

Sabbatical report on

INVESTIGATING CHANGE MANAGEMENT AND INQUIRY
LEARNING AND THEIR IMPACT ON TEACHING PEDAGOGY

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Sabbatical Leave for Term 2, 2013.

This Sabbatical Report is not intended to be an Academic report, nor is its intention to critique other schools in our catchment area.

Acknowledgements

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My appreciation to you all.

Executive Summary

My sabbatical project was not a critique of the schools I researched but was rather a means to measure where Verran Primary School is in regards to technology and teaching pedagogy. Any process of change management that could be useful to implement in our school was also investigated. The project reaffirmed that each school is in a unique position in the adoption of mobile technologies and in implementing change management of teaching pedagogy. Due to finance, time and professional development constraints there is little desire for radical change management in terms of teaching pedagogy. Rather, each school has, or will, find their own path of constant adaptation towards the creation of a blended learning environment. In most cases this will mean staged implementation of mobile technologies at various class or year levels over a number of years, while still deploying older technologies until they are no longer useful in a 21st century learning environment. The change management needed to alter teaching pedagogy from a teacher centred classroom to a child centred classroom will take time, money and constant professional development. This will be a critical aspect of success in achieving personalised learning throughout the school and as such should have a priority focus in each school’s strategic planning. Inquiry learning is used by most schools as a vehicle for e-learning. Unsurprisingly, given the rapid technological change that is taking place, as well as finite financial resources, as well as empathy for overworked teachers, schools have tended to prioritise infrastructure, cloud storage developments, and professional development over radical pedagogical change.

Purpose

The intent of my sabbatical leave is to investigate change management as well as inquiry learning and to ascertain the impact they have on teaching pedagogy. In addition I would like to update the school’s E-learning Plan and create a pathway for future direction.

Rationale

This Sabbatical Report is not intended to be an Academic report, nor is its intention to critique other schools in our catchment area. It is an opportunity for me to gauge how our school is performing relative to other similar schools in our district and to obtain ideas and suggestions in the technology field, inquiry learning and change management of teaching pedagogy that may be suitable for Verran Primary.

In 2003 to 2006 our school did whole school professional development on Qwen Gawith's Action Learning model. This formed the basis of our Inquiry Learning process. However, such a lot has happened in the intervening years that I feel it is time to reassess where we are in ICT, inquiry learning and teaching pedagogy.

There has been a lot of research on 21st century learning and the necessity for schools to change the way they teach in order to remain relevant to the children of today. These pupils have grown up with technology and are immersed in its rapid development. Therefore change management parallels technological progress. The advent of tablets and other mobile devices has meant even more rapid adaptations by schools are needed to meet the needs of today's students. This sabbatical report discusses 21st century learning as an integral aspect of change management. The drivers of this are advancements in mobile technologies, new definitions of knowledge, professional upskilling of teachers. The change can be revolutionary or adaptive in nature – both types of change have their champions – but without doubt, teaching pedagogy is destined to be altered. Inquiry learning may provide the bridge to assist teachers in managing the change to future learning styles.

Keep in mind this quote from Karl Fisch (<http://thefischbowl.blogspot.com>) as you try and rationalise the speed of change that education and teachers are experiencing and the demands made upon them by their communities. Karl Fisch states “We are currently preparing students for jobs that don't yet exist, using technologies that haven't yet been invented, in order to solve problems we don't even know are problems yet.”

Personal Thoughts

Technology is changing rapidly and schools are constantly playing catch up in order to stay abreast of new developments. The acquisition, leased or bought, of new hardware is a substantial cost to schools and should lead to improvements in learning, student engagement and development of differentiated learning across the school. Research literature points towards personalised learning as the new mantra for education. Classroom teachers are expected to produce connected, self managed, reflective, lifelong learners who are competent in National Standards for reading, writing and numeracy, and who also display creativity, along with evaluation and analytical skills in order to develop their higher order thinking skills. These children are expected to be well rounded individuals aware of the benefits of regular exercise, healthy eating, cyber safety, financial prudence, sun, water and road safety, and who practise environmental sustainability and are good citizens. Where is the time, one may ask, for the classroom teacher to learn about new technology, let alone integrate it seamlessly into a packed curriculum?

