different from their own personal learning experiences); and ideas with parents to help them support their children's learning.

In designing the parent numeracy meetings the numeracy advisors used the framework described in the NZ Numeracy Project book *Home-School Partnership: Numeracy Handbook* (Ministry of Education, 2008). The Home–School Partnership concept is based

on the principles of cultural inclusion and partnership between schools and their communities. It aims to support, develop, and use the various resources of diverse people in the school community. The intent of the *Home–School Partnership: Numeracy Handbook* is to "help schools and communities work together to support children's achievement in numeracy" (Ministry of Education, 2008, p. 1).

Methods

To optimize the success of the parent numeracy meetings, the numeracy advisors sought to include various stakeholders in the process of planning and organizing. Principals worked in partnership with their school committees to determine a time and date for the initial numeracy meeting. They were responsible for communicating and negotiating this date with the numeracy advisors and then promoting the meeting through the school newsletter and flyers. Finally, they were responsible for attending the parent numeracy meetings in a welcoming role. They greeted the parents and started off the meeting as appropriate for their own school community.

Teachers also had an active role in promoting the meeting by having students make invitations for their parents. In addition, teachers worked together with others at their syndicate level to prepare two or three numeracy activities for a specific strategy stage. The teachers attended the meetings and, during the breakout session, lead parents through the prepared activities.

The MoE advisors met with teachers at the school ahead of time to support them in choosing suitable activities for parents. In addition, they developed the informational portion of the presentation, customizing a presentation based upon the needs of each school. Each meeting was facilitated by a numeracy advisor.

A critical component in making the program work was the collaboration between the stakeholders. It was important to have the school committee and principal work together to organize and "sell" the concept to the community as a whole. It was essential that the numeracy advisors not only work with the teachers in the selection of appropriate activities, but also to assist teachers in preparing for their role as teachers of the parents.

Once the initial groundwork was done, the majority of schools followed this agenda:

Principal welcomes parents

Short introduction of numeracy advisors

Informational session (approx. 30-40 minutes)

Breakout sessions (approx. 15-20 minutes)

Questions and Discussion

The goals for the initial meeting were to:

- emphasize the importance of the home-school partnership.
- ensure parents and care givers understand how Number Knowledge and Number Strategies work together in the Numeracy Framework.
- ensure parents and care givers are familiar with the Strategy Stages of the Numeracy Framework.

In order to ensure the community group members understood the difference between *Number Knowledge* and *Number Strategies*, they were asked to mentally solve the following problems: 5 + 4 and 4 x 16. The advisors explained that for most adults, 5 + 4 is *Number Knowledge* because it is just a known fact that doesn't have to be worked out. On the other hand, most adults do not instantly know the answer to 4 x 16. They must use a strategy to find the answer. Many adults may be able to find the answer quickly, but if they use a strategy to find the answer, then they are engaging a *Number Strategy* rather than *Number Knowledge*. In the workshops, participants mentally solved this problem in a variety of ways including those shown in the table at the right. The numeracy advisors emphasized that the development of both Knowledge *and* Strategy are critical for a child to develop strong numeracy skills. The two work together because *Number Knowledge* provides the foundation for new strategies, while the use of *Number Strategies* creates new knowledge.

Mental Strategies Used to Solve 4 x 16 (4 lots of 16)

Strategy 1 *(using addition)*
16 + 16 = 32
32 +32 = 64

Strategy 2 *(multiplying in parts)*
4 lots of 10 = 40
4 lots of 6 = 24
40 +24= 64

Strategy 3 *(imagining the standard algorithm)*

$$\begin{array}{r} {}^{2}16 \\ \times\ 4 \\ \hline 64 \end{array}$$

Next, the numeracy advisors briefly introduced the nine Strategy Stages in the NZ Numeracy Framework, from Stage 0: Emergent through Stage 8: Advanced Proportional. The advisors wanted to be sure that everyone understood the difference between the counting stages and the part-whole or partitioning stages. Most parents and care givers were not taught part-whole thinking in school and the mathematics instruction they received likely focussed only on learning rules and memorizing. However, because of research in mathematics learning, we now know that students develop much stronger numeracy skills when they develop part-whole thinking. Helping the parents and care givers understand this kind of thinking was a critical part of the parent numeracy meeting.

In order to develop this understanding, the numeracy advisors led the group through a progression of mental exercises, first to understand counting strategies and then to using part-whole strategies. The advisors gave a variety of examples and demonstrated how materials are used to help students develop this kind of thinking. Then, community members were asked to use similar strategies to solve problems.

Parents of St. Joseph students do numeracy activities with their children's teacher.

After the informational session was completed, the community members then chose a breakout session to attend. Each breakout session focussed on a specific Strategy Stage and was led by the teachers of the school. During the sessions, the teachers engaged parents in the kinds of numeracy activities that their children experience in school. For example, those parents whose children were in early primary may have done some addition or subtraction stories and used ten-frames and counters to solve the problems. Parents whose children were in the intermediate grades may have used place value money to show how many $10 notes would be needed to purchase a computer that costs $685.

The breakout sessions lasted approximately 20 minutes and then all of the community members returned to the school hall for the Question and Answer session. This was an opportunity for parents and care givers to ask questions and discuss what was helpful and what they still wanted to learn about. It was also an opportunity for the numeracy advisors to gain both formal and informal feedback from the community group.

Findings

The initial goal for this project was to host at least one parent numeracy meeting at the majority of the 11 primary schools on Rarotonga during the 2014 school year. Because of community interest, the scope of the project significantly exceeded this expectation. At least one parent numeracy meeting was held in 8 of the 11 primary schools on Rarotonga and 5 of the 7 primary schools in the Southern Group of the Pa Enua. A total of 21 parent meetings were held, with several schools hosting two or three meetings. At three of the schools in which only one numeracy meeting had been scheduled, parents requested additional meetings be held. The topics requested for those additional

meetings included: understanding the Knowledge Framework; addition and subtraction strategies; multiplication and division strategies; and proportions and ratio strategies.

During the informational sessions, parents' discussions had an intensity rarely seen in parent meetings. The engagement, exclamations and comments (e.g. "I wish I had learned maths this way!") showed the interest and involvement of parents and care givers.

During the numeracy activities, participants fully engaged in the activities, laughing, playing and sharing ideas. Enthusiasm was the norm and the energy and sense of fun and learning was clearly evident. Parents were enthusiastic learners and were often reluctant to stop when it was time for the activity to come to an end.

Parents attend a lunchtime meeting at the Community Hall on Mangaia

Parent response to the numeracy meetings was overwhelmingly positive. Some of the comments from parents included:

"It is much clearer to me how my child is learning maths."

"Now I feel like I can help my child with his maths."

"This makes mathematics fun!"

"Thank you for this session. I really feel empowered."

When asked "What was the most helpful thing about this meeting?" on the session evaluation form, parent responses included:

Understanding the stages of the framework and relating back to our tamariki;

Sharing of ideas and interacting with other parents on how our children are learning in maths;

Having to work out the questions by using strategies instead of the traditional way;

Knowing that children need to think first on how to solve the problem and then give a reason for their thinking;

Understanding this new system and the difference between knowledge and strategy because "I am an old DOG."

Implications

Even with stringent statistical analysis, it would be challenging to tease out the direct effects these meetings have had on student achievement in mathematics. However, the parents and care givers who attended these meetings showed that they were willing to participate in their child's education. They were appreciative of the opportunity to engage in discussions about mathematics teaching and learning. They enjoyed doing the mathematics, were keen to improve their own mathematical content knowledge and wanted to gain a better understanding of how their children are learning mathematics. Based upon the research findings in the literature review, we can say that these parents' beliefs, attitudes, and involvement will likely have a positive impact on their child's achievement.

Finally, engaging the classroom teachers as the leaders in the numeracy activities had several benefits: in addition to gaining added credibility in the eyes of the parents, their sense of efficacy in teaching using numeracy activities was greatly enhanced by the parent acceptance of the activities and by the enthusiasm with which parents engaged in the learning activities.

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Relational Aggression and Physical Aggression among Adolescent Cook Islands Students

Angela Page, Ministry of Education, Rarotonga
Lisa F. Smith, University of Otago, New Zealand

Te manako ra tona au taeake e koia tikai aia, ia matou ra, e kite kore aia. Kare paa tona au taeke e kite ana e, te tamaemae ra aia i te tangata. Ka akaranga au e, e tangata viivii e te kino tikai aia.

His friends think he is awesome but we think he is dumb. I don't think his friends realise he is hurting people. I am going to describe him as cruel.

Context

The impression of the South Pacific conjures up images of a picture-perfect paradise, complete with swaying palm trees and friendly, smiling people. The popular image of people living in a utopia is removed from the challenges faced by those living in an individualistic and competitive world. The quote above by a 14-year-old Cook Island's boy, struggling to navigate his way through the relationships of his adolescence, illustrates this point.

The educational system in the Cook Islands delivers a Cook Islands' curriculum but utilises the New Zealand Qualifications' Framework for senior school qualifications. The largest island, Rarotonga, has three secondary schools, including the national college that offers the widest opportunity for education through to Year 13 level. Most students wanting to complete their secondary school education to this level travel to Rarotonga. In 2014, forty-six students from the Pa Enua (the Outer Islands) attended the national college. The Pa Enua are divided into the Southern group (Aitutaki, Mitiaro, Atiu, Mauke, Mangaia) and the Northern group (Manahiki, Penrhyn, Rakahanga, Pukapuka, Nassau, Palmerston). The official languages are English and Cook Islands Māori, with different dialects in the Pa Enua apart from Pukapuka, which has its own language.

Corporal punishment was prohibited only recently in schools, in article 63 of the Education Act (2009): "A person who is at an educational institution must not – (a) verbally abuse any student who is attending the educational institution; or (b) use force, by way of correction or punishment, against any student who is attending the educational institution" (p.44) The Act was updated in 2012, adding a clause in article 109 (1) that provided schools to "(c), require a student of the institution to do an act intended or likely to cause the students pain, discomfort, or humiliation" (p.40).

