THE MANAIAKALANI CLUSTER

At home in a digital world

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INTRODUCTION

This document relates some of the events and activities associated with Manaiakalani, a cluster of schools and community that has been established through a process of learning and change. The operation of the cluster provides a good example of the way a group of schools can work together to understand the learning environments of their students and community. It illustrates how, on the basis of information gained from multiple and varied sources, teaching professionals and community members can be successful in creating an educational environment for students to engage in learning activities that are relevant to their current and future lives.

The name Manaiakalani originates in Polynesian legend, where it refers to the great hook of Maui and signifies a safe passage, prosperity, strength and good fortune. In this document, some of the activity that has contributed to a safe passage for the Tamaki students is recounted. The story begins with some background information. This is followed by a description of some of the programmes of development and reflection that have informed the Manaiakalani programme, information about the activities undertaken by the cluster to engage students in learning activities and the observations the cluster leaders have made about outcomes to date. The Manaiakalani cluster is currently working through a further cycle of learning and change as they collaborate with researchers Rebecca Jesson, Stuart McNaughton and Aaron Wilson of the Woolf Fisher Research Centre, University of Auckland, in a wide-scale evaluation of their cluster activity. This evaluation will provide the cluster leaders and community with information about what to change next and how to change it.

B. MANAIAKALANI – DEMOGRAPHIC INFORMATION

PARTICIPATING SCHOOLS

Manaiakalani is a cluster of schools, nested in the Tamaki Basin, Auckland. The Tamaki Basin, established as a residential area for WWII veterans and their families and now presenting as one of the most densely populated areas in the country, has several schools in close vicinity to one another. The cluster comprises 12 schools, most of which are classified as Decile 1a. Within the cluster there are a range of types of school including ten full primary schools, one of which is a special character school and another a special school, and one secondary school. The Manaiakalani cluster is flanked on each side by Decile 10 schools, one of which, Stonefields is an 'associate' member of the cluster.

Table 1. The schools belonging to the Manaiakalani Cluster and their principals.

SCHOOL	PRINCIPAL
Glen Innes School	Jonathan Hendricks
Glenbrae School	Leslie Elia
Panmure Bridge School	Richard Johnston
Point England School	Russell Burt
Ruapotaka School	Gael Vickers
Sommerville Special School	Diane Hankin
St Puis X	Paul Coakley
St Patricks	Carmel Bullot
Tamaki College	Soana Pamaka
Tamaki Intermediate School	(Until closure end of 2012)
Tamaki Primary School	Corinne Hansell-Pune
Te Kura Kaupapa	Katene Paenga
Stonefields	Sarah Martin (linked through shared professional development)

Tamaki College, Panmure Bridge, Pt England, St Pius X, Glenbrae and Tamaki Primary have been in since the cluster was formed in 2007. Tamaki Intermediate School belonged to the cluster until its closure and the remaining schools have joined the cluster in the past two years. A map of the school district is inserted below.
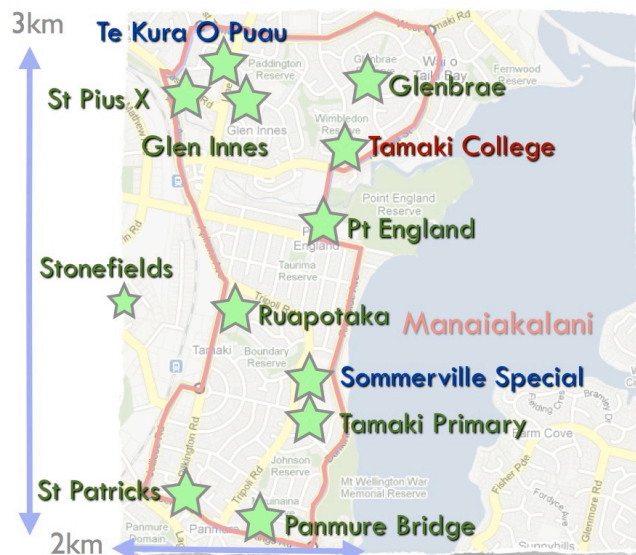
Figure 1. The schools of the Manaiakalani Cluster

The Manaiakalani Cluster has 2761 students enrolled at July 2012. The ethnicity of students in the schools comprises approximately one third Māori and two thirds Pasifika as well as a minority of a range of other ethnicities, several entering the school as refugees from overseas. The percentages of ethnicities represented in the Manaiakalani schools are illustrated in Figure 2 below.
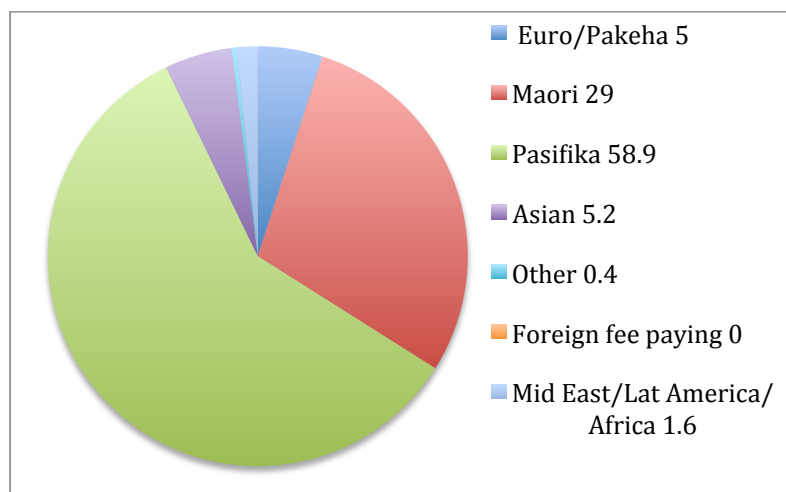

Figure 2. Figure showing the proportions of students from each ethnicity.

C. BACKGROUND INFORMATION

There is a steady stream of national and international visitors to the Manaiakalani schools, some of which are receiving guests both day and night.