It is no wonder class teachers feel overwhelmed with demands placed on them as teachers. In my experience, most teachers are already successful individuals who display the characteristics that we expect of our learners. They **are** prepared to learn new skills, they **do** want the best for their students, and they will **try** different approaches in their classrooms in order to encourage individuality in

learning and develop higher order thinking skills. It is just that the new demands are continuous and the changes so rapid that schools cannot provide the latest hardware, software, infrastructure, professional development, student management systems and learning management systems quickly enough to stay on top of the demands for personalised learning.

Teaching pedagogy does lag technological development but the education sector could be in for the biggest shake up it has seen in over 100 years as the teaching profession reassesses its relevance in today's knowledge environment. Since the start of the 21st century, educationalists the world over have been talking about the need for new teaching pedagogies. A change from teacher-controlled, classroom learning that remodels and regurgitates information towards knowledge based, child-centred, social interaction that can take place in a physical or virtual space. Initially the internet, then Web 1.0 tools allowed people to access information whenever it was needed. Pedagogy was all about content and publishing and inquiry learning became an important model for authentic learning. By 2006 Web 2.0 had added to the capability of the internet by enabling social interaction, networking and collaboration to take place in communities both local and global. The Web 2.0 tools such as YouTube, Flickr, del.icio.us, Twitter, Facebook etc and digital cameras/videos/phones have transformed the ease, speed and way people communicate. The development of mobile phones with camera and broadband ability and then ipads/tablets, coupled with improved wireless capability, ultra fast broadband and storage in the cloud have added layers to the possibility that learning can be personal, mobile, across a number of devices, as well as virtual. Changing technology has put pressure on the relevance of our education system and the teaching pedagogy that supports it. Many educationalists support a rethink of our current pedagogies with fundamental change required to ensure learning and schooling remain relevant and applicable to the children born into a technologically-rich environment. It may be that total, quick, radical change of curriculum delivery is necessary for schools to remain vibrant, relevant educational organisations.

While the mobile learning environment is capable of revolutionising teaching pedagogy, teachers can be compromised by inadequate or inefficient hardware and infrastructure within their school, and of course, a lack of consistent and relevant professional development in using and integrating technology in the curriculum. In our school the pressure to attain National Standards and to moderate children's achievement has been enough to cope with, let alone turn our teaching environment into a paperless classroom administered through, and by, the cloud.

School administrators also have to compromise by rationalising scarce resources, notably funding, into areas of priority and cost benefit situations ie the greatest benefit for the most children. In today's state schools there simply is not enough money to do all that administrators would like to.

What of the future then? Are schools going to be able to change at a rate that technology is? After this sabbatical I will have updated our school e-learning action plan, knowing that 2013 and the years prior have been about establishing a quality infrastructure with ultra fast broadband capability and ICT resources ready to build on our 21st century learning pedagogy.

Hopefully, the suggestions developed for our school may suit schools that face similar challenges to us. One thing has become clear, as a Chinese proverb states "a thousand mile journey starts with the first step".

Activities Undertaken

During my sabbatical I visited schools, talked with teachers and Principals, researched learning trends in education, attended 'class to cloud' course, read other sabbatical reports. Researching change

management, pedagogy, inquiry learning, e-learning lead me to a variety of sites as educators articulate their vision of 21st century learning. This was almost as overwhelming as new technologies can be for the classroom teacher. I had to place constraints on this research and come back to what would be most applicable for my school and the change management needed to support teachers in developing blended learning pedagogies.

I either visited, or talked with Principals or teachers, or researched a variety of schools to obtain a snapshot of what is happening with ICT and teaching pedagogy in primary schools predominantly in Auckland's North Shore region. Some of the contact was formal, as in a visit to classrooms in the school, and at other times, informal, with discussions with teachers that teach at the schools. I endeavoured to focus on schools similar to Verran Primary as well as those that were in the Birkenhead area and which our pupils feed into after they leave primary school. The schools were: Beachaven Primary, Birkdale Primary, Birkdale Intermediate, Birkenhead Primary, Chelsea Primary, Kauri Park Primary, Verran Primary. I also saw or discussed issues with these schools outside of our catchment area - Milford Primary, Opaheke Primary, Takapuna Normal Intermediate, Willow Park Primary.

