

How can schools best manage their ICT in relation to iPads, Chromebooks, Hapara and Google Apps?

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## **Executive Summary**

The schools I investigated had different approaches to the management of iPads and Chromebooks and their use of Hapara and \*Google Apps but there were fundamental similarities in all of the schools which contributed to their successful implementation of devices. These include:

- A financial commitment from the BOT to purchase devices, contract external technical support, fund external Professional Development and in some cases fund release.
- A teacher/unit holder with responsibility for ICT
- A shared pedagogical understanding that was communicated to the community
- Setting timelines and expectations for classroom implementation

\*Google rebranded Google Apps to G Suite on 29 September, 2016.

## **Purpose**

'Schools should explore not only how ICT can supplement traditional ways of teaching but also how it can open up new and different ways of learning.' Page 36 New Zealand Curriculum (Ministry of Education, 2007).

The purpose of the sabbatical was to visit schools and speak with colleagues to view their ICT in operation and

- see the impact ICT has on teachers' delivery and children's learning
- learn about systems for organisation and management of ICT in classrooms and school wide
- understand how these impact on the home school partnership
- discuss successful implementation approaches
- identify risks and barriers to their successful implementation

I wanted to

- explore what other schools were doing via my networks on Facebook and Twitter
- become more familiar with what is available on the enabling e-learning pages on TKI
- explore what is available through the online Virtual Learning Network
- complete workshops Level 1 and 2 on Google Apps
- work through the free online training on the GAFE website
- see how schools manage their iPads including app selection, storage, security and iTunes accounts

## **Background and Rationale**

The rationale for doing this research related directly to Priority 1 of the Ministry of Education Statement of Intent (Ministry of Education, 2014) which is to improve student education outcomes for Maori students, Pacifica students, students with special needs and students from low socioeconomic backgrounds. My current school is a decile 2 so this government priority is personal to us.

One of our charter goals is to further develop students' digital literacies by providing opportunities and resources for all students to develop effective ICT skills with which to access the curriculum. Our school has interactive whiteboards, laptops and iPads and our current intent is to add to our iPads and, in the senior school, introduce Chromebooks. The Board of Trustees want to ensure money is invested wisely and in ways that maximise learning opportunities for all our students.

## Methodology

Information was gathered via online courses (<https://edutrainingcenter.withgoogle.com/>), web pages (various) and online networks (Facebook).

Interviews were conducted with principals or teachers with units for ICT from seven schools ranging from decile 2 to 10, from 200 to 400+ students, and included primary, full primary, and intermediate schools. They were located in Wellington, Waikato, Bay of Plenty, Morrinsville and Auckland.

The interview questions focused on

1. Devices the school had
2. How the devices were rolled out
3. Staff professional development
4. Technical support
5. Learning and teaching

## Findings

### 1. Devices schools have

All of the schools had a mixture of iPads and Chromebooks. Other equipment schools had included laptops, desktops, TV's, apple TV's, interactive whiteboards, and an interactive e-learning table.

The ratios of devices to learners varied within each school as did the way the devices were allocated but all schools had multiple devices in each class. Some schools had their own designated devices for SENCO programmes or children with special needs in addition to those provided by RTLB or RTLit.

In primary schools, junior classes had iPads and middle and senior classes had some iPads but more Chromebooks. Chromebooks were generally used in Year 3 classes and up. The intermediates had iPads but either had more Chromebooks or were looking to build their collections of Chromebooks.

The intermediates were BYOD, one primary school was Bring Only This Device (BOTD) and another primary school was working towards BYOD in their Year 5-6 classes so were liaising with their local intermediates to identify which devices the intermediates wanted their students to buy.

## **2. How the devices were rolled out**

Roll out was personalized to each school and approaches varied depending on factors like readiness of staff, number and type of devices and the school's philosophy.

School A - The school has had multiple iPads for many years that have been, and continue to be, donated to the school through a trust. The school uses their own funds to purchase Chromebooks. There is a ratio of 1:3 devices to students with junior classes having iPads and the rest of the school having a mix of iPads and Chromebooks. In addition, they are moving towards BYOD in Years 5-6. Where possible, additional equipment is provided to teachers who request it and who utilise it.

Professional Development has been provided to staff as needed or 'in time' to enable them to implement school wide initiatives. For example, all teachers use See-saw to communicate and share samples of children's work directly with families. Artifacts may be documents, photos or video clips.

Staff have been using Google Apps for administration including minutes, appraisals and calendars and, now staff are confident with it, the school intends to use it more with children in the classroom. The intention for all technology adopted is to, 'identify what makes life easier' and use the tools to facilitate this.