On a visit to Manaiakalani Schools what might you expect to see? You would probably see students enthusiastically engaging in their work, voluntarily working to find solutions with others and selecting, from a range of learning media, the means that best allowed them to achieve their goals. In the Manaiakalani Schools, the students' interaction with one another is congenial and respectful, as are interactions among students and teachers. Parents who arrive at school to discuss their students' work or to help with learning programmes arrive looking relaxed and smiling and are greeted in kind.

The Tamaki Basin population has always been well regarded for its sporting and artistic ability but what are now appreciated are the wide-ranging qualities and competencies of the people who live there. The PLD facilitator for the Manaiakalani schools, Dorothy Burt, noted that some dominant discourses promulgated in relation to the local community have not always been helpful or reflected the reality of the people who live in the Tamaki Basin. Dorothy explained that a significant group of residents in the Tamaki Basin now expressed the wish that their children remain in the local area once they graduate from school. This view represents a shift in thinking from earlier times when a portion of the community considered moving on from the area to represent success. Negative views have also been created or strengthened by media reports that have focused on isolated incidents and placed responsibility on residents for the challenges they faced. An example of this includes an ill informed judgement about the contents of students' lunches. The community has indeed faced a number of challenges, one of these being for the necessity for some families in the community to move their children from one school to another due to the insecure nature of housing in the area. This situation, which has affected the continuity of children's education, is currently being addressed through the Tamaki Redevelopment Programme.

In this document some of the strategies undertaken in the Manaiakalani Cluster to establish an environment in which children can learn, and want to learn, are outlined. It shows how the Manaiakalani group sought equitable educational opportunity for the students in their schools so that they could prepare to work alongside others who had the benefit of extensive learning experience. While the Tamaki Basin schools were able to impact on the educational opportunity for students between 9.00 and 3.00, they were aware that students from higher decile schools often had access to learning activities that extended beyond these hours. The group asked, 'How can our students have similar experiences?' The cluster wanted to engage students by creating equivalent opportunities for their students and linking the curriculum to children's interests. For some students, this meant fostering a sense of curiosity.
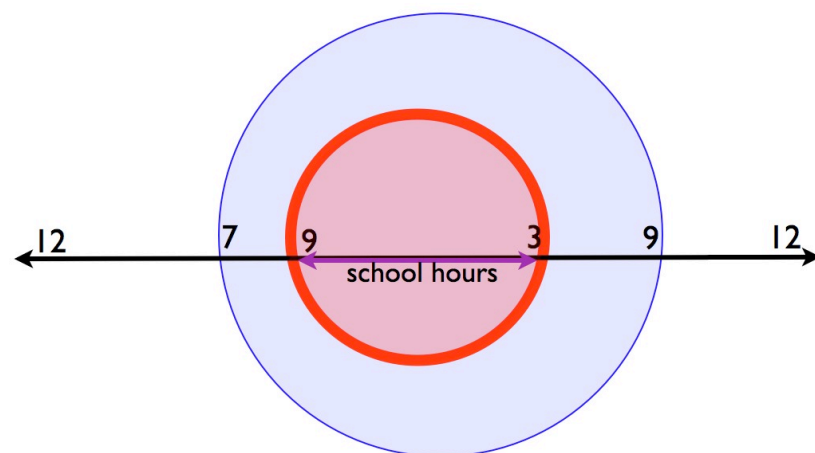
Figure 3. Extending learning opportunities beyond schools hours.

BRIEF HISTORY OF THE MANAIAKALANI PROJECT

Before going ahead with this documentary, it is important to consider the social, cultural and historical context of Manaiakalani. The cluster of schools and community has been brought about by a large number of people creating and working amidst a collaborative and dialogical environment. This has included

the people who work with children in schools, the parent community, local and national businesses, and, of course, the students themselves.

The seeds for the cluster were sown long before its official inception. The work of Russell and Dorothy Burt must be acknowledged here. Two decades before the formation of the Manaiakalani cluster, Russell and Dorothy were teaching in Papua New Guinea in a community that was, to a large extent, denied access to knowledge of events and perspectives beyond their own villages. The newspapers that were received by the community were at this time three days old and there was no television. Aware of the educational value of sharing and constructing knowledge with others, the two teachers brought television to local villages and introduced, among other programmes, *Playschool* to support children's learning. They brought the world to those who at that time did not have the opportunity to experience it. Later, opportunities for the educators to attend international conferences, such as the American Educational Research Association (AERA) annual conference, reinforced their valuing of the integration of global and local knowledge.

The joining of school and community is a key feature of Manaiakalani and the cluster leaders work to connect with parents. A number of educators live in the community, their lives interlacing with those of their students and parents. They share in community activities, the boundaries of professional and personal relationships proving no obstacle as they are based on open and authentic interaction. Others come to the community to share and exchange their knowledge.

While the cluster has sought to connect the students with the knowledge available in the global community, they are ever-mindful of the need for students to acquire, understand, value and build on their local social and cultural knowledge. The principles of Te Tiriti o Waitangi are embedded as operational practice in the Manaiakalani cluster with families, schools and community connecting as safe, participatory partners in determining the children's education. The invited and genuine partnership with families allows all parties to

engage in decision-making so that the systems developed within the cluster are contextually acceptable and serve the children's interests. The authentic nature of the partnership means that power, risk and reward are shared and distributed across families, volunteers, community, schools and philanthropic, commercial and professional partners.

D. EXPLORING THE LEARNING ENVIRONMENT: INSIGHTS FROM INTERVENTION

The exploration of the learning environment has occurred through observing the activity and outcomes of cycles of professional development and improvement projects as well as purposefully established projects for inquiry. These are discussed below.

SCHOOLING IMPROVEMENT AND INFORMATION AND COMMUNICATION TECHNOLOGIES PROFESSIONAL DEVELOPMENT

Several of the schools now involved in the Manaiakalani project had previously been involved in a schooling improvement project (2001-2011). This project aimed to improve students' performance in literacy and numeracy and was called the *Tamaki Achievement Pathway* (TAP). While this project was useful in developing learning relationships among schools and addressed some aspects of learning, it was not viewed by the cluster of schools as a programme that engaged the students. Concurrently with the schooling improvement project seven schools in the Tamaki area were involved in Information and Communication Technologies Professional Development (ICTPD; 2004-2006). The latter project was undertaken to support teachers to acquire the information technology skills and pedagogical knowledge required to support effective classroom teaching and learning through incorporation of digital technology.