Findings

As I researched and talked about ICT I realised that my sabbatical topic was immense, with change management, inquiry learning and teaching pedagogy, all topics in their own right. Combining them into one sabbatical investigation has been ambitious. My discussions with schools has concentrated on mobile technologies and the changes in teaching pedagogy that are necessary to integrate them into the curriculum. Certainly my focus with schools has been about the adoption of tablets/ipods and how teachers are using them.

The following are some definitions of common terms used in this project.

e-Learning - www.elearning.tki.org.nz defines e-Learning as learning and teaching that is facilitated by or supported through the appropriate use of information and communication technologies. Learning is the key aspect and as such "e-Learning is not simply associated with modes of delivery or the functionality of a particular technology, but forms part of a conscious choice of the best and most appropriate ways of promoting effective learning."

Blended learning – is the combination of traditional and e-learning practices.

Bring your own device - Bring your own device (BYOD), or sometimes BYOT (Bring your own technology), or BYOB (Bring your own browser) refers to technology models where students and staff bring a personally-owned device to school for the purpose of learning. From www.elearning.tki.org.nz

Personalised Learning - www.elearning.tki.org.nz has this explanation. Personalised learning allows students to take control of their own learning. Each student is unique and learns in different ways. Student learning needs, interests, and capability determine the pace of learning. In a personalised learning environment the learning objectives, content, method, and pace may all vary (so personalisation encompasses differentiation and individualisation). In this environment students understand how they learn; they drive and own their own learning; become co-designers of the curriculum and their learning environment.

School Information

All schools are on a journey that is appropriate for them and their community but they do not represent a consensus of opinion on the way forward. All have a willingness to embrace mobile technologies and all have done this in a manner unique to their situation.

The following is a list of methods that the schools in my project have used to introduce mobile technology.

- Some have established trial classrooms for ipads, apple TV, laptops and other ICT tools in order to move towards personalised, mobile learning environments.
- Others have established netbook labs with a specialist teacher utilising Google Drive suite of online learning tools.
- Others have computer pods of 8 computers that serve 2 or 3 classrooms (usually Year 5 or 6).
- Others have retained a computer suite of 15 computers used on a timetabled basis.
- Others have committed to problem-based learning modules utilising hardware and software that is already available in the school.
- Many have data projectors and interactive whiteboards in senior classrooms.
- Others have mimeos in classrooms.
- One school is progressively introducing 1 ipad between 2 or 3 students.
- Others have trialled sets of 10 to 15 ipads on a roster basis through various classrooms.
- Others have put 3 or 4 ipads/tablets in each classroom.
- Others are in the process of establishing 'digital classrooms' as opposed to 'e-learning classrooms'.
- Yet others have boldly begun a Bring Your Own Device (BYOD) programme at certain year levels to enable individual access to a mobile learning environment.
- One school has tackled teaching pedagogy first through introducing personalised learning in certain classrooms and year levels and has initiated a staged introduction of Bring Your Own Browser (BYOB) for Year 5 and Year 6 pupils as well as sets of ipads in each junior class.
- All schools have embarked on professional development for some teachers on ipad use in classrooms.
- Most schools have at least 1 or 2 teachers keen to drive improvements in e-learning in their school.
- Most schools lease some of their ICT resources.
- With the exception of one school, all are utilising older computers/technology in classrooms and use them in combination with newer technologies like ipads, ipods, tablets.
- No school had a 1:1 programme using computers and tablets, throughout the whole school.

Whatever category a school falls into, there has been, or is, a learning curve for the classroom teacher in how best to integrate ICT in the curriculum. The change management I witnessed was not so much in terms of pedagogy but a commitment by school management to provide robust, reliable, fast infrastructure, hardware and mobile technologies, mainly tablets. Without the former, the teacher's experience of digital learning can be a frustrating, time consuming experience that is readily rejected. It takes a technology-literate teacher with an interest in all things digital, who also displays great patience and perseverance, to work through the unique problems each school faces. Due to time pressures, financing, old technology and inefficient infrastructure, teachers can easily put mobile

learning in the “too hard” basket and continue with traditional practices that they know will benefit children’s learning, especially in the key areas of literacy and numeracy.

