St. Patrick's College, Wellington

To investigate best practice strategies with regards to the implementation and use of BYOD in the classroom

David Martin

Assistant Rector

Sabbatical – Term 3 2014

Acknowledgements

I wish to thank the following schools and individuals for their generosity in sharing with me their time and also their willingness to show me how BYOD is operating within their colleges.

Albany Senior High School
- Hamish Chalmers - Head of ICT

Carmel College
- Ms Chris Allen – Principal

Cashmere College
- Sonya Bailey

Hobsonville Point Secondary School
- Maurie Abraham – Principal & Claire Amos - Deputy Principal

Kapiti College
- Tony Kane – Principal

Orewa College
- Kate Shevald – Principal & Linda Rubens – HOD English

Ormiston Senior College
- Karen Brinsden – Principal

St. Andrew's College
- Sam McNeill – Director of ICT

Wellington High School
- Dominic Kildea – Deputy Principal

Westlake Boys High School
- Grant Saul – ICT Director

I would also like to acknowledge the following groups within the St. Patrick's College community:

- The Board of Trustees of St. Patrick's College and the previous Rector Fr. Paul Martin SM for supporting my application in 2013 for a sabbatical.
- Mr Neal Swindells, the current Rector for supporting my sabbatical.
- My colleagues within the SLT who did an excellent job of covering my role at the school while I was away, especially Mr Doug Walker for being acting Assistant Rector.

Finally I would like to acknowledge The Ministry of Education for supporting and funding the sabbatical.

Summary

The visits to a wide variety of colleges around New Zealand, together with the wider reading and research undertaken have identified the following key points:

- Colleges have generally favoured laptops of some sort as the preferred device for BYOD.
- Colleges have mostly erred away from recommending a specific device, but have usually provided a set of minimum specifications regarding what would be acceptable as a BYOD device.
- Most Colleges have wanted a minimum screen size which has excluded smart phones as being acceptable BYOD devices.
- Chromebooks which are relatively new are making rapid in-roads into many schools and in some cases are the preferred devices.
- The preferences of schools have generally meant that one type of device is generally prevalent in a particular school. This is heavily influenced by whether a college is using a Windows, Google or Apple platform.
- Colleges have introduced BYOD in a wide variety of ways; some have been very cautious and gradual in their approach, while others have adopted a whole level, or whole school model.
- Most colleges use Moodle as an LMS and this tends to be the Single Sign In portal for students accessing all programmes within the school.
- A number of schools are moving to longer periods with perhaps only three learning slots in the day.
- Schools in some cases are taking a more integrated approach to their timetables and are looking to use the Tutor Teacher as a learning mentor, rather than just the traditional pastoral emphasis.
- Nearly all schools have invested a substantial amount of time in professional development in the lead up to and the implementation of BYOD.
- Professional development is generally needs driven with teachers opting into workshops that provide practical training from their peers. Late starts are used in several colleges to facilitate the training.
- BYOD is part of a bigger pedagogical shift in education towards creating students who are collaborative, creative, problem-solving learners.
- Students are being given more choice in what they learn.
- BYOD is breaking down the learning barrier between home and school.
- BYOD is seeing a shift in teaching practice towards learning being more inquiry driven.
- Differentiated learning is a natural outcome of using BYOD in the classroom.
- Teachers are increasingly adopting the role of facilitator working with small groups of students, rather than having teacher dominated content driven lessons.
- BYOD is an element in developing students who will be future focused and who will have the ability to be independent, resourceful learners.

Purpose

To investigate best practice strategies with regards to the implementation and use of BYOD in classrooms and to look at the ways those secondary schools are managing the transition to using BYOD in the classroom.