Although legislative changes have been achieved in the educational sector, corporal punishment remains lawful in the home. The Crimes Act (1969), still in force, states that:

> *(1) Every parent or person in the place of a parent, and every schoolmaster, is justified in using force by way of correction towards any child or pupil under his care, if the force used is reasonable in the circumstances. (2) The reasonableness of the force used is a question of fact. (Article 61)*

However, it should be noted that Article 64 in the Act covers the use of excessive force, and children have some protection from violence and abuse under other provisions in the Crimes Act, the Cook Islands Act (1915), and the Cook Islands Protection of Children Ordinance (1954). Currently, the Crimes Act remains under review and a Family Law Bill is being discussed.

Aggression in Pacific Countries. Both physical aggression (PA) and relational aggression (RA) are characterised by the intent to harm another. Physical forms of aggression involve direct behaviours (e.g., hitting, kicking, or punching), relational forms of aggression more indirect behaviours (Dodge, Coie, & Lynam, 2006). RA, a term developed by Crick and Grotpeter, (1995) involves behaviours that damage relationships and hurt peers (e.g., ignoring, excluding others, spreading rumours). RA, for the purposes of this study, included direct verbal aggression, where the intent was to threaten the social status of another.

Plange, Vakaoti, Finekaso, Schuster, and Hughes (2002) reported that residents of most countries within the Pacific, if not all, accept acts of physical aggression, as well as sarcasm, ridicule, and humiliation, as valid forms of discipline. In most countries of the Pacific, the physical punishment of children is defended as being part of local culture. Across Pacific countries, discipline is considered a vital part of good parenting and punishment is viewed as being for the child's own good (Plange et al., 2002). Although data on RA is not collected in the Cook Islands, the Cook Islands Global Health Survey 2010 Report (Ministry of Health, 2014) asked two questions on bullying as part of a comprehensive health survey of all students from Year 8 to Year 13. That report stated that 32% of male students were likely to have been bullied; they were "being hit, kicked, pushed, shoved around, or locked indoors" (p.25). In comparison, only 12.8% of girls reported being bullied in the same way.

Beyond physical aggression, the extent of the different forms of aggression present in South Pacific countries is unclear. There has been no research specifically on relational aggression within the South Pacific. The current study begins to address this issue through surveys and interviews of students in middle and high school settings, as well as through interviews with teachers, to investigate perceptions of students' relational and physical aggression as separate behaviours.

Research Focus

It is critical to understand how adolescents perceive themselves and others in acts of physical aggression (PA) and relational aggression (RA) and also how their teachers perceive and deal with these behaviours. It is equally important to then use this understanding to reduce the use of RA and PA, and diminish their effects when they are used. Therefore, this research explored these perceptions and the strategies used to address RA and PA with students in Years 7 to 13 in the Cook Islands. A mixed methods design, using both a questionnaire and survey, examined the following research questions:

1. How do middle- and high school-aged students engage in and/or experience PA and/or RA? Are there gender differences in perpetrating and/or experiencing PA and/or RA?

2. What are teacher perceptions of how middle- and high school-aged students perpetrate PA and/or RA?

3. What are student perceptions of how middle- and high school-aged students perpetrate PA and/or RA?

4. How do students and teachers differ in their views of effective strategies to address PA and/or RA?

5. How do students describe perpetrators of PA and/or RA? What are any gender differences in these descriptions?

Methods

Participants. Participants were a convenience sample of 441 male (*n* = 216) and female (*n* = 225) students from Years 7 to 13 from nine secondary schools in the Cook Islands. They ranged in age from 11 to 19 years, with a median age of 14 years. In terms of ethnicity, 90.4% of the students identified themselves as Cook Islands Māori, 3% NZ European, and 2.3% New Zealand Māori.

The students reported their island affiliation as 37.9% native to Rarotonga, 23.9% native to Aitutaki, and 18.4% native to Mangaia. Many students in the Cook Islands attend secondary school on islands other than their home residence, and so residential information was also collected: 58.5% lived in Rarotonga, 23.1% lived in Aitutaki, 12.0% lived in Mangaia, and 5.9% in Mauke.

Eight students and 8 teachers randomly selected from the Rarotongan sample also participated in interviews. Selection from the main island of Rarotonga was due to the difficulty of travelling to the Pa Enua.

Materials. The materials for this study were a brief demographic questionnaire, the Personal Experience Questionnaire (PEQ; Basow, Cahill, Phelan, Longshore, & McGillicuddy-DeLisi, 2007) modified with the authors' permission to facilitate local

language usage, and semi-structured interview questions. The PEQ comprises 13 items, with 7 relational aggression (RA) items, 3 physical aggression (PA) items, and 3 prosocial behaviour items. The items are responded to twice: once in terms of the behaviour as a perpetrator, then as a target.

Examples of items regarding being the perpetrator of behaviours included: “How often have you hit someone when fighting?” (PA), “How often have you tried to steal someone's girlfriend or boyfriend when angry with them?” (RA), and “How often have you done nice things for others?” (Prosocial). Examples when worded as being the target of behaviours included: “How often has someone hit you when fighting?” (PA), “How often has someone given you the silent treatment?” (RA), and “How often has someone gone out of their way to help you?” (Prosocial). Responses were recorded using a 7-point scale that ranged from 0 (*never*) to 6 (*always*).

Findings

Survey data. The first research question concerned how middle- and high school aged students in the Cook Islands engage in and/or experience physical aggression (PA) and/or relational aggression (RA). The results from 441 surveys indicated that there was no gender difference in the perpetration of PA. Girls, however, were more likely to perpetrate and be targets of RA than were boys but were also more likely than boys to act in prosocial ways. Boys were more likely to be targets of PA. PA and RA were highly correlated for both genders.

Interview data. Responses to questions from eight students and eight teachers were used to investigate the remaining research questions. In terms of teachers’ and students’ perceptions of how middle- and high school-aged students perpetrate physical and/or relational aggression, the most common behaviour reported by both students and teachers was direct verbal put-downs (e.g., calling each other names). One gender difference noted by two students and four teachers was that on occasion, boys’ verbal putdowns escalated to physical aggression. One girl observed, “He teases around but sometimes he goes overboard and it gets a bit too violent.”

The second most aggressive behaviour was threats, which boys were more likely to deliver in a direct manner. Teachers and students reported that boys used statements such as, “You wait.” Four of the teachers reported that girls also were heard to make threats, but not in a direct fashion, such as “I want to give her a hiding” and “I wanted to smack her one.” Five students reported that girls were likely to engage in punching. According to four of the teachers, isolation and exclusion was observed with girls but not boys; however, four of the students reported that this behaviour occurred for boys and not for girls.

Both students and teachers talked about aggression as being normal; five students also mentioned aggression as a means for getting attention. The teachers were marginally more likely to cite occurrences of aggression than students. Four teachers also cited the lack of social skills as a reason for students acting in aggressive ways.

In terms of strategies for dealing with aggression, four students stated that talking to a teacher was a good strategy, although they also considered that this did not always work, because, "It doesn't stop, the teasing gets worse." Another reported that "Going to a teacher is hard sometimes because this school is small and we only have a small group to go for help; it is harder here. What if you don't get on with that teacher? Then you are stuck." One girl reported, "I could have told the teacher. It depends on who the teacher is, how you get on with them, whether you tell them things or not."

Students believed that what the teacher should do to address aggression is to telephone parents. Telling parents would signal that the situation is considered very serious, as one student noted:

> *Kids are scared of their parents. They will give them a hiding if they do something bad, so once the teacher says they will ring, things change - things become different. I know when I tell a teacher that this might happen, so bullying has to be bad to tell a teacher, you have really stepped things up for the bully.*

Four students reported that addressing the aggressor immediately was a good strategy. Two students stated that the noise level of the classroom had an impact on the amount of aggression in the classroom, where louder classes meant more opportunity for the perpetrator to act.

Four of the teachers considered the best strategy for the target was to talk to an adult, and for the teachers themselves, the best thing to do was to stop the behaviour straight away. The teachers also understood the process of Restorative Justice, even though this initiative has not been delivered as a professional development option in the Cook Islands for around 10 years. Three teachers considered this approach the best strategy to use. Another popular strategy for the teachers was to address aggression from a systems approach. Four teachers promoted this notion with suggestions for a social skills development programme and teacher-led school initiatives in assembly. It was also evident that the teachers knew about their students' personal lives and the communities in which they lived, which reflects the Cook Islands in general. One teacher reported on how this had an impact on behaviour management:

> *You have got to know your students and understand their personalities, then you can pick up on bad behaviour. A poor teacher lets things go on too long. Small schools here help develop good relationships, and we know our students and their families.*

A range of strategies considered effective by both teachers and students is shown in Table 1. It should be noted that several of these strategies support finding by Page and Smith (2012) in an earlier study in New Zealand.

Table 1

Strategies to Address Aggression in School Considered Effective by Teachers and Students

Strategy	Explication of Strategy
Early intervention	Immediately stop RA and PA when observed, thereby potentially avoiding escalation of the behaviours.
Address the behaviour	Talk to the individual or group, taking into consideration the timing in the context of the behaviour.
Engage in school-wide management	Publically offer support to students school-wide to raise awareness of RA and PA; publicise processes and procedures for getting help; practice zero tolerance. At the micro-level, engage in the restorative justice process or the restorative chat.
Teacher involving parents	Involve parents when the situation requires it, with awareness that there is a risk that this might lead to negative outcomes for some students.
Teach prosocial behaviours	Teach prosocial behaviours directly to help students recognise that RA and PA are not acceptable.
Build teacher-student relationships	In addition to school-wide programmes and policies, work toward building positive teacher-student relationships to reduce incidences of RA and PA and encourage students to talk to teachers when they occur.