The schools observed that the students enjoyed using the digital medium in learning activities, connecting voluntarily with the tasks. This finding led the schools to ask, "Why not combine these two approaches?" An *Extending High Standards Across Schools* (ESHAS) project involving seven schools in the area, 12

lead teachers in classes from Year 1 to Year 13, was developed to improve achievement and digital capability. The ESHAS project involved a literacy cycle with specific activities that fostered reading, writing, speaking, listening and thinking and a programme individualised for each participating classroom. Through this programme, the students demonstrated improved achievement in this area. The group of schools asked, "If appreciable changes are evident with the existing resource, what could be done with more?" Through this ESHAS project, the original core of Manaiakalani, the cluster, was formed.

FOUNDATION FOR THE PROJECT

When the Manaiakalani group formed, they were aware that they were building on a positive foundation of experience, knowledge and skill. As mentioned, many of the schools had already worked together on the TAP programme and had established collaborative processes and relationships to support them. They already had some established events that brought the schools together. This included schools' sport across the Tamaki Basin where today a specifically appointed sports coordinator has been employed to link the sporting activities of the schools. They also had a well-established, effective Resource Teachers of Learning and Behaviour (RTLB) group with practitioners who had developed strong relationships with the schools in the area and these schools' wider community. Within the community, there were also several students, past and present, who had earned recognition for their achievements, particularly in sport and arts.

There were obviously some challenges to overcome in the Decile 1a schools' community but these were not considered insurmountable. For example, as discussed later in this document, the schools wanted students to have digital devices for use at school and home, an aim that would challenge many communities. However, the Manaiakalani group worked to make the devices accessible and affordable to the families as well as suitable for students' learning.

D. Goals of the Manaiakalani Project

The year 2008 was a turning point for the schools in the Tamaki Basin. By this time, it had become physically and pedagogically possible to develop a digitally connected learning network across the area. Although no funding was available at this time to resource the large scale operation that Manaiakalani has come to be, the possibilities had created an imperative for the founders to expand educational opportunities for their students. They began thinking about what was possible and then designed a pathway to retooling the learning environment.

The Manaiakalani Cluster of Schools was retooling its learning environment upon the strong foundations of the schools' history of working together. They had shared in projects to raise student achievement and had shared their observations of events that had engaged, or 'hooked' the students into learning tasks. The purpose of developing the Manaiakalani Cluster was to combine the positive elements of children's success in order to maximize learning opportunity.

The cluster's vision was to support students to become "lifelong, literate learners who were confident and connected anytime, anywhere, any place", and who would be prepared for work and would contribute positively to their community in the future (See Manaiakalani website, http://www.manaiakalani.org/project-management/project-definition#TOC-Vision-of-the-Manaiakalani-Programme-). More specifically, the Manaiakalani Project was set up to:

- Develop a model for 21st C teaching and learning
- Motivate students to engage in learning activity
- Lift student achievement
- Empower students to contribute personal voice
- Create and discover authentic audiences for students' work.

In 2011, The Manaiakalani Cluster was pursuing goals for each of the participant groups as listed below. For a set of specific objectives to meet these goals go to

http://www.vln.school.nz/resources/view/55620/maynov-2011-may-2012-cluster-programme-goal-a (you will need to change the final letter to see each goal. E.g. this link is for Goal A. In the link for Goal B, a b replaces the a).

Outcome A: Students who are confident, connected, actively involved lifelong learners.

Outcome B: Teachers who have developed evaluative capacity, professional knowledge and pedagogical understandings to create a digital age learning environment

Outcome C: Capacity in the parent community.

Outcome D: Collaborative capacity in the stakeholding agencies to enable them to contribute powerfully to improved education outcomes in Tamaki

E. THE ACTIONS TAKEN BY THE MANAIAKALANI CLUSTER

The actions taken by the Manaiakalani Cluster enable its people to work in accordance with the overarching philosophy of 'Learn, Create, Share'. Students in the Manaiakalani Schools are, as are their teachers and parents, encouraged to share and reflect on their knowledge and to disseminate information to audiences for whom it will stimulate interest and where it will contribute to further knowledge construction.

Creating a learning environment that supports work engagement of the students in the Manaiakalani Cluster has involved taking a multi-faceted approach. It has included increased use of digital technology, furthering links with students' families and the wider community, the development of new teaching practices and communication among the broad group of people who participate in students' learning.

Building from the ESHAS project, late in 2010, two classes were set up as pilot studies for the Manaiakalani one to one approach to teaching and learning. The pilot projects was designed to develop, evaluate and extend a cycle of pedagogy and literacy (see figure 4) in which students 'learned, created and shared'. The teachers volunteered to be involved in the pilot and, in the end, there were 25

classes participating. The pilot project also involved procuring devices for students for use at school and at home and reviewing options for cloud connection. A key consideration in relation to technological systems and devices was their sustainability through compatibility with the current Tamaki Development Plan.
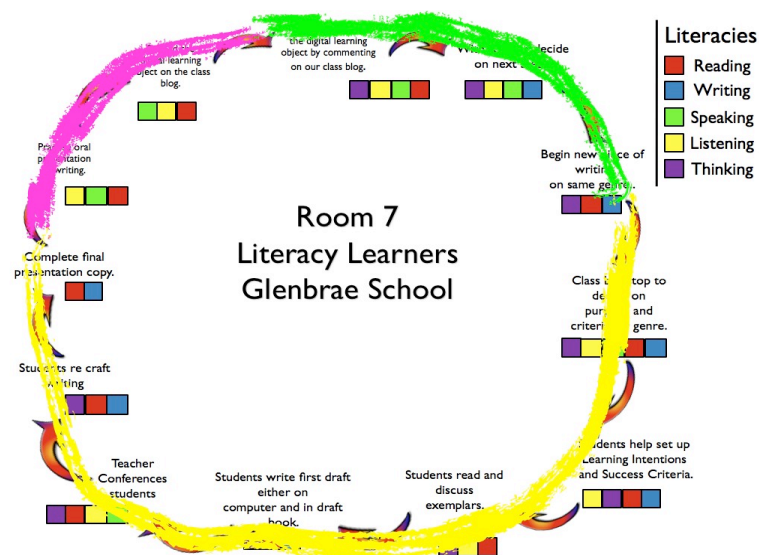

Figure 4. Figure showing the cycle of literacy in which students engaged in a process of learning, creating and sharing. The learning phase is shown in green, the creating phase in yellow and the sharing phase in fuschia.