Rationale and Background

In 2013 the College was involved with a contract around Blended e-Learning with the Ministry. This was extended into the first half of 2014 and involved helping the College to prepare for the introduction of BYOD. The programme used the e-Learning Framework, with its five strands:

1. Leadership and Strategic Direction
2. Professional Learning
3. Teaching and learning
4. Technologies and Infrastructure
5. Beyond the Classroom

In 2014 the College was scheduled to have its network upgrade (SNUP) which would include wireless access being available throughout the school. Understandably for my sabbatical I was keen to see how other colleges which were further advanced in their BYOD programmes had used technology to shape and advance their teaching and learning programmes. As part of this I was keen to see what strategic decisions had been made around the choice of technology and the sorts of policies they adopted for managing BYOD. It was also my intention to get some insight into their professional development programmes.

Methodology

It was important to see different sorts of lead schools, including those with modern learning environments and those with traditional layouts. It was also important to see colleges similar to St. Patrick's College which were just a year or two ahead in their introduction of BYOD. For this reason the Colleges visited varied considerably in their character and approach and this diversity was one of the strengths of my sabbatical study.

In order to identify the best colleges to visit I initially emailed Elizabeth Craker at CORE Education. Elizabeth was organising the NASDAP Tour for later in the year and so she was a logical person to ask regarding appropriate schools to visit in the Auckland area.

I also emailed Ray Burkill, the Project leader in the Learning with Digital Technologies (LwDT) programme in Christchurch. Ray recommended several Christchurch schools. In addition to this I spoke with Karen Clarke the Library Manager at St. Patrick's College who is also on the SLANZA National Executive and has strong connections with a number of Wellington and Christchurch schools.

The next step was to contact the Principals of the recommended colleges and from this to organise times to visit their school. It was very heartening to get such positive responses from the vast majority of schools.

Each school was forwarded the same, short set of questions so they had a clear idea of what information I was hoping to gain.

Logistically it made sense to block the visits to schools in a particular area close together. In total I visited ten secondary schools across Auckland, Christchurch and Wellington. I also spoke to some key staff at other colleges. Overall this provided me with a good balance of colleges, both geographically and in other respects. I followed up my visits to the various colleges by looking closely at many of their web sites, some of which had some excellent links to some useful professional readings around the educational impact of devices in the classroom.

In addition to the school visits and studying their websites, I read a number of articles around BYOD from key professionals in this field. Also of great value was accessing the websites of some of the educational leaders in New Zealand around Learning with Digital Technology.   Two of these professionals, Claire Amos (Hobsonville Point) and Sam McNeill (St. Andrews) were staff I visited and this gave added impetus to looking more closely at what they had online.

Findings

My research primarily focused around two key areas:

1. What sort of devices are schools allowing their students to bring and how was the implementation done?
2. Secondly and more importantly – how are the devices being used in the classroom and to what extend are they changing and enhancing the learning experience?

1. What sort of devices are schools allowing their students to bring?

The majority of colleges allow students to bring a range of devices, provided they conform to certain minimum specifications. Tablets are generally not favoured and usually laptops/netbooks are the preferred devices. The attitude being that it is more important what students do on the machines, than what they do it on. In some colleges tablets are accepted as suitable devices in the junior school where browsing and some creativity are the main requirements. In the senior school laptops with full operating systems are recommended as they have the widest range of applications and are better suited to subject specific requirements in areas like design and statistics.

Colleges tended not to have a full purchasing partnership with a supplier, but many did have a close working relationship with a technology partner or retailer to enable families to benefit from the bulk purchasing power of companies. Links to these companies through college newsletters and websites were common. In some cases these outside suppliers were used to support information evenings for parents.

The minimum specifications focused particularly around screen size, processor speeds, battery life and warranties. Most schools were cost sensitive with many recommending devices for the junior secondary school that could be purchased for $500 - $800.

In almost every case the implementation has been staggered with most schools introducing BYOD at Year 9 to begin with, or in some cases just some of their Year 9 intake has been offered the opportunity. There are different attitudes towards how important it is that every student has a device, with some colleges quite comfortable with only some students in a room having a device, while for other colleges the issue of one to one and equity have meant they have made significant efforts to make available loan machines and where necessary to offer financial support where financial need is clearly an issue.

The table below, while not exhaustive does help to give a quick overview of how different schools have started to implement BYOD and the types of devices they tend to prefer.