Faced with new technological developments, schools often provide inadequate professional development – both in quantity and quality – to enable staff to stay abreast of evolving pedagogy. Most teachers are learning as they go and pass on their knowledge to other colleagues. The reluctant teacher, or those lacking in confidence, or those that need greater support, or those that are not familiar with modern technology, are all quickly left behind in embracing integrative technologies in the classroom.

All this is not new and has been evidenced over a number of years as computers and the internet became common learning tools. What is different now, is the rapid advance of mobile technologies and the opportunities they offer for differentiated, personalised learning resulting in necessary changes to teaching pedagogy. Some schools admitted that relatively recent technologies, such as mimeos and desktop computers, are sitting unused in cupboards. A sign perhaps, of the speedy adoption of mobile technology in the wider community, and the difficulties schools face in financially committing themselves to “new” technologies that rapidly become obsolete. Not to mention of course the lag that professional development has in assimilating these technologies.

Schools are once again playing catch up through embracing tablets, ipods, ipads and smartphones as teaching tools in classrooms. Unfortunately, the reality is that these devices are all designed to be used by one person and the adaptations that schools make to ensure their equitable use in modern classrooms, will not automatically enhance children’s learning. The schools I visited would freely admit that they are at the initial stages of personalised learning and integrating these mobile technologies into children’s learning. Many are simply consumers of technology, not creators of learning.

Research Findings

1) The Big Picture - What is 21st Century Learning and how has it come about ?

The New Zealand Council for Educational Research has a web site www.shiftingthinking.org that describes theory and practices for the educational sector. It describes the late 1990s as a period of great change –socially, politically and economically – and particularly in knowledge, especially in how people *see* knowledge and how they *use it*. This period to the present has been termed The Knowledge Age in which “knowledge and ideas are the main source of economic growth New patterns of work and new business practices have developed, and, as a result, new kinds of workers, with new and different skills, are required. “ In addition, the meaning of knowledge is changing to an energy that makes things happen. Knowledge is valued for what it can do rather than what it is. Knowledge is not the preserve of individuals but is produced by groups of people who collaborate for a specific purpose. The Post-Industrial or Knowledge Age is also termed 21st Century Learning where people need more than “knowing” knowledge. They need to be able to do things with this knowledge and to use it to create new knowledge. “Knowledge Age worker-citizens need to be able to locate, assess, and represent new information quickly. They need to be able to communicate this to others, and to be able to work productively in collaborations with others. They need to be adaptable, creative and innovative, and to be able to understand things at a ‘systems’ or big picture’ level. Most importantly, they need to think and learn for themselves, sometimes with the help of external authorities and/or systems of rules, but, more often, without this help.” Schools in the 21st Century have to be able teach students how to work out for

themselves what to do rather than try and fill them up with all the knowledge they need beyond school. “21st century schools need to develop different skills and dispositions from those that were required in the 20th century..... A new mindset is required..... ‘21st century learning’ is a shorthand term that draws together some of the ingredients of this new mindset.”

The new mindset represents a shift from modernism to postmodernism. “Thus, where modern thought emphasises direction, order, coherence, stability, simplicity, control, autonomy, and universality, postmodern thought emphasises fragmentation, diversity, discontinuity, contingency, pragmatism, multiplicity, and connections.” (See Appendix 1)