The pilot project contributed to the understandings upon which the cluster pursued six aspects of the students' educational environment. These are listed below. They are placed in no particular order as the components were implemented simultaneously.

1. Infrastructure
2. Professional learning and development
3. Device procurement and provision
4. Cloud solution
5. Operational baseline
6. Community development

1. INFRASTRUCTURE

THE HACKERS

In July 2010, Pt England principal School Russell Burt sent an email to two people with expertise in digital technology to see if they had an interest in supporting the school on their retooling venture. This invitation and the nature of support was open at this point. From these two emails, more people were contacted and, at the first meeting to discuss the concept, 12 people from the local and wider community attended, bringing expertise and interest in internet technology and a strong desire to support children's learning. The group called themselves the 'Hackers', and are now an integral part of the Manaiakalani Cluster. The Hackers group has a diverse membership, each person contributing valuable information and activity. They include members and organisations who contribute to the Manaiakalani cluster as commercial partners and as volunteers. Andrew Gurr from Fusion Networks, Jan Zawkdzki from Hapara Ltd and Paul Beatty from Equico Ltd have helped to design and deliver wireless solutions, cloud solutions and financial solutions respectively. Management of the Hackers team and activity is not hierarchical and everyone is afforded equal voice.

The Hackers meet as a group each second Tuesday evening to discuss matters related to digital communities and the ethical issues associated with these. Attendance is voluntary and people attend when they can. They offer expertise around the tools for accessing the internet, working on making the digital environment more manageable and consider the various funding implications of options. The Hackers also provide direct within school support. This has included such tasks as checking Chromebooks and netbooks before students begin working on them.

DEVELOPING THE MANAIAKALANI TRUST

The Manaiakalani Trust was established in February of 2011 to allow the cluster activity to be funded. Pat Sneddon, a businessman and corporate director with vast experience working with not-for-profit organisations, was asked to chair the governance board of the trust. The membership of the trust board is diverse,

balanced to represent the various groups of people with an interest in the education of students in the Tamaki Basin. The trust comprises corporate and local community members, the ratio of local members always being higher to allow a predominance of local input. This ratio is reviewed from time to time with a recent adjustment being made to rebalance the cultural representation on the team. One third of the funds that pass through the trust are contributed by parents. The chair of the Manaiakalani Education Trust, Pat Sneddon, commented on the value of parents' contribution in his report of August 2012.

> "The drive to digital citizenship for these young New Zealanders is well underway with the full support of their parents. I tell the parents every chance I get that it is their $3.50 a week that has got this programme $4.5m committed to date. Why? It is precisely because they are investing in their kids (no matter they earn $19k pa) that others say "I'm for supporting that". Simply human reflex to help those who help themselves. That $3.50 pw per child over 4 years has provided over 30% of the money committed to this project. The parents are the single biggest contributor group." (http://www.manaiakalani.org/home/august-2012-update)

2. PROFESSIONAL LEARNING AND DEVELOPMENT

Tailored Professional Development

Professional Learning and Development in Manaiakalani has focused on contemporary pedagogy and familiarity with the digital environment. The Cluster moved away from a 'one size fits all' approach to selecting professional development opportunities. For example, the seven original schools engaged the support of a literacy expert to work within their schools. They also implemented Visible Learning. This pattern of pursuing purposefully selected professional development has continued. A key aspect of the Manaiakalani Cluster is the exchange of knowledge among teachers and students through shared and diverse professional experience.

An example of tailored professional learning is illustrated in the multi-level professional development approach taken by Pt England School to meet the Manaiakalani goals. While some programmes are new and have been designed in accordance with the cluster procedures, existing programmes that are effective and support vital relationships have been retained and further developed. Some professional development opportunities are being constructed at this very time.

The learning environment at Pt England School is structured so that every participant, whether they are students, teachers, parents, community members or the school as a whole, can learn with and from one another. This can be seen in the learn, create and share philosophy of learning, the systems inquiry process currently being adopted to support the ongoing professional learning of teachers, the specific subject areas that are addressed through targeted programmes for students, teacher professional development and the numerous learning opportunities set up with parents and the community. These are outlined below.

Values

Pt England school has a well established values programme that some consider has been the primary contributor to an appreciable turnaround in students' engagement in school activities and the nature of their interaction. The programme begins each Monday morning with a group of students meeting with the principal in his office to decide on the particular value or concept that will be the focus of the week. This value is related to a year-long overarching set of values. During the week the students prepare a multi-media depiction of the selected value and perform this at their Friday morning assembly. An example of a value might be ' welcoming visitors to the school'. The topic is threaded through the general programme in the school during the week, giving students opportunities to discuss their own experiences, in this case of being welcomed, and to discuss ways to help others. Cultural perspectives and practice are taken into account in the values programme, including ensuring that, in the largely Pasifika community, the school principal takes an active and visible role in heading the programme and leading the school assembly. The programme has an

entirely positive focus, helping students to consider actions that they *would* do. It avoids negative conceptualisations and any comparison of new and old narratives. Learning from the values programme is maintained through quizzes and frequent reference to values already covered.