College	Device	Implementation
Albany Senior High School	Allow any device, including phones. Some specialist Macs for Music & Design. Open source school – Ubuntu A – fully fledged operating system instead of Windows on all teaching staff and student desktops.	No BYOD policy as such, although the College has encouraged students to bring a device of their own choosing. Nearly all students have a device.
Carmel College	No recommended device for 2015. Certain requirements like screen size 9cm+, keyboard preferred. Google Doc school	Began BYOD in 2012 at Years 7-10, tablet recommended. 2015 all levels go BYOD
Cashmere College	2013 – Recommended laptops with specified specs. Currently A mix of laptop and ipad classes – more laptop, than ipad classes.	2013 – 1 class at Year 9. 2014 – 2 classes at Year 9 (had 200 interested) & 1 Year 10 class. 2015 – Additional Year 9 & 10 classes.
Hobsonville Point Secondary School	Laptop or netbook recommended with specs. Have a best fit & good fit scenario.	All students bring a device – currently only Year 9 students in the College.
Kapiti College	2012 – Mostly netbooks, a few ipads. Currently now recommend Chromebooks. Google Doc school.	2012 – BYOD for 3 classes 2013 – all of Year 9 with 75% take up 2014 – 85% of Year 9, plus large uptake with seniors.
Orewa College	Ipads mostly used by juniors and Mac laptops among seniors and some juniors.	Early adopter of BYOD.
Ormiston Senior College	All laptops with minimum specs provided. Library has ipads & a few Chromebooks which can be borrowed. Google Docs used.	New school – all students have devices.
St. Andrew's College	No recommendation, but provide minimum specs. Mostly laptops. At Year 9 have excluded ipads, Chromebooks and Android devices.	Ad hoc BYOD at all levels – high take up in the junior school, e.g. Year 8.
Wellington High School	2010 – mini net book with 10" screen 2012 – allowed to bring anything if it met the minimum specs, but not ipads	Early adopter of BYOD 2010 – offer Year 9 BYOD 2011 – all Year 9 with financial support for some
Westlake Boys High School	No recommended device, but certain specs. Allow netbooks, laptops, tablets with 7" screen or larger. Recommend laptop as students go to senior school	From Term 4 2013 Year 9 & 10 students can bring a device. 2014 – Students at all levels invited to bring devices.

2. To what extent is BYOD changing and enhancing the teaching and learning experience?

One of the great things about my school visits is that I had the opportunity to visit such a variety of schools. Some like Albany Senior High School, Hobsonville Point Secondary School and Ormiston Senior College were great examples of new schools with modern learning environments. Others like Westlake Boys High School and Carmel College were traditional colleges. Significantly though all the schools visited identified similar advantages, or expectations around how BYOD would influence teaching and learning.

In simple terms they could be summarised as a greater opportunity for: collaboration, creativity, problem-solving and the interactive nature of the teaching and learning. Other advantages cited by most included the scope for critical thinking and greater engagement of reluctant learners.

BYOD – Part of a Pedagogical Shift

BYOD is definitely changing the way that teaching and learning is happening in the classroom. The extent to which this is happening is a little more difficult to determine, as the changes that are happening are bigger than simply the introduction of technology or devices into the classroom. In fact BYOD and technology in general are facilitating and speeding up pedagogical trends which are already under way.

In terms of these pedagogical changes one of the main ones is the move to a more student centred, inquiry driven approach to education where students are increasingly expected to be: self-reliant, resourceful, creative, adventurous and reflective learners. It is a focus which is highlighted in the NZ Curriculum Document with the Key Competencies (pages 12-13). Societal change means knowledge is changing and expanding so rapidly, so requiring schools to re-think how they prepare students for the future. A knowledge based education is increasingly less relevant and increasingly schools are required to provide students who will be resourceful, collaborative, problem solving learners. This is well summarised in the Vision, Mission and Expectations outlined by Hobsonville Point Secondary School. For instance the Mission is to "Innovate, Engage, Inspire" and this is then followed further down by a list of ten expectations or habits which include being: Resilient, Responsive and Resourceful.