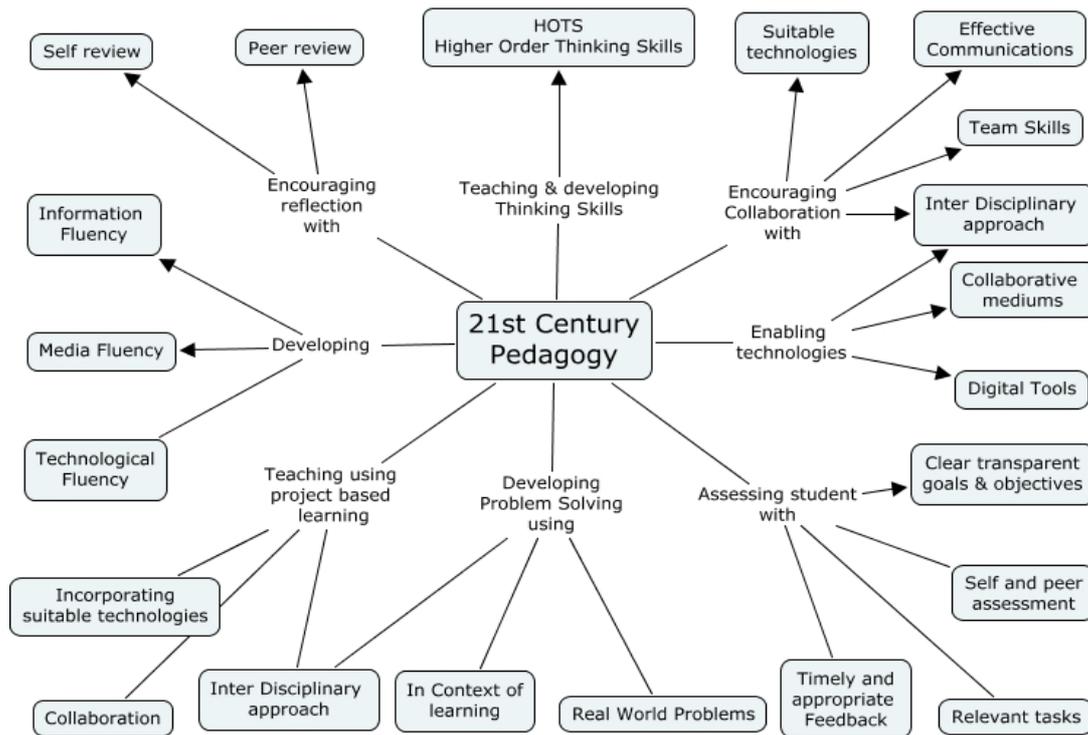
In June 2012 a research project by NZCER by Rachel Bolstad and Jane Gilbert with Sue McDowall, Ally Bull, Sally Boyd and Rosemary Hipkins, titled *Supporting future-oriented learning and teaching – a New Zealand perspective* discussed the overuse of the term “21st century learning” as being problematic and possibly not as applicable in the second decade of the 21st century as it had been in the latter years of the 20th century. However, they decided to keep the term and to use it interchangeably with “future learning” because it was already backed by extensive research. The authors took the stand that “21st century learning is not a fixed prescription, nor a known formula, but rather represents a cluster of new ideas, beliefs, knowledge, theories and practices.” Within New Zealand the occurrence of these beliefs etc are visible in some classrooms and schools and are not yet in evidence in others. www.educationcounts.govt.nz/publications/schooling/109306

2) Pedagogy

The school environment that today’s students are growing up in is vastly different from the one that I experienced. This statement applies for over 85% of the teachers in my school as well as for many of the schools in the project. “We live in a digital world where computers, tablets and mobile devices are predominant. If you are under the age of 31 you grew up surrounded by digital media. Our students are digital natives. They don’t know anything else, this is their lifestyle.” Quote from the ebook *The 21st Century Skills Teachers and Students Need* - link <http://www.educatorstechnology.com/2012/04/21st-century-teaching-and-learning.html>

New terminology such as future learning; personalized learning; lifelong learning; collaborative learning; virtual learning; teacher centred classrooms; student centred learning environments; anytime, anywhere learning; just in time learning, are all catch phrases of 21st Century pedagogy and learning. This is learning that prepares for the future by solving real world problems in a continuous way while coping with real world events and communicating in daily life.

Andrew Churches is a teacher at Kristin School on the North Shore in Auckland. He has produced some outstanding work on a number of issues. The following graphic is his work and is something our school has used as a starting point for discussion on our 21st Century teaching journey.