In analysing the transcripts to identify and describe perpetrators of RA and/or PA, both students and teachers were consistent in their perceptions. Girls and boys were largely described as being popular, cool ("Others would say he is cool, but he does mean things" – teacher), attractive ("She has the right look" – student), and as having lots of friends. They are outgoing and other students want to be like them. They have influence over others and are leaders. They want to dominate others and usually this is done via clever argument. A teacher reported an example of a girl who used RA, stating "She is quick on the uptake, so she has all of the power."

Another teacher described a boy who was physically aggressive, reporting "He wants to be the man. He wants to be macho. He has mana in his village and he brings that to school and wants to let everyone know who he is." Another teacher stated, "Boys use opportunities to physically fight on the sports field."

One theme - swinging between mean and good - was described by students, but not teachers, in which five students reported perpetrators as being mean, but nice at the same time. One student described one girl's behaviour as "moody, but on some days she is good and then other days she is out of it. She goes through phases of mean and then happy." Another boy reported a boy in his school as "nice and sometimes he is mean and then he doesn't want to know me." Another view was attributed to the type of person the perpetrator was interacting with. One girl stated, "They are nice to the cool people and not nice to the people they don't think are cool, they are mean to people they don't like." This was supported by other students, such as one boy who reported, "Others don't like him, but his friends think he is awesome."

There was a final group identified by three teachers, of girls who engage in aggressive behaviours as a normal friendship pattern. Students did not identify aggressive behaviours operating within their friendships, however, but attributed aggressive behaviours to students who were clearly in another group to which they did not belong.

Implications

In terms of strategies to address aggression, students suggested talking to a teacher and having a teacher contact parents. Parental contact was considered to escalate the likelihood that an incident would get attention and therefore action. This finding is partly in contrast to Denny et al. (2014), who found little evidence that teachers who take action to stop acts of aggression actually worked, and recommended a more active role by bystanders as potentially more effective. Bystander involvement might be an intervention that would be effective in the Cook Islands at a systemic (school) level, especially if combined with the strong Christian values taught in the Cook Islands. Teachers considered the best strategy for the target of aggression was to approach a trusted adult, and for teachers, themselves, was to stop the behaviour when they first observed it. This last idea supports Bradshaw et al.'s (2014) recent work on how adult supervision of children in school contributes significantly to social control.

Several limitations in the study are noted. First, the results may not be generalise to other countries or even to Cook Islanders living outside of the Cook Islands. It is also noted that because Cook Islands Māori is often the first language spoken in homes, the PEQ and interviews having been in English may have been a barrier to accuracy of the results. Social desirability in the responses may also have been an issue, particularly given that prosocial behaviours are highly valued in the Cook Islands. A further consideration is that the limited number of PA items compared to RA items may have skewed the results. There also may have been a bias in the interview sample, given that they were selected only from the main island of Rarotonga.

Even given these possible limitations, this study provides understanding of the nature of aggression in Cook Islands' middle and secondary school students. To date, most of the

research in the area of PA and RA as separate forms of aggression has focussed on Western individualist populations; the current research offers insight into the ways that aggression compares to that research. It is important, however, to look past whether the culture is collectivist or individualist to what makes sense in current times and contexts. Here, it seems that consideration of which strategies to apply must be determined by a combination of teachers, students, and the wider community (or at least parents).

Schools can and indeed must work with students and the wider community to provide targeted interventions to address PA and RA, as it is well documented that, especially in collectivist countries, the likely result of peer violence and abuse is emotional harm (Kawabata et al., 2010). Further research that measures the efficacy of different interventions would be beneficial in informing how to work toward reducing PA and RA among students just when they are at a sensitive time in their development. For the students in the Cook Islands, those images of a South Pacific utopia might then become a reality.

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Apii Nikao: A Phoenix Arising from the Ashes

Editors' Introduction

Smoke filled the sky and the fire burned fiercely, spreading like wildfire from room to room. Both the Avatea School campus and the neighbouring campus of Nikao Maori were engulfed in smoke. Community members watched as one of the blocks of Avatea School burned to the ground. In a few short hours the school had lost six classrooms, its library, computer room and staff room, and most of its learning resources.

This devastation was just one in a series of arson attacks on Rarotonga in 2013, which also included the burning of a block of classrooms at Nukutere College. The effect on the island was profound: the sense of loss and violation; the anger and frustration; and most importantly, the loss of a school that was central to the community.

While politicians and administrators worked to find ways to finance and rebuild the school, the Ministry of Education made the bold decision to integrate Nikao Maori and Avatea Schools into a single school: a Modern Learning Environment (MLE) school. A dramatic change from the traditional schooling that previously characterized Nikao Maori and Avatea Schools, this new MLE school was to be called Apii Nikao.

The move was highly controversial. Nikao Maori School was the Maori language school and Avatea its English language counterpart. The notion of an open plan learning environment demanded that significantly different teaching skills and strategies be utilised. Not only was this shift in teaching a daunting prospect, but there was also the question of *what to do while the school is being rebuilt*.

Intense and emotional community discussions followed; over time, with community and staff input, a plan of action evolved. The challenge was compounded by ongoing funding issues and the premature demolition of the existing school buildings. Two years after the fire, construction on a new school has not yet begun and students are still housed in temporary accommodations; nevertheless, like a phoenix arising from the ashes, Apii Nikao is embracing the MLE concept and the teaching and learning environment is evolving.

The following three articles, which focus on the educational aspects of this transition, were written by the Ministry of Education Learning and Teaching Advisors to create a picture of the journey of Apii Nikao during this transitional stage.

In the first article, Apii Nikao: A Way Forward the author gives a narrative description of the classroom and educational context and organization following the joining of Nikao Maori and Avatea schools, together with observations and outcomes as the transition to a MLE progressed.

In How to Make it Stick: Pedagogy and MLEs the author looks at the literature for the research and practice related to MLEs and makes suggestions as to its application to Apii Nikao.

Apii Nikao: Taking the Temperature examines the evolving attitudes and feelings of the teachers involved in the transition and suggests future directions.

Apii Nikao: A Way Forward

Janet Woodger, Ministry of Education, Rarotonga

Photo courtesy of Ms Charlie, Principal Avatea School 2013 and Co-Principal Apii Nikao 2015

Context and Background

Apii Nikao is the beginning of a new school – bringing together the students and staff from Nikao Maori School and Avatea School following the arson attack in October 2013 at Avatea School.

Nikao Maori had a strong identity of being the Cook Islands language school in the community. A full immersion language policy was in place for ECE and Years 1 – 4, and a bi-lingual approach with English in Years 5-8. Avatea School was identified as the English language school in the community, engaged with CI Maori oral language in Years 1 to 3 with the addition of reading CI Maori in Year 3.

The initial proposal presented many challenges, but also provided an opportunity to consider a modern learning environment in the Cook Islands. These considerations, led by the Cook Islands Investment Corporation, (project facilitator) and the Ministry of Education became the topic and purpose for discussions within the community.

Transition plans based on projected student numbers and classroom space available resulted in the location of ECE children to the Pokoinu Hall in Nikao, with Years 1 to 6 students based at the Avatea Hall in Nikao and Year 7 & 8 students based at Arorangi School.

The curriculum and pedagogy team of advisors at the Ministry of Education became heavily involved with the co-principals and staff to support the learning and teaching

environment and in developing the pedagogy for Apii Nikao, the applied practice of teachers in a modern learning environment.

Structure of Leadership and Teaching Staff at Apii Nikao – Term One 2015

Co-principals	Ms Nga Charlie (Nikao) Ms Elizabeth Kapi (Arorangi)
Deputy Principals	Mrs Annie Iona and Mr Teina Tearii (Nikao) Mrs Piri Puna and Mrs Teina Napa (Arorangi)
Assistant Principal	Mrs Helen Rauraa (Nikao)

Learning area	Location	Teaching staff
Marae 1 ECE	Pokoinu Hall	Leader: Mary Vakatini
Marae 2 Year 1	Avatea Hall	Leader: Helen Rauraa Tepora Tou Vaipae Teko
Marae 3 Years 2 & 3	Avatea Hall	Leader: Vainiu Savage Kate Robati Olenga Nootai
Marae 4 Years 3 & 4	Avatea Hall	Leader: Temarangi Paratainga Vaevae Tomokino Uamaki Aberahama Lysia Stringer
Marae 5 Years 5 & 6	Avatea Hall	Leader: Annie Iona Teina Tearii Moeara Teipo Maara Scheel
Marae 6 Years 7 & 8	Arorangi School	Leader: Piri Puna Teina Napa Metua Teariki Pipirangi Heather (rel)

The Avatea Hall was substantially renovated and upgraded to provide temporary accommodation. The hall was organised into three large learning areas on the ground floor, and a fourth on the upper floor, all co-existing within the same open space.

Marae 5: Upstairs at Avatea Hall - Setup of the learning area for 60 – 70 students

Furniture and teaching materials were arranged to create learning spaces for the students enrolled within four separate marae (groupings) in Avatea Hall.

Research Focus

This research was carried out in two phases:

The first phase was conducted during Weeks 3-5 of Term 1: February to March 2015. During this phase evidence was collected: (a.) to gauge the level of wellbeing of students and staff and to gather information on their concerns; and (b.) to make observations of the approaches to teaching and learning in each marae.

These data would be used for feedback and feed-forward for professional development. The primary goal of this phase was to provide direction for the Apii Nikao advisory team and to ministry staff in supporting teachers and informing future planning.

The second phase was conducted during Weeks 11-13 of Term 2 in June and July 2015**.** In this phase answers to the following questions were sought:

- *Are 'deliberate acts of teaching' for literacy, numeracy and inquiry learning evident?*
- *Is collaborative planning by marae effective for teachers?*
- *Can we use these observations as a tool to review current practice and inform future practice?*

Phase One Methods

Observations

Observations were made during one day in each marae and were recorded on video. Data was collected on teaching and learning engagement within the planned approaches for literacy, numeracy, and inquiry sessions.