This is not new, though it is being given added impetus by the drive to BYOD, or One to One computing. When students are operating in a wireless environment with their own devices and are given learning opportunities which require them to be inquisitive, adventurous learners, the very dynamics of learning change. Students take more control of their learning, it becomes more differentiated and to a certain extent it escapes the confines of a classroom learning environment and becomes linked to real contexts and issues.

SAMR Model

While schools were in relative agreement over how BYOD could change learning the way in which they have gone about using BYOD has significant differences. In this regard it is worth noting the SAMR Model. This is a model which shows how BYOD might impact on teaching and learning. SAMR stands for: Substitution, Augmentation, Modification, Redefinition, and is outlined in more detail in Appendix A. Essentially though it is a measure of whether learning is happening in different and new ways, or whether a technology device is simply being substituted for 'old' tools, without any real change of task.

The e-Learning Framework

The Ministry of Education has the e-Learning Framework on the tki website. Not unlike the SAMR Model it identifies under each of the five strands the stages a school will tend to go through as it takes its journey towards Learning with Digital Technology (LwDT). These stages are: Emerging, Engaging, Extending and Empowering.

One college which seemed to have adapted the e-Learning around Teaching and Learning was Westlake Boys High School. To improve teaching and learning the following tools were identified: Personalisation, Participation, Productivity and Research. To assist teachers the framework gave examples of how each of these tools could look and how departments could implement them in their subjects.

Single Sign-in

It was very evident from most colleges that BYOD planning fitted within a bigger context, a wider ITC planning framework. In each case this required that other technology structures had been put in place in order to support the successful implementation of BYOD.

One of the main examples of how BYOD fits into a bigger IT plan can be seen in schools like Kapiti and Cashmere Colleges. Both have recently adopted a single sign-in where students access all their IT resources and documents through a single sign –in accessed in their cases through Moodle. From this they can access things like Kamar data for NCEA results, access course notes and gain entry to email and Google Docs. Other schools visited also used a similar format. For example at Hobsonville Point Secondary School students used their Moodle sign in to access things like My Portfolio and eTV. In this way students with their devices are able to access everything they need with one login wherever they are.

Different approaches to Implementation

Certainly providing staff with the essential skills and opportunities for trialling different BYOD possibilities is very important in any college's implementation of BYOD. In the case of Cashmere College, they began with one class at Year 9 in 2013. This provided them with a group of students and teachers to try things with. It also meant the teachers involved with the trial class were then in a position to offer some practical PD to other teachers. In 2014 three BYOD classes were operational (two at year 9 and one at year 10).

By contrast other schools have adopted a policy where students are encouraged at several levels to bring a device without making it obligatory. For instance at one college students at Years 9 and 10 were encouraged in the latter part of 2013 to bring devices, but for this college it is more of a continuum where the number of students having devices will naturally grow, without necessarily ever becoming one device for each student.

One of the fears expressed by some teachers is how are the devices going to be used in such a sustained way as to make their introduction worthwhile. Certainly schools which have adopted an open invitation for students at all levels to bring BYOD, without having any strong element of compliance have tended in some cases to be less focused on developing or adapting their curriculums specifically to cater to BYOD. In other words the use of a more ad hoc approach to devices has meant that in most cases substitution, and to a certain extent augmentation, have tended to dominate the ways in which devices have been employed in these colleges. This is not necessarily a bad thing, as experience tends to suggest that on any staff there are early adopters and it will be these staff that quickly take the use of devices to the next level and become mentors to many of their colleagues. Indeed a key feature of many of the PLD programmes around BYOD is the creation of small workshop groups where teachers can share ideas and best practice.

Attitudes to social media differed widely, with the majority of schools not allowing them. Some Colleges like St. Andrew's College see behaviour management as being addressed more constructively through focusing on the learning and training students thoroughly in digital citizenship, rather than focusing on firewalls. Some staff also use *Twitter* as it is a great way of connecting with professional learning groups.