School B - iPads had been in use in the school for some time. After an initial trial in two classes, over 200 Chromebooks were rolled out through the school from Year 3. Staff Professional Development and information sharing with parents was fundamental to the roll out. All staff are expected to be proficient in Google Docs and they are used for school administration including teacher planning and Google Forms is used for the school newsletters. Families are encouraged to access the free wifi at school, particularly because newsletters contain links to video.

This school had one Google Certified Teacher.

School C - iPads were issued to each teacher to become familiar with over a 6 month period. Following that, iPads were issued to each class and a set of 10 kept in the library which teachers could use for class lessons. Teachers had their own iTunes cards. Chromebooks were introduced with 20 per syndicate of 3 classes which was increased to 15 per class. Desktop computers in classrooms had chromebox attached. The school is moving towards completing administration in Google Docs and being a GAFE school by the start of 2018. Staff expertise is varied and the expectation is, along with the Professional Development offered at school, staff will manage their own learning to ensure they are competent by that time. This is easily achievable as

GAFE training is available free online and is broken down into modules which can be completed according to your specific learning needs.

School D - This school was part of a ministry blended e-learning contract in 2013-14 and Professional Development was an integral part of the contract that required an ongoing commitment from all staff. GAFE training began in 2015 to be operable in middle and senior classes in 2016. They have a unit holder for ICT and another unit holder for blended e-learning.

Google Apps are used for teacher planning and assessment, sharing notices, email and other administration.

All classes have iPads and laptops and in the middle and senior classes there are Streambooks, which are a Chromebook alternative. Senior classes have the lowest ratio of devices to students. Specific educational apps or websites are used in areas of the school.

School E - 20 Chromebooks were first introduced in the senior school but trickled through to the middle school as staff changed teams, new staff arrived and more were purchased. The school currently has 70. Devices are issued to classes but teachers share teaching spaces and share them within their teams as needed. Junior classes can book Chromebooks for class use. iPads are distributed throughout the school. School administration has been moved to Google and this was intentional to get everything off the server and into the cloud. This includes appraisal data, minutes, student reports and assessment data. External Professional Development has been provided for all staff along with the Professional Development provided internally.

School F - The principal was relatively new to the school and inherited a well resourced school and a staff who were proficient in ICT including Google Apps. Large amounts of school administration are stored and completed in Drive including teacher appraisals, meeting minutes etc. Students also use Google Apps. Some staff use Hapara and some use Google classroom.

School G - iPads and TV's were allocated to all classrooms and Chromebooks to middle and senior classrooms. Professional Development was provided at the time by external providers and the training was targeted to the levels of competency of teaching staff and administration staff. Unit holders provide ongoing Professional Development.

Google Apps are used by children in classrooms and by staff for some administration tasks including minutes, memos, calendars and surveys.

### **3. Staff Professional Development**

All schools had a range of skill levels and confidence amongst teachers. Professional Development was a focus in each school and approaches were individualised to each school and often within each school.

Approaches used included

- Training in teams, whole staff and with non-teaching staff
- Techie brekkies
- Training with colleagues in other schools
- Peer support/buddy systems, experts on the staff
- In-class modelling
- Training provided by external facilitators
- Migrating administration into Google and training staff as needed eg meeting minutes, appraisals, student reports, surveys, calendars
- Ascertaining individual needs and targeting Professional Development
- Encouraging teachers to own their learning and upskill themselves by certain times
- Committing to a few apps that would be used throughout the school
- One school was part of a ministry blended e-learning contract in 2013-14
- Using staff to trial apps
- Including specific requirements in teacher job descriptions

#### **4. Technical Support**

All of the schools had a teacher with a unit for ICT responsibilities and contracted additional external technical support. In two schools there were two unit holders with ICT or e-learning responsibilities. In one school they had an ICT team with representatives from each team. The unit holders were largely responsible for managing apps including their purchase and pushing out to devices, administering Google including creating student email addresses, providing or facilitating training to staff and troubleshooting. Other responsibilities unit holders held included

- Reviewing school documentation around ICT
- Modelling practice for colleagues
- Providing in-class support to teachers
- Overseeing BYOD
- Supporting colleagues with blogs
- Setting up newly purchased devices
- Making recommendations for purchasing
- Liaising with external technical support

Schools used a range of products or systems to manage their devices. Depending on staff skill levels and knowledge, some teachers managed their own.

In one school, office staff were responsible for aspects of administration and in another school the senior management team oversaw the day to day implementation.

Several schools reported experiencing very few technical issues with Chromebooks.

The external support was used to manage the server and sort out issues beyond the unit holders capabilities.