Teaching Inquiry – Learning, creating and sharing

A system of teacher peer support and inquiry is being set up at Pt England school. As for the students, the teachers at the school 'Learn, Create and Share'. The peer support system will involve teachers working in pairs with registered teacher colleagues through cycles of inquiry in which they will be able to reflect on their practice, share and create professional knowledge and further their teaching knowledge and skill. The model of inquiry to be used is based on one that guides much of the solution construction in the school, a model shared by Jannie van Hees while working on a language project with the school some years ago. This programme of peer support and inquiry is viewed as visible learning for the teacher.

Development in teaching subjects

Alongside the 'learn, create, share' cycle, at Pt England School there is always a particular focus placed on one or two areas of development. While literacy has had a sharp focus in previous years, this year, mathematics is receiving most attention. The school is engaged in an ALiM (Accelerating Learning in Mathematics) programme, in which identified cohorts of students sharing similar learning challenges will be supported to make progress through targeted instruction. Underpinning such programmes is professional development in mathematics, an approach to learning, creating and sharing knowledge of mathematics teaching. It is an approach that includes staff, including the principal, modelling at classroom, team and whole school levels and people planning in teams with external developers. The approach involves dialogue between colleagues and is rigorous and challenging.

Learning with parents and community

Several programmes developed to support the learning of students have involved the school community. One of these is the home-school partnership

programme that was established with the support of Jannie van Hees as part of an English programme for speakers of other languages. This programme, in which teachers and parents come together to consider the needs and priorities of the school and the community, has been running for a decade now. Through this partnership, diverse understandings are shared and their implications for the students' learning are raised, allowing for the development of appropriate approaches to teaching and learning in home and school settings.

The school, as other Manaiakalani schools, has also engaged with community in specific programmes to support students' learning. These include a *Reading Support Programme* that was originally set up by Dorothy Burt in 1991. This involved local families voluntarily reading with children at school. As time went on the need for more volunteers increased and people were recruited from neighbouring areas. This programme continues to support the reading of students whose reading age is between 7 and 9 years and who are approximately a year below their chronological age. There are now 50 volunteers working, for various amounts of time, with children in the school. They read with the children for a brief time and have conversation with them about the material. The volunteers focus on the content and related experience rather than correcting the students. The school now facilitates a *Reading Together* Programme that also involves working with parents. Learning programmes extend beyond that of the students in the school. Parents can enrol in a course in Maori that includes Tikanga as well as Te Reo. This popular course has a set number of places and is always fully subscribed.

Learning conversations

One aspect of professional development that has been applied in Manaiakalani schools is Learning Conversations. An example of this can be seen at Tamaki Primary School, where the principal, Corinne Hansell-Pune, discussed the general expectation that every conversation between teachers and the students in their school related to students' learning and was respectful, communicating caring. The establishment of learning conversations began by building on the students' strengths in sports and learning the skills and rules of games, then

moving into the classroom with the gradual addition of new elements, such as digital devices. This progression was accompanied by increased work engagement and positive interaction among the students.

Cybersmart Curriculum

The Manaiakalani cluster has undertaken the challenge of co-constructing an intentional cybersmart curriculum to support students to optimize their experience through the internet. Much of the resource and information available for digital learners in New Zealand is narrow and does not support the reality of young people living in a digital age. The Cybersmart curriculum addresses eight important categories and the traditional bogies of 'safety and bullying' are addressed inside Smart Relationships and Smart Footprints.

Induction

It is one thing to have highly prepared teachers, and another to keep them in the schools. Clearly, teachers with skills to work effectively with students in the 21st Century digital world have no difficulty finding new work opportunities. This might have presented a problem for continuity, were it not for an induction programme the Cluster has developed for all new teachers at the beginning of the year. New teachers, supported by Fiona Grant, Professional Development Facilitator for the Manaiakalani Education Trust, are able to find out about the ever-developing pedagogy of the cluster and the systems that operate within and across the schools. Below is a diagram (figure 5) showing the way in which newly developed pedagogy informs the induction of new schools and teachers and the point at which newcomers contribute to the ongoing development of Manaiakalani.

Manaiakalani PLD
2013

HODs/ Deans **IT Admin** **Researchers**

MITA

New Schools

Principals

Innovation
Dorothy

Karen Amber

Secondary School

Consolidation

Primary Schools

Orientation
Fiona

Curious Schools

Kyla /Aireen Ted Sarah

Elfrida Joy

Curriculum Leaders

New Teachers

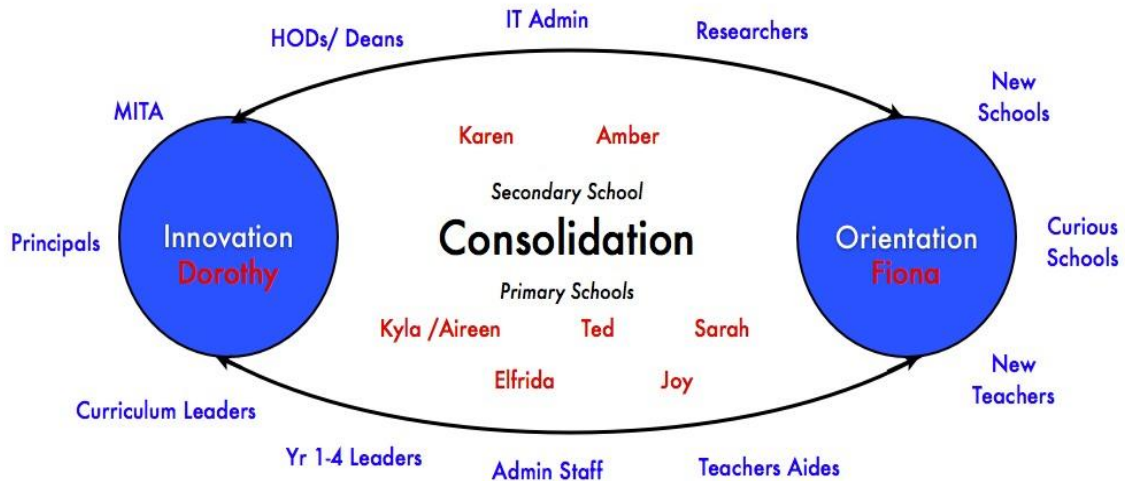**Yr 1-4 Leaders** **Admin Staff** **Teachers Aides**

Figure 5. Development of the pedagogy of the Manaiakalani Cluster and Orientation for new teachers.