Starting with Substitution

Significantly schools adopted different approaches in implementing BYOD. At Orewa College, initially the aim was to get staff comfortable with and keen to use devices in the classroom. Hence initially the focus was very much around substitution. It was on getting teachers confident and positive about using BYOD in their classrooms. The more advanced stages could wait and would evolve as teachers and students came increasingly to accept computers were part of everyday learning. This could be as simple as replacing pen and paper, or the use of e-books

in place of textbooks. In the period since their introduction teachers have gradually moved into adopting a range of tasks which fit further along the SAMR spectrum.

This approach partly explains the willingness of some schools to adopt BYOD across the school quickly, whereas others have held back, or have only wanted to implement BYOD with certain teachers and classes, therefore prolonging the wholesale introduction of BYOD. Implementation in this manner is usually preceded by substantive professional development and opportunities to focus on one level of the curriculum and to adapt it accordingly. In this scenario, the expectation is that students will all have a device for a particular level and that the teaching will have been shaped to ensure that learning is more collaborative, student centred and focused around processes, rather than knowledge.

Substitution also makes practical and financial sense as book publishers gradually begin to offer workbooks and textbooks as eBooks.

The "Flipped Classroom"

The "Flipped Classroom" is an approach where students have the content covered at home, often by way of a teacher's video or audio clip. Students can go through these at home, leaving more classroom time for work on the task itself. The lesson becomes more about the process than the content, more about doing, than about listening, more about the student working at his own pace, rather than whole class being taught.

Under this approach the teacher can become more of a facilitator and can devote more time to assisting individual students. Flipped classrooms also lend themselves well to more peer tutoring and collaboration.

A number of Apps and programmes are now available to enable teachers to run 'flipped classrooms". These varied from school to school and often depended on the type of devices being used, or the preferences, confidence or expertise of the teacher concerned.

One such programme is *Camtasia* where teachers provide video or audio tutorials for students to follow at home, so that the lessons themselves can focus more on concepts, or analysis that follow on from the knowledge. In this way lessons can focus on higher order thinking and the teacher is freed up to work with smaller groups and individuals who may all be at different stages, or levels of complexity relating to the task.

At Kapiti College most staff had been trained to work with *Screencast*. These are short 3-5 minute presentations compiled by staff which finish by leaving students with a question or task to follow through on. As with so many other applications it can be and is used successfully by students, often working in groups to develop their own screencasts to share with other students.

It is easy to see that as students gain some skills in using their device, teachers can increasingly become facilitators. The other very noticeable trend to come from this is the extent to which students help and teach other students. When this happens, the classroom can become a home for multiple' teachers' and a place where students (and teachers) are learning by doing. Such learning is much more active, varied and relevant and is much less tied to content, or timetables, as now so much of it can be done outside the classroom. Furthermore students become better at using their Key Competencies and differentiation in the classroom is naturally exhibited. Certainly the use of programmes like *Screencast* are an excellent example of higher levels of the SAMR Model, (Modification and Redefinition) being used without a high level of time or skill being required. They are also the type of application which can be used over and over and are part of the process of changing the way classrooms look!

Collaboration

Collaboration has been spoken about as a key skill that teachers are wanting to nurture. Once students have their own devices and have some simple digital literacy they can collaborate in so many different ways. It may be with Google Apps where students are working, (either at school or home) on a common document or power point. Some of the schools visited used Windows 365. Increasingly the issue is not about which platform to use, but rather to adopt one and make it a central element of the educational experience of each teacher, learner and parent in that school community. In this regards schools still have a big job ahead, namely to educate parents as well as students, to ensure they become part of this on-line educational experience. The possibilities and rewards are exciting and are currently being held back as much by traditional thinking, as by access to any particular form of technology.

Having an Audience

Another big benefit of using devices in the classroom is that it greatly increases the audience which students can present to. A few examples include students developing simple animations using *Educreations*. If students are creating and editing their own videos there are Aps like *iMovie*, or if creating and publishing their own books there are Apps like *Book Creator*.