## Learning and Teaching

The schools had different approaches to using their devices for learning and teaching and, in most schools, teacher capability with ICT was varied. The schools were at different points on their ICT journey but the patterns that emerged were:

- The importance of a shared philosophy and shared pedagogical understanding. This was important not only amongst teaching staff but with school's communities. The introduction or additional purchases of devices was sometimes part of a pedagogical shift which needed to be communicated clearly. Working this through with staff and keeping families involved, informed or consulted helped ease the transition.
- There seemed to be a move from having multiple apps on student iPads to having a few carefully selected educational ones for specific teaching and learning purposes. iPads were being used for many of their other functions too eg photos, videos, calculators, to access Google Apps.
- Many schools had iPad apps that focused on maths or literacy but could be used throughout teams or schools because they were levelled and children could work through them over time. Children could access them at home and share what they were doing with their families. Teachers could assign specific tasks to children in these apps too. Schools found some apps particularly helpful to target learning for children on their Special Needs Register.
- iPads, while being used at all levels, were favoured for use in the junior school and Chromebooks were favoured for use in middle and senior classes. One school articulated their thinking in general terms as, 'iPads are used for content consumption, Chromebooks are used for content creation.'
- The schools didn't talk about learning how to use the devices. They talked about the learning the children did *with* the devices.
- Teachers found new ways of doing things and made the technology work for them. For example, teachers used their TV's for, among other things, youtube clips, editing children's work, shared reading, and to display documents they had created on their laptops.
- Some schools used Hapara, some used Google Classroom and one school used both according to teacher preferences.
- Teachers are completing planning in Google Docs. Inserting hyperlinks to youtube or maps means they are immediately available. Teachers have not reported an increase in time taken to plan.

- Schools are networking with other schools to grow and share expertise and to manage transitions between them.

## **Implications**

The implication of these findings is that schools can, and do, manage their iPads and Chromebooks effectively and while some practice is consistent across schools, other solutions are specific to the context of individual schools.

What is clear, is that schools see devices as fundamental tools in classroom programmes and as a professional tool for teachers and therefore digital literacy is required of all teachers.

## **Benefits**

The benefits of using Chromebooks and iPads reported by the schools included

- Immediacy - the students could access the information they wanted as it was needed
- Access - to information, experts, visual presentations, video clips
- Multifunctions - the devices could be a camera, calculator, word processor, etc
- Collaboration - students could work together while not being together
- Flexibility - students could work on things in their time, away from school
- Engagement - students enjoy using the devices
- Involvement - students didn't miss out on learning if they were sick or absent
- Sharing - class work could be easily shared with different audiences
- Storage - work was not lost or misplaced
- Feedback - teachers could see what children were doing in their learning and provide feedback at various times
- Variety - in the manner in which teachers presented learning to students
- The educational quality of some apps, particularly those that assessed children and provided staggered learning opportunities
- Home-School Partnerships - some apps were used to maintain ongoing relationships with families eg through digital portfolios, newsletters
- Accountability - teachers could access revision history in Drive and restore earlier versions of student's work

## Conclusions

For schools to effectively manage their ICT in relation to iPads, Chromebooks, Hapara and Google Apps these factors need to be in place

1. A financial commitment from the BOT. All of the schools funded devices themselves from operations grants and alternative income streams where possible.
1. ICT unit holders - all of the schools had at least one unit holder to manage the ICT in their schools. While the principals were committed to the developing of ICT they were not managing the day to day administration of it.
2. External technical support - all of the schools used at least one external company.
3. Professional Development - while the methods or approaches differed, all schools had ongoing Professional Development.
4. A shared pedagogical understanding and keeping the community informed.
5. Setting timelines and expectations for classroom implementation - while it took some teachers out of their comfort zone, all schools had some non-negotiables regarding minimum expectations for teachers to utilise the technology available to them.

While on sabbatical and travelling through Asia I had two vastly different experiences related to this study.

I encountered the Great Firewall of China. To access free wifi at the airport required a passport number, flight number and seat number or a Chinese mobile phone number. Throughout China, once connected you couldn't use Google or Facebook and only government approved sites for some information related to Chinese history could be accessed. These restrictions were isolating and frustrating compared to what I was used to.

In contrast with this, free wifi could be accessed throughout Cambodia, even in the poorest and most unlikely places. I could learn, research, share, communicate and connect with the people back home. I could be the 'confident, connected, actively involved, lifelong learner' described in Page 8 of the New Zealand Curriculum (Ministry of Education, 2007). Schools have a duty to ensure their students have access to and are able to utilise technology to achieve this in the Digital Age.

**References**

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