Research as Professional Development

The Cluster is committed to the ongoing research of developments in the schools and community. Projects of research, such as that currently taking place with the Woolf Fisher Research Centre, go hand-in-hand with opportunities for teacher professional development. This year, the cluster has a new initiative, the Manaiakalani Innovative Teacher Academy (MITA). This initiative recognises the work of teachers who are making significant contributions to the development of pedagogy within Manaiakalani. This year, eight teachers who have demonstrated innovation in their work have been selected from across the cluster to pursue research topics that relate to the learning of the cluster's students and community. Research projects are designed to be of benefit to schools, community and the teachers themselves. Topics include students' transition to

the digital learning environment, creating online, interactive resources to raise literacy achievement for Pasifika ESOL children entering school, motivating boys to write and ways that the special character of a school can be integrated across the school curriculum.

3. DEVICE PROCUREMENT AND PROVISION

Multiple Media

Students in the Manaiakalani schools use a variety of media in their classrooms, including digital devices, pens and paper, and these are available to the students to select as appropriate. Among the digital devices used, students have netbooks, for which the hackers designed an operating system, and chromebooks that operate completely in the Google environment. Teachers select to enable applications from an extensive range in the Google Apps management consol and the Chromebook web store. In this way, teachers can ensure that the learning environment is compatible with the programme they are running. The school administration is also able to make calls on which applications they consider suitable for the wider learning environment.

Device Selection

In determining which devices are to be used in the cluster, Manaiakalani are guided by the principle expressed succinctly by Pat Sneddon, "reduce choice to increase opportunity". To obtain devices for the schools, connections are made with the prospective provider at the end of Term 3 for the coming year. Requests are made to a range of suppliers for loan devices that can be tested in the school. That is, they are used by the students to the fullest but with due care. About 30-50 people, including students, at both primary and college level, teachers, principals and members of the home-school partnership trial the devices and complete an evaluation spreadsheet. Interestingly, there has always been much consistency across the scores of all groups and this has reduced the difficulty of decision-making. In the last selection period, options were narrowed to three front-runners for the negotiation phase. As well as being acceptable, devices

must be affordable. Any devices that cannot be landed with a bag and three years warranty at or below the top price-range are eliminated. Time of delivery is also an important aspect. If they are not ready for February, students' programmes can be compromised. Similarly if a device does not support the pedagogical approach taken by the cluster it would not be deemed suitable.

4. CLOUD SOLUTION

Teacher Dashboard

Hapara Ltd, an education technology company (see http://hapara.com) that is part of the Hackers group, aims to help educators used cloud-based tools to positively impact student learning. This company has developed a platform that structures Google Applications around education in a way that can be customised to fit with individual schools' programmes. The Teacher Dashboard, developed by Hacker and Hapara Principal Jan Zawadzki in 2010, has been designed to help teachers work closely and effectively with all of their students.

This system was co-designed by the Manaiakalani group with Hapara as, in order for Visible Learning to occur in a cloud environment, it was essential that the key players in the learning community had visibility of the work. They needed to ensure quality input from the teacher, quality feedback and feed-forward from the partners, including parents, in order to collaborate safely with other learners. To ensure that learn, create, share could work safely and well, and that students could share information in public spaces, for example 'blogger', parents and teachers had to be assured of effective oversight of the work and experience of the learner.

Manaiakalani staff, along with Hapara, continue to design, refine and build, expanding through iterations of the teacher dashboard. Current developments include: a transparent teacher planning module, effective assessment that associates outcome metrics with live student work, and methods for reporting for parents and the state. These progressions will further enhance visible learning in a managed learning environment. The cluster is trying to provide the

optimal exposure of students' work to teachers and parents, and working to see that learning, in the light of learning intentions and outcomes, is visible. The teacher dashboard has given children's learning visibility with places for teachers and parents to comment. The availability to parents of this linked form of information is expected to reframe the way that teacher-parent conferences are conducted.

5. OPERATIONAL BASELINE

Operational baseline refers to the systems that attend to the many administrative and technical aspects of running an efficient, effective blended learning environment. This includes 'breakfix', the pace at which student can regain tools after they are broken. The emphasis on this turnaround time supports to minimize disruptions in students' activities. Operational baseline systems are also concerned with asset tracking, knowing who has what, keeping up-to-date records of warranties and insurance. It includes procedures for distributing devices for the start of the year, and making decisions about which devices will go where and what spare parts will be required. The Manaiakalani Cluster has developed a policy to streamline their operational baseline.

6. COMMUNITY LINKS AND DEVELOPMENT

Connecting families and schools

The Manaiakalani Cluster is characterised by its strong links with its families and the community. Parents are encouraged and supported to join with schools in sharing in their children's education. They are welcomed into schools where supports for genuine participation have been instated and barriers to school-family relationships have been dismantled.

Schools have worked in various ways to ensure that parents and school staff appreciate the relevance of home and school activity for children's learning. For example, in one school, parents were invited to fun events such as a 'Movie Night', advertised with a professional brochure through the community. At this

well-attended event, the children made a brief performance and, at the same session, the school taught the parents how to blog on the school website. The parents said they found this opportunity to engage with the school valuable and have continued to support school staff and their students in their blended learning.

When decisions are made within the cluster, whanau and community members are consulted at each stage of the way. The relationships developed among schools, students and whanau are not short-term only for the length of time a student is in school. The Manaiakalani schools maintain contact with their students as they leave school and move into tertiary education or work. For example, some graduates are to be found in the schools working, while they are studying at university, as part time teacher aides for students with special needs.