Following the phase one observations, Carly Ave, Primary Literacy Advisor facilitated workshops and modelling of literacy strategies for teachers, Kathryn Cheval, Numeracy Advisor modelled numeracy strategies and Tasman Mouldey, Curriculum & Pedagogy Advisor, supported planning and modelling of inquiry learning for each marae.

Student and staff wellbeing

Face to face interviews of students and teachers were conducted using questionnaires (Appendix A). Student selection was random and staff present in the school were interviewed. Student and staff responses were recorded on video. Staff were provided an assurance of 'confidentiality of individual response' and advised that only a summary of common views would be reported to inform a ministry response.

Phase One Findings

The table below summarizes the data collected from the observations and the responses by students and teachers to the interview questions.

OBSERVATIONS	INTERVIEW SUMMARY
***Students engaged in activities/learning 90-95% of time within marae timetable.** ***Teacher led activity by ability grouping preferred practice. Teachers are providing instruction for their ability level (literacy & numeracy) with follow-up activities.** ***No evidence of teacher directed strategy for literacy (students mostly reading at PM level with activity sheets-pairs, small groups, independent)** ***Teacher directed strategy evident with numeracy.** ***Inquiry lessons not evident. Days present – reading/games, culture, artwork, culture.** ***No use of the tivaivai tool for students to manage their achievements and progress.**	**Marae 2**: Students: like coming to school, like learning activities and know the teacher will help them if they need help. (3 students – CI Maori first language). Teachers: Collaboration within marae valued by all teachers and revealing respectful relationships. Student centred learning approach within planning is making a difference, particularly targeted learning with ability groups. Concerns – classroom management of resources (privacy), noise factor, relevancy of staff meetings, provision of CI Maori language? **Marae 3:** Students: Girls more aware of routine and what to do next. Students pay attention to teacher, wanting to learn. Maths is favourite learning area. (pattern around teacher led instruction, follow up activities, extension activities) Teachers: Differences between Nikao-Avatea students noted by both teachers. Noise control problematic for one teacher. Collaboration valued and contributing to good progressions for students. Expression of too many meetings. **Marae 4:** Students: happy to be at school, enjoying learning. Students feel safe at school. Only one concern, when playing soccer got kicked in the knee. Evidence of teacher dependency still for checking in and 'next step'. Girls able to articulate better than boys in response to questions. Maths being cited as favourite learning area (teacher led strategies - more activities, extension activities) Teachers: are pleased routines firmly established. Initially demanding, but collaboration is productive and positive within marae. Disparity being revealed between Nikao-Avatea children. Lots of meetings understood in settling in period, expressions of excess now. Currently planning own groups only, next step planning for marae? **Marae 5:** Students expressing they love coming to school, they like their teachers, they like learning English, Maori, Maths, Art. Teachers have established routines for students, are pleased with ability group approach to plan and engage students. Noise levels distracting learning.

Phase One Outcomes

The evidence from both observations and interviews revealed students felt safe, they liked coming to school, they enjoyed their learning activities and they knew their teacher would help them when they needed support.

Staff members appreciated the collaboration within their marae and were pleased with a student centered focus on their own ability group that the marae structure offered verses a traditional classroom where they would need to plan for multiple ability groups. Noise levels were a major concern and challenge for teachers. Disparity, differences in abilities for literacy and maths by age between Avatea and Nikao Maori students was noted by teachers in Maraes 2, 3, and 4.

Marae 4: Students working independently with teachers available for support

The findings and outcomes were presented to relevant Marae during their professional development during Weeks 8&9 Term 1, March 2015**.**

Intervention

The next step was to consider if the literacy and inquiry teaching support provided by advisors was effective and how were teachers working collaboratively to achieve both student engagement and the planned learning outcomes? This led to the phase two investigations.

Phase Two Methods

During phase two, we again sought to answer these questions:

- *Are 'deliberate acts of teaching' for literacy, numeracy and inquiry learning evident?*
- *Is collaborative planning by marae effective for teachers?*
- *Can we use these observations as a tool to review current practice and inform future practice?*

Observations were made over one day in each marae seeking evidence of 'deliberate acts of teaching' in literacy, numeracy, and inquiry sessions. Both written and video recordings were made.

Oral feedback and debrief observations with teachers in each marae were used to determine whether or not collaborative planning was effective.

Phase Two Findings and Outcomes

Deliberate acts of teaching were evident and captured on video and recorded within observations.

Collaborative planning was evident with unit plans, term or weekly themes submitted.

Literacy strategies (teacher directed-group-student activity), numeracy knowledge and strategy (teacher directed-group-student activity), and inquiry approaches were evident in the plans of 7 of the 12 teachers present. One marae included specific reference to approaches for formative and summative assessment activity. Within the observation periods most teachers gave oral feedback but a deliberate connection to formative or summative opportunities were not evident.

Marae plans were not available for the debrief sessions but were submitted to the writer within a week. Teachers were able to produce their own teaching plans for discussion. The writer recommended that some of the written activities within literacy, numeracy and inquiry learning could be used as formative or summative assessment. The assessment material could be held in student learning portfolios as a record of their learning. Discussion around collaborative planning revealed some detachment by some staff. Many teachers were contributing ideas to a marae plan but continued to do their own plans for student engagement in their weekly planning book.

Further Work

Reflecting on the findings and outcomes from both Term One and Term Two, the Ministry Advisory team and school staff agreed that the next step for Apii Nikao teachers was to reconsider their approaches and commitment to collaborative planning for their marae.

To facilitate the move towards more collaborative approaches, Deborah Dickson, Principal for Remarkables Primary School – a Modern Learning Environment school in

Queenstown, New Zealand worked with the Ministry Advisory team to support the Co-Principals and staff and the developments at Apii Nikao. Her 'lived experiences' of leading and building capacity with a new modern learning school in Queenstown was relevant, hugely valuable and provided a 'critical lens' through which to view the progressions at Apii Nikao..

The focus of her visit was on "collaborative practice in action."

Workshops for each marae were held during term three. Debbie led and facilitated a collaborative approach for each marae with their term four plan.

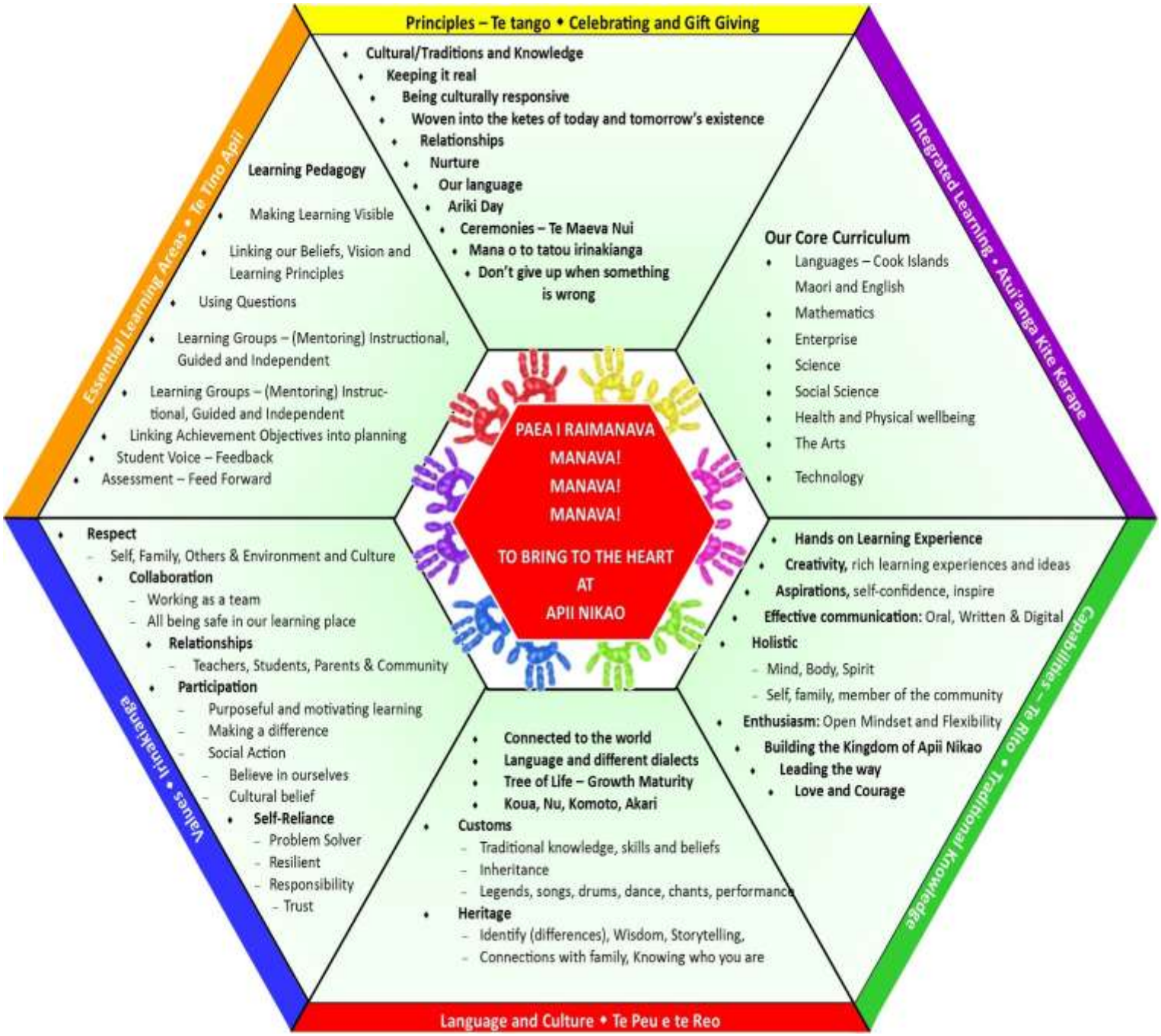
Following the workshops and debrief with the teachers and co-principals, Deborah Dickson recommended that the next step for the Ministry advisory team was to focus support on the marae leaders and co-principals. Apii Nikao teachers have developed an in depth understanding from their 'lived experiences' and applied practice during the year and have the confidence now to progress collaboratively with literacy, numeracy and inquiry learning for their students.