In addition to these type of options, there are the class and student blogs, websites and other forums that students can use to discuss and share ideas, No longer is work done just for a teacher or parent audience, or for assessment purposes. Students now can publish their work to a wider audience. This is a great motivator for students and it also creates a huge desire on the part of students to increase their levels of competency around both content and presentation. Projects become so much more than research or assessment tasks. The task naturally morphs into activities that develop a whole range of acquiring new IT skills as well.

Many games and simulation activities are great for problem-solving and for getting students to be creative and resilient. Some of these activities can be done in 15-20 minutes, while others can be on-going through much of the year. A classic example of a game with on-going educational value which can be adapted successfully to a wide range of subject contexts is *Minecraft.* The December 2014 issue of *Interface Magazine* has some great examples of how schools are using *Minecraft.* Such games can also be competitive, and again are open to a wide audience.   Virtual worlds and gaming certainly have a yet largely untapped potential to assist with education, something which has already been learnt in areas like aviation and medicine.

Curation of Content

Whatever approach is used by schools to introduce BYOD, how students file their work and access resources is an important part of the process. It also illustrates that some skills classified as substitution and augmentation are nevertheless fundamentally important, both at school and beyond. Some colleges have students using *OneNote* to organise all their subject notes, while others allow Apps like *Evernote.* A number of the colleges visited were using Google Apps.

At St Andrew's College they have on their eblog some useful insights around the curation of student notes and the use of whiteboards. An example of this is where the blog refers to an electronic whiteboard equivalent, "where if a teacher has configured a shared Class OneNote NoteBook, then they could do all traditional whiteboard notes directly into this, meaning students have a copy of everything that was written on the board by the teacher in the lesson." (StAC e-Learning Stories)

Kapiti College, among others were also working to use their electronic whiteboards more effectively by finding ways to use them in conjunction with student devices. *Apple TV* was also used in some schools to enable students to share with the class what they were doing on their device with the whole class. All of these applications help to empower students in the classroom and assist in providing them with an audience to share with. This provides opportunities for peer feedback which when done appropriately provides very immediate and valuable responses.

Other Apps

The purpose of this report is not to itemise the range of Apps available, however the following is a taster of some of the software available for teachers and students across a wide range of subject areas: Photoshop, Google Sketchup,,Mathletics, GIS mapping software, PicMonkey (photo editor), MindMup (mind maps), Videonot.es (add text notes to video), Photo Story, Mirroring 360 (screen sharing between teacher and student onto projector), There are a number of excellent resources available identifying good educational Apps and games, the challenge for the teacher is finding the time to play with them!   This is one reason why the 'Show and Tell' format for professional development is so useful, especially when undertaken to relatively small groups of colleagues.

Digital Citizenship

The widespread use of devices has also seen a need for some very well managed student education around digital citizenship. At Ormiston Senior College, a new school in south Auckland the staff became aware that while students are very technologically literate in some respects they often lack some of the important, basic computer skills. Karen Brinsden, the Principal, said the staff did a Curriculum Map and worked out what skills students needed to know based on a thorough look at curriculum and assessment requirements. These were then divided up among different departments, so they would all be covered without duplication. The types of skills that needed targeting were things like generating different types of graphs, spreadsheets and research skills.

Timetabling and Planning

This change in learning style is making an impact on how schools look and organise their timetables. The new, modern learning environment colleges (MLEs) like Ormiston Senior School and Albany Senior Colleges are examples of how significant these changes are. Typically there are only three periods a day, usually of about 90 minutes and timetabled subjects are less traditional. Subjects are breaking out of their 'silos' and becoming more integrated. This creates a need for teachers to operate increasingly in teams, both in their planning and delivery of curriculum. .

Add to this the fact that students all have a device and you quickly find the interaction between teachers and students changes even further. The barriers between work and home diminish and increasingly students can access resources and knowledge from home at their own pace and convenience.