The digital environment – at home and at school

The Manaiakalani cluster shares school internet facility with the local community. As the internet was used only during the school day and the schools were paying for full time internet, it made sense to allow community members to use the resource. This activity started at Point England School although it was a community effort to initiate and plan the scheme. Now it is a feature of all the Manaiakalani Schools. Students, parents and teachers can share children's education through mutual access to shared sites. To ensure that parents were able to access their students' learning programmes and work and to help their students with their learning tasks, the Manaiakalani group provided free training sessions in a face-to-face environment. One Manaiakalani parent trainer is employed full time to support parents to connect with the schools in the on-line environment.
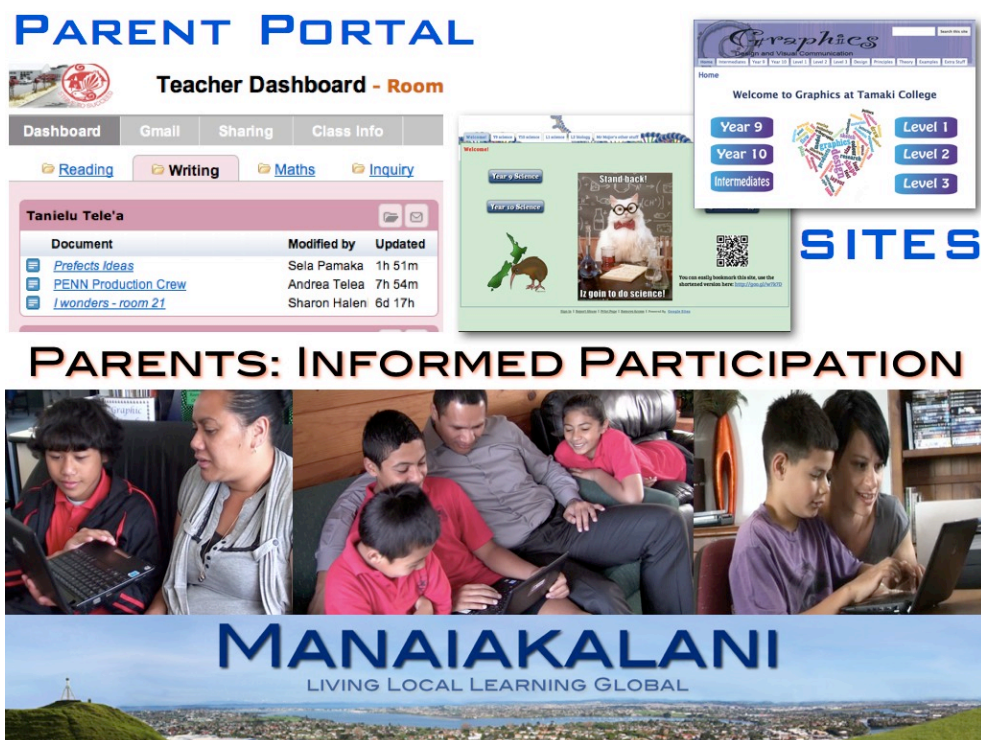
Figure 6. Parents participation in children's education through the Teacher Dashboard.

This sharing through digital technology is not only between schools and the community but between schools. Each school has a particular aspect of knowledge to contribute and teachers are encouraged to share and construct new ideas. Through the shared Manaiakalani website, teachers are able to view the wide range of professional development opportunities.

Integration of cultural perspective and schooling

The cultural relevance of the school programmes is fostered through the schools' connections with their surrounding community. Strong relationships are developed with parents and people who live in the community by making their schools accessible in face-to-face and on line interactions. For example, the Principal at Tamaki Primary has her office door facing the front door and makes sure that she welcomes every new child and their family enrolling in the school. The principal said that she and her staff prioritise knowing who the children are, actively working to understand their cultural practice and to provide activities

and events that allow them to appreciate links between home and school. The students in Tamaki Primary School are predominantly Tongan and Maori and when events take place and there are tasks to do, they take care to ensure the right people are asked to perform particular tasks and that procedures are acceptable for individuals and groups.

F. WHAT OUTCOMES HAVE THE CLUSTER OBSERVED?

1. OBSERVATIONS OF THE MANAIAKALANI CLUSTER

In a cluster of schools that value and promote up-to-date pedagogy and design learning environments to excite and support students and their families, there are bound to be positive outcomes in areas such as student engagement and academic achievement. In August 2012, Pat Sneddon as Chairperson of the Manaiakalani Education Trust, reported on the clusters' observations and achievements, noting that the students had made improvements in learning of reading, writing, numeracy and oral expression across the cluster (see http://www.manaiakalani.org/home/august-2012-update). Manaiakalani Cluster is currently working with the Woolf Fisher Research Centre to further identify areas that have progressed and where future ventures are best directed.

The provision of high quality social and physical environments is evident when visiting the schools. Students and adults at the schools regularly relate respectfully with one another and are comfortable welcoming visitors to their school. The physical environments of the schools reflect the cultures and languages of the surrounding community and are well cared for by schools and families combined. Students' health is also considered. For example, Pt England school underwent a process of review and accreditation to ensure that its was a 'Gold Star Health Promoting School' with a Tuck Shop offering fruit and other healthy options for lunch. The achievements of the students can be seen on the internet (Manaiakalani.org) and in other public places. Manaiakalani schools now stage an annual film festival at a Hoyts Cinema sharing the productions of the students. This festival has been a resounding success in terms of the quality

of the work displayed, the delight of those attending and the relationships that develop through shared positive experience.

Students in the Manaiakalani Cluster schools now have the opportunity to learn 'any time, any place and at any pace'. The hours of access to multiple forms of knowledge through the internet have been extended beyond that of the school day as students and families connect wirelessly using purchased digital devices. When Pat Sneddon published his August 2012 report, 2500 Manaiakalani students were working in the digitial environment and Tamaki College had become the first state school to become fully digital with over 700 students learning through the use of netbooks. The parent investment in education remained high, with 83-87% of the cost of netbooks (weekly payments) and damages, loss and repair being covered by the parents. The Manaiakalani Trust has been successful in procuring the funds required to supplement this funding, to buffer where equity issues present and to sustain the digital learning environment.