<http://edorigami.wikispaces.com/21st+Century+Pedagogy>

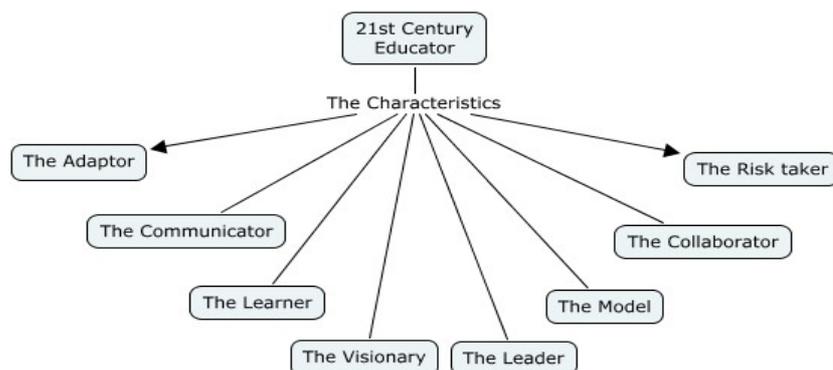
Andrew Churches further explains:

We have heard a lot about the 21st Century Learner. We know that they are:

- collaborative
- adaptive
- information, media and technology savvy
- communicators
- immediate and instant
- require instant gratification
- creators and adaptor

<http://edorigami.wikispaces.com/21st+Century+Teacher>

But what about the 21st Century Teacher, what are the characteristics we would expect to see in a 21st Century Educator. We know they are student centric, holistic, they are teaching about how to learn as much as teaching about the subject area. We know too, that they must be 21st Century learners as well. But teachers are more than this.



Above graphic from <http://edorigami.wikispaces.com/21st+Century+Teacher>

Pedagogies that promote problem solving and collaboration with others, encourage children to use higher order thinking. Children become not only recipients but also contributors in their own learning. Pedagogies that foster interaction and cooperation, promote risk taking, encourage questioning and reflection are suited to 21st century learning. New learning relationships between teacher and pupil are established so that the student can become a proactive partner in their own learning.

In order to promote the integration of technology into teaching and learning methods, various frameworks have been developed. A model of interest is Mishra and Koehler's Technological Pedagogical Content Knowledge (TPACK) which identifies the knowledge teachers need to teach effectively with technology. At the centre of this model is the overlap of three primary forms of knowledge – Content (CK), Pedagogy (PK) and Technology (TK). The TPACK model does not view these knowledge bases in isolation. Effective technology integration involves a complex, unique relationship between these components of knowledge in different environments that involve different teachers, year levels, culture, school factors, demographics. (From www.tpack.org). A teacher capable of utilising all these three forms of knowledge will have a greater expertise than a teacher who may only be proficient in one of the knowledge aspects.

The SAMR model by Dr Ruben Puentedura is another framework to scaffold technology integration into education. It suggests integration moves from Substitution to Augmentation to Modification to Redefinition. In the latter stage this equates to Bloom's highest order thinking skills. From Puentedura's web blog www.hippasus.com/archives/2013/08/22/SAMR. At Substitution level teachers or students are only using new technology tools to replace old ones. For example, using Google Docs for writing instead of Microsoft Word. Augmentation is similar to this but it has added functionalities such as saving to the cloud instead of a word document. Modification is where technology is being used to redesign tasks and transform students learning. Here, technology may be used to collaborate or share feedback on a task. Redefinition means that students are using technology to create new tasks. For instance, they may use technology to communicate with people from around the world, discuss opinions using chat rooms or private networks, and post conclusions to their own blog or school website.

Pedagogical change occurs when there is greater integration of technology into the curriculum.

3) Change Management

This topic is huge, so I have provided a snapshot of things that I have found interesting and relevant to primary education in New Zealand. Each school leader will have a unique approach to change management in their school. The following points and links are included to stimulate your curiosity rather than as an answer about how change can be initiated or managed in primary schools. I only know I have identified a starting point for my school and that the process will take time.

Once again the NZCER is a good starting place as research is New Zealand focussed and it collates information over a number of years. The article, *Supporting future-oriented learning and teaching – a New Zealand perspective* by Rachel Bolstad and Jane Gilbert with Sue McDowall, Ally Bull, Sally Boyd and Rosemary Hipkins in 2012, provides an overview of why change is needed and emerging principles of future learning. These are: personalising learning; new views on equity, diversity and inclusivity; a curriculum that uses knowledge to develop learning

capacity; rethinking learners' and teachers' roles; continuous learning for teachers and educational leaders; new kinds of partnerships and relationships.