Implications: Future Direction

Apii Nikao was the beginning of a new school – it brought together the students and staff from Nikao Maori School and Avatea School. The journey has been long and challenging, but at the same time very rewarding. As a way of moving forward with a common vision, the staff collaborated on their school framework. Together, they developed the Apii Nikao Tivaivai Vision Framework, which articulates their voice, their place, their practice, their values, the direction they want to take, their journey – the way forward for them. All of this is expressed in their framework and conveyed in their school motto:

Te tango o te kaveinga tiratiratu

Learning foundation for successful journeys



Apii Nikao Tivaivai Vision Framework courtesy of Ms Charlie, co-principal Apii Nikao 2015

Appendix A

Phase One Interview Questions

<u>Student Interviews</u> Marae 2 (23) 2 boys Marae 3 (49) 3 boys, 4 girls Marae 4 (43) 4 boys, 6 girls Marae 5 (63) 6 boys, 8 girls	**Useful questions for Students:** ***Focus on teaching and learning*** What are you learning about today? How do you know you have completed or achieved a task? How are you going to know you have done a good job? What is your next step? How do you know what it is? What are some things teachers do that help you with your learning? ***Focus on school culture-climate*** Are you encouraged to contribute/ share ideas and ask questions? How does your teacher encourage this? Do you feel safe or comfortable? Do you worry about anything? ***Focus on school environment*** Are you enjoying the new learning environment? Why?
<u>Teacher interviews</u> (13)	**Useful questions for Staff:** ***Focus on teaching and learning*** What are some ways in which students are managing themselves? How are students involved in making decisions about their learning? How are students made aware of their 'next steps' and how to achieve these? ***Focus on school culture/climate*** What do you notice is different to the learning atmosphere as you walk around? Can you share how power and decision making shared amongst your staff and leadership? How do you work collaboratively as part of a teaching team? ***Focus on school environment*** What do you notice is different to students using the space and furnishings compared to a traditional classroom?

How to Make it Stick: Pedagogy and MLEs

Alexander Davis, Ministry of Education, Rarotonga

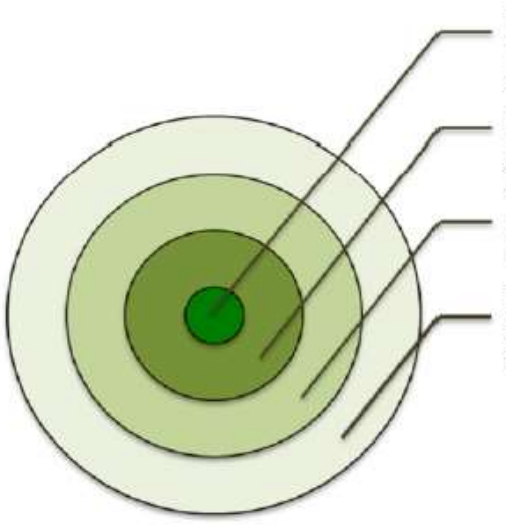
Introduction

One of the biggest challenges that face schools when considering whether or not to build a Modern Learning Environment (MLE) is the problem that 'changing the shape of buildings does not lead to teachers teaching differently' (Hattie, 2015). This is a risk faced by any government when building different spaces and a risk we are taking here with the rebuild of Apii Nikao. In this article we explore some of the research that will guide on helping teachers adapt and "how to make it stick."

In attempting to avoid a problem that Hattie (p.17) identifies where the 'the school does not first welcome the space and then decides what to do with it', we are actively investing in the pedagogical development necessary to capitalize on the exciting investment in our buildings. We are working to develop frameworks and pedagogy to use as a mode for ongoing development. It is this approach that will lead to sustained improvement over the long term. In addition we have invested in the coaching model that Hattie suggests to support our teachers to improve their 'impact'.

Ultimately, it then falls to the school leaders and teachers to establish how best to use the space. It makes sense that with such a shift in how learning spaces are built that there is a corresponding shift in how pedagogy should work in this environment. Bernard (2012) in his UNESCO study, reports that once space is settled, it next falls to the school and the programme of instruction to have impact on the learning of the students (see figure 1).

Figure 1 . Areas of impact on the quality of learning environments by level



In support of this notion, the New Zealand Ministry of Education (2013, p. 1) suggests: "New approaches to classroom design give teachers in modern schools the opportunity to use innovative and imaginative teaching practices to better meet the needs of all their students", therefore, it remains for teachers and those who provide support for education to investigate new pedagogy that is complimentary.

Making it Stick: Collaborative Approaches to Learning

There is some logic in thinking a collaborative environment demands a collaborative approach to learning. In their research into modern learning, Bolstadt & Gilbert (2012) provide advice regarding an environment that encourages collaborative knowledge building between teachers and students.

> *The challenge is to move past seeing learning in terms of being "student-centred" or "teacher-driven", and instead to think about how learners and teachers would work together in a "knowledge-building" learning environment. This is not about teachers ceding all the power and responsibility to students, or students and teachers being "equal" as learners. Rather, it is about structuring roles and relationships in ways that draw on the strengths and knowledge of each in order to best support learning. (Bolstadt & Gilbert, 2012, p. 5).*

There are pros and cons associated with 'student centred' and 'teacher-driven' pedagogies, not to mention the assumptions and barriers that are associated with each of these phrases. What Bolstadt & Gilbert advocate for is a pedagogy that can draw on the professional judgement and experience of the teacher, whilst providing opportunity for building a reflective practice based on the continuous feedback and feed forward of the students.

Additionally, the process for learning and knowing has shifted from "being able to remember and repeat information to being able to find it, use it, and contextualize it" (Miller, 2009, p. 6). As Bolstadt & Gilbert (2012, p. 42) elaborate:

> *Increasing emphasis was being placed on students developing learning dispositions and a wider range of skills and competencies, and the schools were moving further towards pedagogies of co-construction. Professional development (PD) experiences were important for teachers to be comfortable with this. All of these supported students to self-assess and recognise their strengths and weaknesses (p. 42).*

Making it Stick: Co-construction of Knowledge

Pedagogy co-constructed by teachers and students has the benefit of allowing students to take ownership of their learning. Co-construction gives the students explicit control over their learning as they have had input over the learning, skills and assessment they use.

This process allows control to be shared between teacher and student. This becomes crucial when working in MLEs where there are multiple groups of learners and teachers. Control can no longer be asserted in traditional ways, as space is shared, therefore it is important that students take more responsibility for their own learning.

Fisher (2005, p. 8) has broken down some of his principles of learning and links it to a pedagogical approach illustrating how the locus of control shifts and becomes more flexible. The 'locus of control' is where the motivation of learning stems. In the traditional model, this would be the teacher who directs learning. The table on the following page illustrates how this shifts towards students and a 'learner centred' locus.

Links can be made to many initiatives currently being developed and working in the Cook Islands: inquiry learning, curriculum integration, and technology integration. At Apii Nikao, to transition to the MLE will be in the difference in the way that these are delivered.

A more collaborative and flexible approach with a shifted locus of control to students, will enable the school to embrace the MLE philosophy. The learning environment becomes more collaborative by necessity, with teacher and student working together and sharing responsibility for learning. Interestingly, Miller (2009) shows there is strong evidence supporting positive outcomes for students and staff when using the more collaborative 'Learning Studio' MLEs provide.

> Additional insights came from evaluating faculty and student perceptions about collaboration and fostering a sense of community or belonging within the Learning Studio. Students reported they are:
>
> - 16% more likely to feel comfortable asking questions
> - 28% more likely to be able
> - 20% more likely to feel the classroom presents the appropriate image for the college
> - 22% more likely to feel valued
>
> The results from faculty were even more supportive. Faculty members are:
>
> - 32% more likely to agree that collaboration between students is better
> - 24% more likely to agree that collaboration between faculty and students is better
> - 44% more likely to believe the Learning Studio conveys the appropriate image
> - 47% more likely to feel valued

(Miller, 2009, p.8)

The evidence suggests that MLEs are conducive to groups working together. In addition MLEs are more conducive to Inquiry Learning and collaboration between colleagues as these two examples from Osborne (2013) illustrate:

linking principles to place

... pedagogical activities require specific spatial qualities to be effective. Each principle requires specific pedagogical approaches to support that principle, and these pedagogies are applied through the five core activities or modes. These modes have direct implications for learning settings design

[source: Department of Education + Training]

principle	pedagogical approach	pedagogical activity	implications for building design
The learning environment is supportive and productive	Learner centred pedagogies with multiple learning settings collocated	delivering	Design reflects community diversity, respects and values different cultures Students have access to teachers
The learning environment promotes independence, interdependence and self motivation	Peer to peer learning, integrated problem- and resource- based	applying	Breakout spaces are provided to allow individual student work Furniture is suitable for cooperative learning
Students are challenged and supported to develop deep levels of thinking and application	Integrated, problem and resource based learning	creating	Access to ICT, multi-media supports authentic learning
Students' needs, backgrounds, perspectives and interests are reflected in the learning program	Theory linked to practice, problems integrate both aspects, resources used continually and creatively, integrated curriculum delivery	communicating	Quiet spaces Multi-purpose rooms that enable students to work on different subjects over longer periods of time, encourage integrated curriculum Teacher spaces that encourage cross-disciplinary teams of teachers working with groups of students
Assessment practices are an integral part of teaching and learning	Continuous assessment, utilising a pedagogy of assessment	decision making	Spaces for student-teacher conferencing Intranet facilities enable ongoing monitoring of student progress by students and parents
Learning connects strongly with communities and practice beyond the classroom	Project and resource-based learning on practical problems		Buildings and facilities that bring the community into the school ICT facilities that support curriculum links to professional and community practice

2.01

Modern learning environments support strengths-based teaching. For example, two classes collaborating on a science project that requires them to publish what they've learnt in the form of an educational poster will achieve much better results if both classes have access to one teacher who has considerable skill in graphic design and one teacher who has excellent knowledge of science and scientific inquiry (Osborne 2013)

Modern learning spaces can support teaching as inquiry better than single-cell classrooms. Working in an open, flexible learning environment where inquiries are shared, interventions devised collaboratively and reflections based on both self and peer observations, leads to a more robust, continuously improving community of practice. (Osborne 2013.p. 5).