2. STUDENT PERECEPTION OF THE DIGITAL LEARNING EXPERIENCE

In December 2012 students from nine Manaiakalani Schools were asked to write reflective comments about their year of learning in a digital environment. Voluntary reflective comments were received during summer holidays from 250 of the 800 students in the cluster. These comments were organised into dominant themes by Dorothy Burt. Some key points emerging from the review of comments are listed below and illustrated with representative quotes. From the comments made by the students it was clear that the students had enjoyed this mode of learning and saw it as fun. The students indicated increased motivation and engagement in learning tasks, leading to what they recognised as increased success in their schoolwork. All students posting comments considered their engagement in digital learning to be a positive experience, in some cases a life-changing event.

Extended learning environment

The introduction of digital devices had extended the opportunities the students had for learning in terms of time, place and availability of information. They were able to learn any time, any place and anywhere.

- *With our netbooks not only can we do our work at school but at home as well. We are not only learning from Ms. Garden but from everyone around the world. Sharing our work can also teach other people. (Jorja, PES)*
- *Even though school finishes, our learning hasn't, when we can still learn maths, writing and reading at home (Jonita, PES)*
- *The great things about having a netbook, besides having free time, is actually learning about other stuff. Reading, writing and maths is all fun to learn about (Laita, PES)*
- *This year a netbook has really helped me because I had a choice of choosing different topics whenever. …. I really liked taking it [the netbook] home to do extra work so that on Fridays I do not have to catch up (Rocky, PES)*
- *If I'm sick at home I can still do what my class is doing because of the class site. I can catch up with what my class is doing (Roezala, PES)*

Digital devices for learning: an enjoyable learning experience

Some students reported some initial apprehension about using the devices, fearing that they may break them or not know how to use them. These concerns were quickly overcome as they discovered how easily they could find their way around the internet through their devices. The students viewed the devices as supportive of learning, allowing them to access relevant information quickly. One student commented that he could not imagine what it would be like without digital tools and another commented on the value of learning to be 'cybersmart'.

There was no doubt that the students enjoyed using the netbooks and learning through the digital medium. They found digital devices were convenient and more responsive to their thinking. They could record their work at the speed they were thinking, completing tasks and accessing relevant and 'just in time' support for learning activities. Reading through the postings, it was clear that learning through use of digital devices was a satisfying and an enjoyable experience.

- *I am so excited because I can do anything on my netbook (Catehrine, SPX)*
- *I've had my netbook and I love it to bits. It is so cool (Gabriel, PES)*

- *It has worked magic for us because it had easy access to the internet and easily filed google docs (Salena, PES)*
- *It is the best thing to happen (Tupou, GIS)*
- *Before I had my netbook I was working in books. It was Boring working in the books. When the netbooks came they changed my whole life. When I worked on my netbook my learning got more interesting. I got to blog and comment on other people's blogs … (Siosiusa, GIS)*
- *The thing that I differently now than last year was, thinking better, having more confidence in myself and having more FUN!!!!!*

Lateral learning relationships

Working in a digital learning environment allowed the students to establish learning relationships beyond that of the teacher and student, although interaction between teacher and student remained an important feature of the learning experience. Learning relationships included conversations about learning interaction with class and school peers in tasks as well as interaction with people from across the globe. The students had authentic audiences for their writing. They also commented on the quality of teacher-student conversations and appreciated the increased interaction that the digital environment engendered.

- *When you are on your netbook you don't have to give it to someone to read your work, you can just share it (Broneq, PES)*
- *The best thing about netbooks is that we can communicate with other schools because you can see what they are doing at their school throughout the year on their blogs (Tim TPS)*
- *..much easier for the teachers because they can just go on Teacher Dashboard (Samuela, PES).*
- *When I was a Year 1 student …. I was asking the teacher about everything. But now as I am a Year 6 I ask Google instead (Saadiya, PES).*
- *Commenting on others' blogs is also exciting because I get the chance to find out about their learning and I get to meet others beyond this school.*
- *The positives that I experienced this year include interacting with classmates or other students in the Manaiakalani cluster … we get to voice our learning on our blogs.*
- *This year is different because I can share my stories with the world (Hannah, TPS).*

Academic Progress and engagement in learning tasks

Comments about improved learning were numerous. The students viewed that they had found it easier to make progress in maths, in spelling and, in particular, writing.

- *It feels like you want to write and never stop (Mone, GIS)*
- *I love to write and also when we make mistakes we don't need to rub out our writing, instead we can delete it (Francis, PES).*
- *Now we are starting to finish our work … (Sonya, SPX)*
- *I have become a better speller … (James PES)*
- *I am motivated to finish my work that I couldn't finish in books (Kifi, PBS)*
- *I have become a better speller and have improved in my maths, but am still improving in my reading (Samuel, PES)*

Whanau engagement

The value of having netbooks available at home and at school was recognised by the students. They appreciated that their families could become involved in their learning and that they also found out about the benefits of using netbooks.

- *My mum leaves some nice comments on my blog (Kelvin, GIS)*
- *Sharing my learning on my blog has given my mum a chance to look at what I have been doing at school. My family around the world is enabled to comment and share it with more of the extended family (Gloria, PES)*
- *We can learn at home and my family can see what I have been doing at school because we have a google docs (Cheyanne, PES)*
- *It is really cool because we also get to take our netbook home and our parents get to see how great using a netbook can be (Chloe, PES)*

A full list of student reflections can be accessed at the following internet address:

http://manaikalani.blogspot.co.nz/search/label/2012%20Reflections

F. NEXT STEPS FOR THE MANAIAKALANI GROUP

The Manaiakalani Cluster are currently working with the Woolf Fisher Research Centre to consider academic outcomes and identify areas in which input will be most beneficial for the students in the Cluster's schools in the coming phase of learning and teaching. Some anticipated supports for moving forward are the delivery of fibre to schools and the possibility of extended cloud based learning environments. The network is looking forward to supporting students to be even more 'at home in the digital world'.