With this not only are activities in the classroom modified, but BYOD becomes a key tool in transforming the way education is delivered. Claire Amos the Deputy Principal at Hobsonville Point Secondary School writes on her website that EdTech has the capacity (when readily available and used effectively) to move us from having 'caged' classrooms to increasingly 'free range learners'. She goes on to define free range learners "as those who are free to choose when they learn, where they learn, how they process their learning, how they evidence their learning and are free to experience learning that is relevant and responsive to their needs, not our limitations".

Such an approach is made all the more possible in a purpose built MLE such as Hobsonville Point. Here the classroom walls for the most part literally do not exist and the whole timetabling and planning framework is radically different. All designed to build on learners' capacities to be self-directed learners with effective self-management skills. At Hobsonville subjects are not taught, instead modules of work which integrate the different subjects are developed. Hence they have terms like Big Projects, Passion Projects and Learning Hubs which show on the school timetable.

The process actually starts with the students who sit down and work out what they would be interested in learning about. It then moves on to the teachers who plan the unit of work ensuring that key content and competencies are covered.

The large modules involve 3 teachers working together and are designated specific learning areas. This ensures that students in choosing their modules get a balance of learning areas. All modules on the timetable run for 90 minutes.

When it comes time for things like reports and parent conferences the students need to work through their portfolios, filing and classifying various pieces of work into subject areas. The students themselves are also responsible for presenting and working through their portfolios with their parents with the teacher present in more of a facilitation role. Exploring learner interests so that they can pursue their passions becomes a great motivation for their success and also helps to build the students capacity to be inquiring learners.

When visiting the colleges with modern learning environments it was impressive to see how much responsibility students were taking for their learning. It was also evident that much of the work was being done in a collaborative manner with small groups of students working informally in break out spaces, rather than whole classes sitting at desks, or being taught by a teacher in a formal setting.

At Albany Senior High School the Wednesday project days came about in part because of the community links and business partnerships that had been set up. In many cases projects and learning were happening in a way and in areas which in a traditional school context just could not have happened. Good skills, good citizens and a strong focus on the key Competencies are being developed through these projects. Many, but not all of these projects are reliant on students having their own devices appropriate for the project.

At Ormiston Senior College as part of their Self Review of the Curriculum for Year 9 staff reviewed their teaching programme and asked how things can look different with BYOD. A big focus was put on students developing the skills to be collaborative, creative, problem solving learners. As with a number of schools late starts are used to accommodate professional development. The College has Learning Advisors, rather than Tutor Teachers and everyone on the staff, including the senior leadership have a group of students. At this stage the groups are no bigger than 1:14.   A role of the Learning Advisor is assisting students with the organisation of all their documentation and also to assist with their academic progress.

Senior School Software

In addition there are all the specialist subject programmes as well. In this regard there are a few programmes, mostly of value in the senior school which may require more specialist devices than what most schools are recommending for their BYOD

programme. These are programmes for specific courses in subjects like Art Design, Music and Statistics. In this regard schools will continue to need specialist Computer Rooms, or alternatively recommend to students doing specific courses that they will require access to more sophisticated and expensive devices.   Nevertheless several schools, including Wellington High School commented on how they now needed fewer stand-alone computer rooms.

Implications for St. Patrick's College, Wellington

In 2015 St. Patrick's College will be introducing BYOD to all of the Year 9 students. The value of the research has been for me to see how other colleges have gone about doing things and especially to see how it is starting to shape classroom practice. It has been extremely valuable to not only see what is being done elsewhere, but to learn of some of the pitfalls and challenges that exist. At this stage the College is increasingly working towards a Google learning environment with Gmail, Google Apps and Hapara being used. Chromebooks are being recommended as the device of choice. While acknowledging that it is more about what you do with the device, than the device itself, it seems the more naturally the device integrates with your learning systems the easier it will be for both staff and students alike.