Making it Stick: Integrating Existing Practice

Inquiry learning and sharing best practice currently link into the initiatives and frameworks that are already used in the Cook Islands. This leads us to an important point that needs to made: there is a need to respect what teachers bring to the environment and to recognise that this is part of the process of 'lifelong learning'. Work on best practice and 'lifelong learning' experiences are utilised in building a pedagogy that suits MLE of Apii Nikao.

Making it Stick: The De-Privatization of Teaching

There is real challenge when adapting practice to the open nature of MLEs. It is a strong feature of MLEs that teaching practice becomes 'deprivatised'. Teachers are familiar with the security of the four walls of the traditional classroom and the process of the shift to MLE is important to maintain confidence in teaching practice. However, it is not always a challenge when moving to MLEs:

Given the challenges of making changes to their pedagogy, the open teaching spaces had a strong impact on the teachers we interviewed. They noted that the open spaces made their pedagogy more visible to their peers, and opened their practice up for both the scrutiny of other teachers and opportunities to access support. Some said that they looked across at colleagues and picked up tips, or they were able to support other colleagues managing students who were being disruptive (Osborne, 2013, p. 18).

The collaborative and visible nature of MLEs allows teachers to actively support each other. Processes to support and sustain how teachers manage this is important to the success of adapting teaching practice to MLEs. Maintaining the confidence of teachers while transitioning through this process and allowing them some control over the process becomes essential to the sustainability of the pedagogy. Without a process to manage the tension and frustration of this transition there can be a loss of control and motivation related to the move to MLEs. The important of a process is evident as Miller (2009) found that "high levels" of perceived control over one's work increases job satisfaction, commitment, involvement, performance, and motivation.

Furthermore, the same principles of collaboration and visibility could be applied to the organisation of the school and staff. The collaborative approach to learning can be mirrored in the way staff work together. Hipkins (2011, p. 42) identifies three areas that have formed the basis of how one school has approached the way their staff work together in their MLE to plan for sustainability:

> *A flat management structure and distributed leadership*
>
> *The different types of learning and management networks described in this report were devised with sustainability in mind. The principal believes that sustaining a vision should not be reliant on any one person or group having to work too hard, nor should it be reliant on strong personalities. There should be a place for all styles of leadership and for everyone to bring their complementary strengths to the team.*
>
> *A culture of de-privatised practice*
>
> *The principal has a desk in the open working space shared all three deputy principals and other management staff. Teachers all work in open spaces where they can observe each other at work and they share workrooms attached to these spaces. Issues and challenges are openly shared and addressed. The school is open to parents at all times.*
>
> *Collective decision making*
>
> *At ASHS every person is seen as bringing strengths to the whole team ("their treasures"). The leadership team aims to work in ways that build teachers' autonomy and allow them to develop their individual passions within the networked learning culture. All the administration personnel are also empowered to participate in decision making and they "own" the organisational aspects of the school. The principal noted that they have a "respect that doesn't necessarily happen at other schools". Student leaders are also integral members of all the networks and have real decision-making roles to play.*

Although this needn't be the only approach to manage staff, there are certain factors that directly influence how staff work together because of the built environment. The 'culture of de-privatised practice' becomes a key determinate of success in a MLE, as discussed previously.

The process by which teachers work together and organise the spaces they work in can also be applied to the school wide organisation. The learning is collaborative, and so is the management. There are real challenges to collective decision making and this is usually signals a departure from the traditional management structure of a school. This is not to say that every decision needs to be reached by consensus, but collective decision making is important in the experience of a new school to increase the sense of ownership and commitment of staff.

This becomes increasing powerful in a MLE school, as this democratisation of processes mirrors the same process that is happening to learning. This collective decision-making approach is particularly useful when working on the development of the vision and pedagogy of the school. Again it is about engendering ownership of the model. It is the

principle of 'done with' as opposed to 'done to' that mirrors the learning of the students. Anecdotal evidence from New Zealand suggests a very high staff turnover in new schools, usually within the first two years of operation. However, it also suggests that a strong process which includes staff and has high levels of participation can mitigate the tension and stress of opening a new school and contribute to the success and sustainability of the school.

Making it Stick: At Apii Nikao

So, to Apii Nikao. The sheer scale of change is intimidating for any practitioner and before any practical strategy can be trialled and used, there is a demanding shift in mind-set that must take place. Just this single change is a test to even the most resilient teacher – the change to years of practice and the comfort success associated with their existing environment – is an important sea change. To try and implement a programme of support by a third party, such as the Ministry of Education, is difficult, juggling the needs of the students and upholding the mana and experience of our teachers.

As this programme of support has developed, the development of a respectful and mindful relationship has been at the forefront of how the team of advisors: Janet Woodger, Tasman Mouldey and Lex Davis, have sought to work with the teachers.

In a difficult period of change we have tried to honour the existing skill and life experience of the teachers and develop a programme that is developed 'with' teachers rather than 'for'. Though this has led to some frustration at times, as the need to know can be overwhelming, this collaborative approach honours the pedagogy that has been discussed previously.

As this process has developed and we gauged the resiliency and needs of the teachers, we have sought to gather evidence from the 'chalkface' to lead the direction of support.

Again, gathering teacher voice and student voice is a process that seeks to mirror what we would like to happen – a consultative, flat and collaborative classroom. Our practice is led by the teachers, who are in turn led by their students:

The other two articles in this trilogy seek to unpack some of the teacher and student voice we have gathered to illustrate the journey we have taken together.

E vae e na mua ra iaku
Akamou I te tira ia tumu te oe… ia tumu te oe

Stand before me my child.
Set your destiny to the god of our ancestors – Tumu to oe
He will direct your path… and protect you along the way

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Apii Nikao: Taking the Temperature

Alexander Davis, Ministry of Education, Rarotonga

The Context

The move from the industrial school to one based on '21st Century Learning' is a well discussed concept. Robinson (2010) is a keen advocate of the shift away from the 'factory model' of standardised mass produced education. He likens the current educational paradigm to a fast food chain that has been standardised, providing the same service to the masses: "We have sold ourselves into a fast food model of education, and it's impoverishing our spirit and our energies as much as fast food is depleting our physical bodies" (Robinson, 2010). So, if the industrial model of education and more importantly the thinking that underpins it is viewed as lacking or outdated, where to next? Bolstadt and Gilbert (2012) make the case for the shift from the industrial model to one that can deal with the complexity of the current century.

> *Bolstadt & Gilbert (2012) continues to explain our "need to rethink our ideas about how our learning systems are organised, resourced and supported" (p. 2). It becomes a complete reorganisation of the system. People and pedagogy to buildings, in what they call a're-bundle'. They assert that this rebundle of learning and teaching better reflects the context and demands of the 21st century world. In the following table the shift is explained (Bolstadt & Gilbert, 2012, p. 13).*

Locally, this is brought into focus by the building of Apii Nikao. The rebundle of teaching and learning in a Cook Islands primary school requires a substantial commitment from all involved, but particularly the teachers. The change to how, where and with whom they work is enormous and requires not only a combination of professional learning and personal inquiry into their own teaching, but a leap of faith and trust that they, and their students, will be able to be effective and comfortable in the new school.

Moreover, it is the shift of the teachers to a different style of teaching that presents immediate challenges, professionally and emotionally. Resistance and anxiety around such a change is to be expected and the tracking of the understanding and wellbeing of teachers was of high importance to the Ministry.

Research Focus

The process of tracking this change and feeling over the last year is the focus of this article. Trying to understand what is most important and worrying for those teachers involved and looking at how and why these may have changed. The context is the shift from traditional classroom to the transitional environment of Avatea Hall, their first step towards to their new environment and way of working.

Methods

Although there was structure around gathering teacher voice with each survey and feedback session, it was not the initial intention to track that longitudinally. However, analysing the individual results provide an interesting narrative of the teachers understanding and thinking and how this has shifted over the last year.

The first instance of collecting teacher voice was in November. Here we surveyed the teachers of Avatea School and Nikao Maori School, with an online survey asking them to rank what they prioritised as the most important aspects of preparing for the new school and where they would like support. This was completed online and anonymously.

Next, in December we gathered teacher voice during a week of professional development to help share what learning may look like and how it may take place in a different environment. Three schools took part in this exercise and teachers and teacher aides were invited to write responses to a number of questions during a large group 'bus-stop' session, moving around the room answering the questions in groups and writing their response on butcher's paper lining each table. The responses were collated and then sorted into the following categories:

- *Collaboration*
- *Curriculum*
- *Operations*
- *Resources*
- *Environment*
- *Student Behaviour and Wellbeing*

Finally, in April Ministry staff worked with each Marae and asked the teachers to give feedback about their first four months in the new environment. Individually, teachers were and asked to reflect on the beginning of the year and write comments on two colours of sticky notes about what was going well (positively focussed comments) and what needed improvement (negatively focussed comments). These comments were then gathered and anonymously read out to the Marae teachers who collectively sorted into the same categories as the December exercise.

November Survey

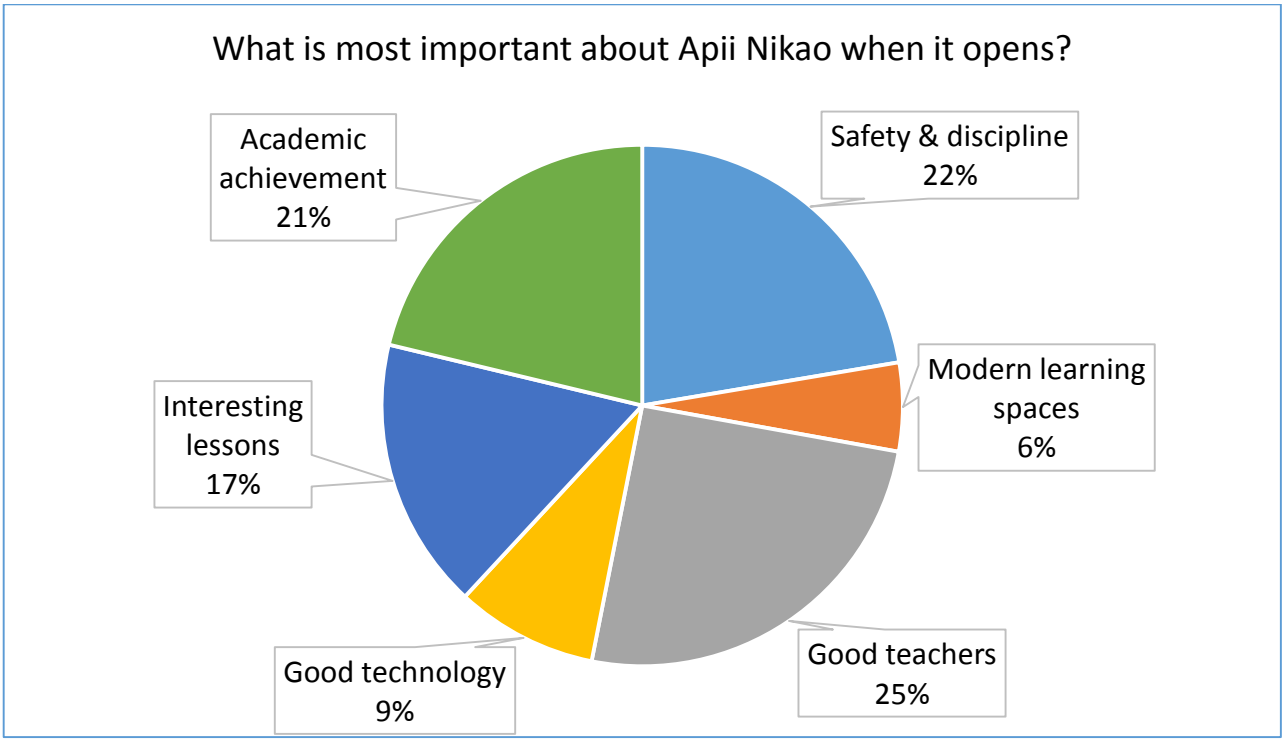

Figure 1 Responses to Question 1; November 2014

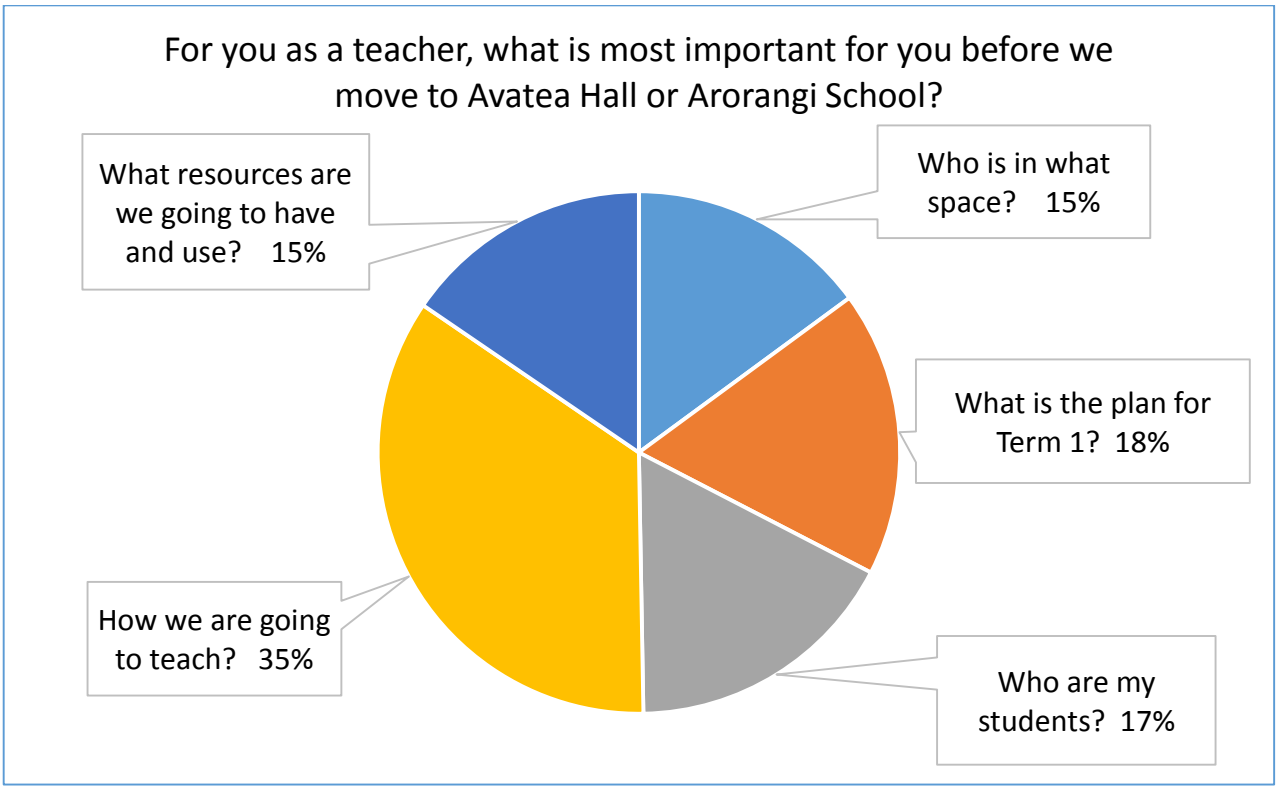

Figure 2 Responses to Question 2, November 2014

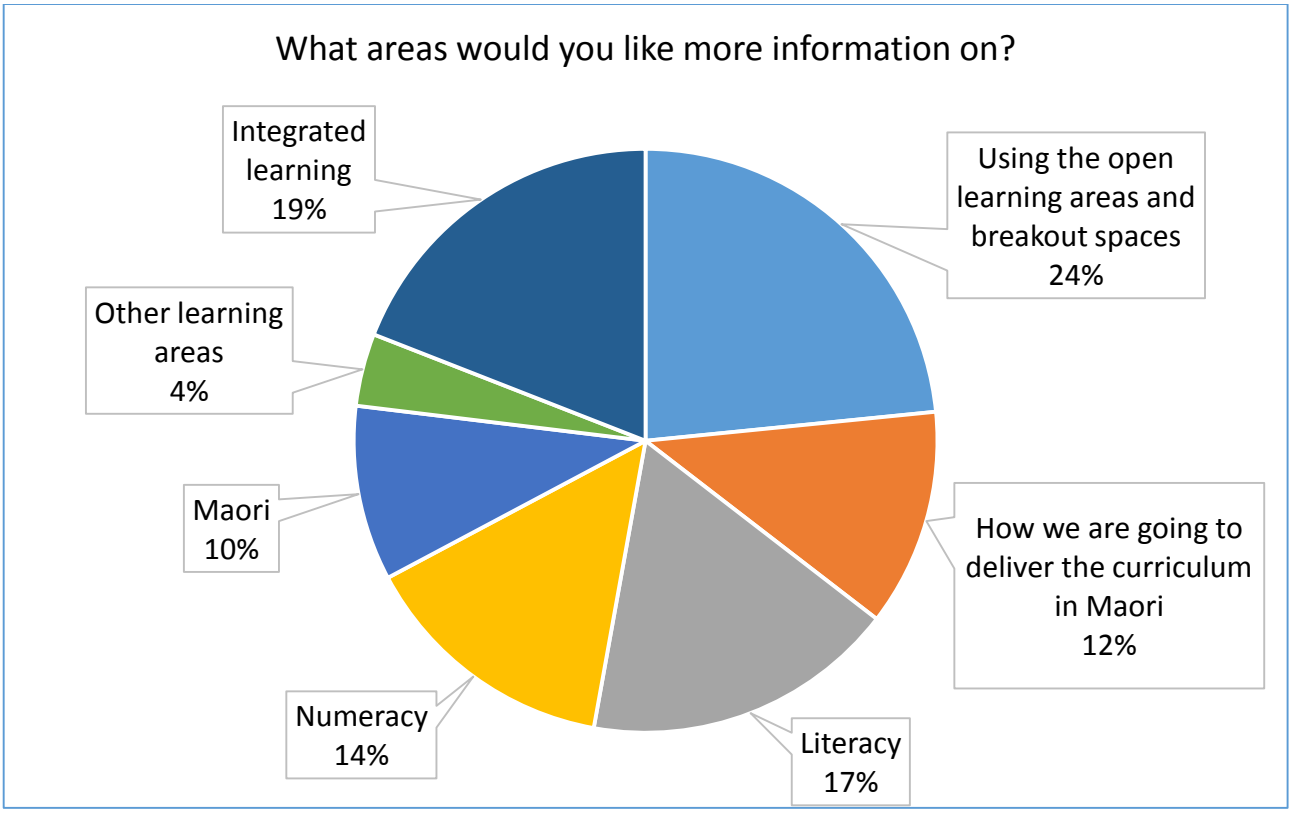

Figure 3 Responses to Question 3, November 2014

In Figure 1 we see the teachers' focus in November was firmly centred on the learning and teaching, with 63% of the responses to the first question falling into the categories of academic achievement, interesting lessons, and good teachers. Figures 2 and 3 reveal the priority and perhaps the anxiety around what learning and teaching could look like and how they might implement it. In particular, teachers were interested in seeking more information about teaching in the new environment.