Decisions on how quickly BYOD is offered to the remainder of the College are still to be decided. The challenge at this stage is to focus on our Year 9 intake for 2015. As a school it is essential that staff receive regular and relevant professional development, which is practical and supportive. Also that as a college we do not over reach ourselves in our initial planning and expectations

Much of what will be done in 2015 will be Substitution and Augmentation, however staff have been receiving training for much of 2013-14, so most will be reasonably confident to make the gradual transition to a more blended e-learning environment in their Year 9 classrooms. In fact some have been using and will continue to use LwDT across other levels as they make good use of the computer rooms, the class set of Chromebooks and ipads.

The reality is that the move to BYOD is as Grant Saul of WBHS said is "more of a continuum" than an abrupt change.

Conclusion

My research has shown that while schools have adopted multiple pathways to implement BYOD, the impacts on teaching and learning in schools share common themes. The acquisition of devices by students is helping to facilitate and unlock learning styles which have been at the forefront of New Zealand educational theory for a number of years and which are perhaps best encapsulated in the New Zealand Curriculum Document published in 2007. Teachers now find it easier to focus on concepts, rather than content. Students now are required to manage their own learning to a greater extent. They have on some levels been empowered, as they now get more say in what they learn and are more active in the learning process.

Admittedly the extent to which this shift is happening is variable. It was evident that some schools have moved much further along this continuum than have others.

Most of these observations however are in relation to the junior secondary school. It is at years 9 and 10 that most of the implementation has occurred and it remains to be seen how much devices will change learning in the senior school given the restraints of NCEA and assessments. .

In conclusion, BYOD has great value at all levels of the SAMR Model, from the use of on-line textbooks and access to resources at one level, through to its application of getting students to be creative, innovative and independent life-long learners at the other end of the spectrum. It will be for individual schools and teachers to decide what form of blended e-Learning they bring to 21st century education.

Education – in part because of BYOD – will never be the same again.

References

Apps for Learning – 40 Best ipad Apps for High School Classrooms by Harry Dickens & Andrew Churches, Published by Hawker Brownlow Education 2011

Inquiry – Inquiry learning in the classroom by K. Gillon & J. Pope. Published by Hatbox Publications 2012

The New Zealand Curriculum published by the Ministry of Education by Learning Media 2007

NZ Interface Magazine, published by G Media Publishing Limited – various issues

elearning.tki.org.nz

http://www.hpss.school.nz/

http://www.teachingandelearning.com/ A blog about teaching, learning, e-learning and leading change by Claire Amos

http://www.orewa.school.nz/learning/digital-learning/

http://www.ormiston.school.nz/curriculum/byod

http://www.schrockguide.net/samr.html

http://www.stac.school.nz/in-the-classroom/e-learning-in-action/

http://eblog.stac.school.nz/

http://www.whs.school.nz/about-us/byod/

http://ilearn.westlake.school.nz/

elearning and WBHS - An elearning framework

Appendix A – SAMR Model

SAMR is a model designed to help educators infuse technology into teaching and learning. Developed by Dr. Ruben Puentedura, the model supports and enables teachers to design, develop, and infuse digital learning experiences that utilize technology. The goal is to transform learning experiences so they result in higher levels of achievement for students.
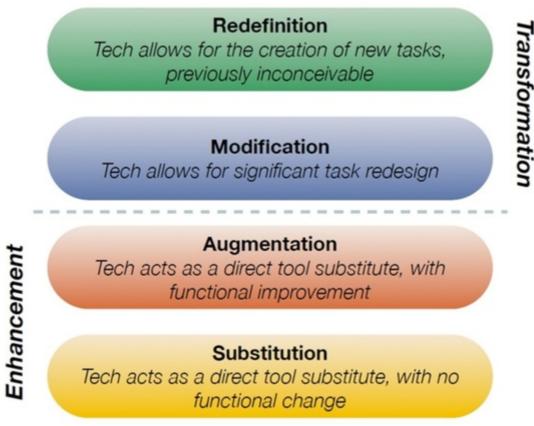

Image the creation of Dr. Ruben Puentedura, Ph.D. http://www.hippasus.com/rrpweblog/

Source of image: http://www.schrockguide.net/samr.html

.