December Workshop

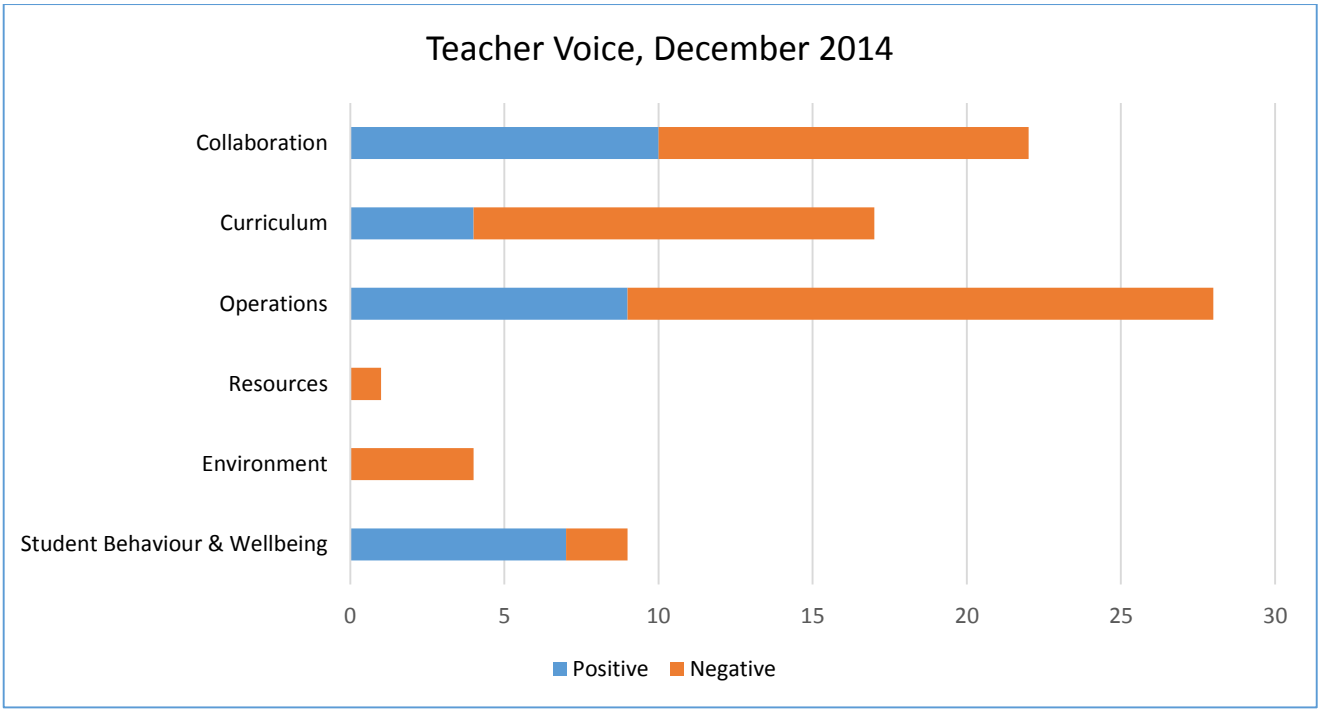

Figure 4 Teacher Responses, December 2014

The graph in Figure 4 shows how teachers were feeling in December about implementing the different style of learning and teaching and reveal the emotional response of the teachers involved. Clearly, the anxiety of the transition to the new environment and pedagogy is evident with the majority of responses negatively focussed, particularly with the categories that are relevant to personal practice. For example the operations category, which dealt with how the school will work, was the category with most responses and with a significant negative response, showing the uncertainty around how the new methods may work in practice. There was also clear anxiety around working collaboratively and how this may work in a curricular sense.

April Workshop

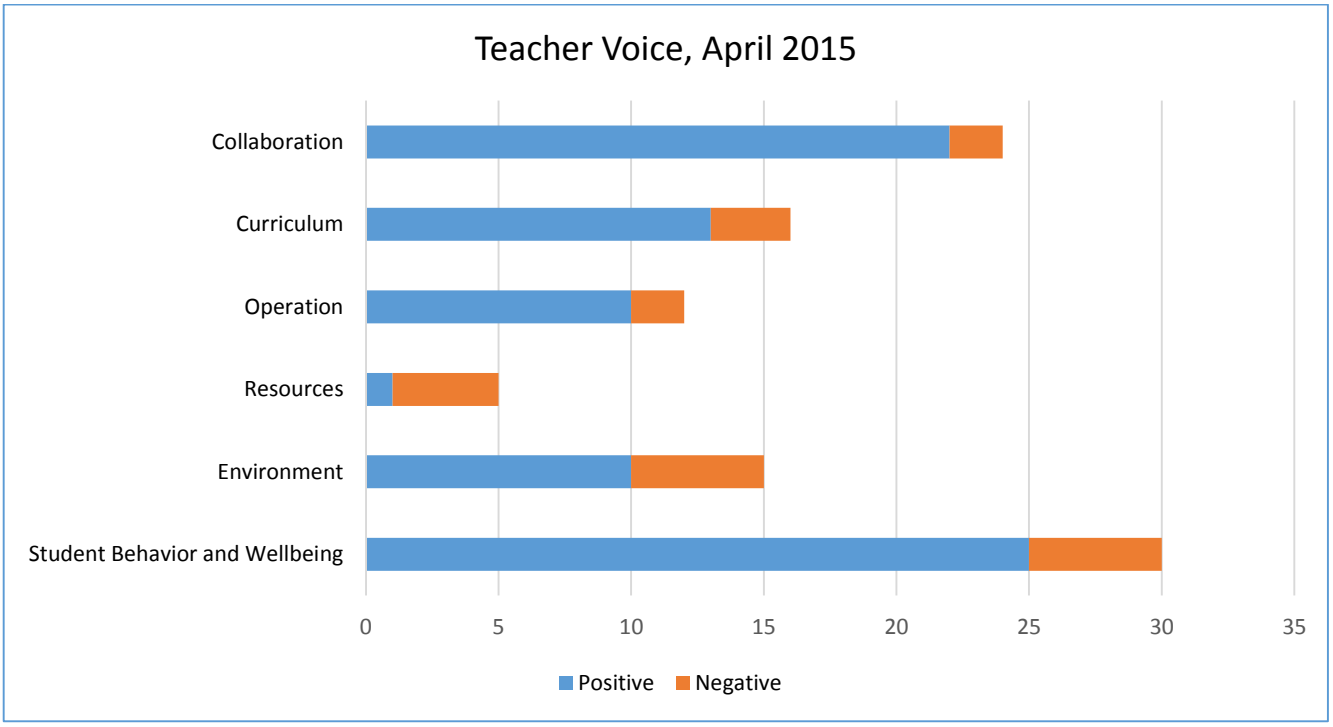

Figure 5 Teacher Responses, April 2015

In Figure 5, after a term of working with the new learning and teaching strategies, we see a definite shift in how the teachers feeling. Not only do we see teachers who are more comfortable with working together, we see a commensurate response in the teachers' perception of student behaviour and wellbeing. As the teachers felt more comfortable in their own role and way of working, their response indicates that there are not only more focussed on the needs of their students, but they are seeing positive behaviours in how students have adapted to their new environment. As they have had the chance to work together and have found this to be positive, so has their anxiety over curriculum diminished, another clear change since December.

Implications

The most important trend to consider is the resilience of the staff. High levels of anxiety over the physical and conceptual shift were evident in the beginning and early stages of the transition. The next set of data shows us the resilience of the staff as they worked hard to adapt to their new learning and teaching environment. As their understanding of how learning and teaching can work, the grasp of this and their own emotional response charts a positive response. In addition, we see evidence that as the staff became more comfortable, so did the students and teachers recognised this shift in their students, perhaps as a proxy of their own experience.

Apii Nikao: Building a Community of Learners

Editors' Conclusions

Following the arson attack that destroyed much of Avatea School, the Ministry of Education made the bold decision to integrate Nikao Maori and Avatea Schools into a single school: a Modern Learning Environment school. This would be dramatic change from the traditional schooling that previously characterized Nikao Maori and Avatea Schools.

In essence the 'traditional model" of schooling was "broken to pieces" and the entire concept of Learning and Teaching at Apii Nikao was rebuilt in a different vision, requiring a dramatically changed mind-set across the entire educational community. Students, parents, teachers and principals had to rethink the educational process and move from the traditional notion of the teacher as the "Sage on the Stage", to conceiving of education as a "Community of Learners".

The move was highly controversial, and intense and emotional discussion followed but, over time, with strong community and staff input, a plan of action evolved and was implemented.

The re-orientation of teacher and community has taken place thanks to the hard work and dedication to "making it work" on the part of the teachers, parents and administration of the school. It has been an amazing and inspiring journey, and one that will continue into the future.

Initially the Ministry of Education assumed a leadership role and Learning and Teaching Advisors invested an enormous amount of time in orientation, training and support for the teachers. As the school became more cohesive and developed its identity as **Apii Nikao**, the leadership role through this process of change transitioned from the Ministry to the School, with the Co-Principals and Marae leaders assuming the mantle of responsibility for leading the ongoing journey.

The journey continues with further professional development activities planned for the school leadership and teachers, with a goal of fostering quality Learning and Teaching within a strong Community of Learners. The aspirations of the emerging Community of Learners at Apii Nikao are reflected in the newly adopted school motto:

Te tango o te kaveinga tiratiratu.

Learning Foundations to Successful Journeys