A sub theme of the above research was the role of current and emerging technologies on teaching and learning. Simply providing new ICT tools will not necessarily translate into beneficial educational change. The potential for new technologies to transform teaching and learning is dependent on educators being able to utilise these capabilities in relation to the six principles of future learning mentioned above. As Bolstad, Gilbert et al state "It is further dependent on schools having the infrastructure, inspiration, capability and opportunity for innovation to achieve these kinds of teaching and learning."

www.educationcounts.govt.nz/publications/schooling/109306

The Ministry of Education has produced an E-Learning Planning Framework to help schools assess their capability and to plan for the future. The four phases of e-learning involve Emerge, Engage, Extend and Empower and involve 5 dimensions - Leadership and Strategic Direction; Professional Learning; Teaching and Learning; Technologies and Infrastructure; Beyond the Classroom. The rubrics created enable schools to self review and set next steps in their e-learning pathway. <http://elearning.tki.org.nz/Professional-learning/e-Learning-Planning-Framework2>

While the options are many, the solutions are usually a compromise between money, professional learning, willingness to change, and community support for change. All the readings indicate a necessity for change to be part of a school's strategic vision that clearly states the desired outcomes in relation to the school's values and learning intentions. Central to this is the learning environment and outcomes for students. <http://www.elearning.tki.org.nz/Leadership/School-vision/Creating-a-vision-to-lead-e-learning-in-your-school> is a video by Dr Cheryl Doig on implementing e-learning into a school and how to go about it. The e-learning vision provides not only direction for your school but also how ICT will enable improvement in students' learning. The professional development plan sets out the pathway for your teachers to achieve the learning outcomes. Part of the PD plan should involve a Change Management Plan. Appendix 2 shows a graphic for this and though it is for secondary schools it does have relevance for primary situations. The infrastructure plan establishes the platform on which you will base your learning intentions. The finance plan establishes the resources required and the timing of their availability. It is the school leader that will drive the school's strategic plan. The challenge can be about stimulating colleagues to be inspired and invigorated by the risk, rewards and opportunities of blended learning.

All organisational change needs a leader to drive it. It is this person who must ask the hard questions and address the 'elephant in the room'. The Sabbatical Report by Derek Linington (Term 1, 2012) discussed adaptive leadership which is about change leading an organisation to thrive in a new environment. Without discarding what has been done in the past, adaptive challenges often require a fundamental shift in how and why things are done in the school and classrooms. This process does involve loss by one or more people and can be extremely difficult. As Linington points out, it is this loss that creates people's reaction to change. Organisational change results from addressing the adaptive challenge.

Robert Kegan is a constructive-development psychologist whose theory is summarised at www.shiftingthinking.org. The main thrust of his belief is that the constant changing demands of our lives may be inappropriate for many adults. Kegan says people should not be blamed or punished for failing to adapt to changes in their lives because developmentally they cannot cope with the changes. He suggests that there should be support in development and patience to wait

for development to occur. Kegan believes that the way people make meaning of their surroundings grows and changes over time. Transformative learning is evidenced when someone changes their behaviour, the way they feel and what and how they “know” things.

Barriers to change exist and the process can result in organisational and personal conflict. Surprisingly to many people, the success of an organisation can also become a barrier. The article by Kate Bleasdale, *21st Century Learning Ideas*, in the New Zealand Education Gazette (Volume 91, Number 19 Oct 2012), identifies that “one of the barriers to change for schools in this country could be that their current classroom model is already performing well.” The implication is that people are resistant to change in schools that are successful. When things are working well educators can resist change, especially if there is a belief that change will not lead to better student outcomes. This situation can be addressed by the fifth theme of 21st century learning, namely, establishing a culture of continuous learning for teachers and educators.

The article by Peter Hill <http://www.educationalleaders.govt.nz/Leading-change/Leading-and-managing-change/What-Headteachers-Need-to-Know-About-Teaching-and-Learning> has many suggestions on what Principals need to know about teaching and learning in order to implement change. Hill discusses the growing complexity of the role of the Principal which has meant that the Principal can be diverted to other roles associated with running the school, away from that of educational leader. This means less time to devote to the core business of the school, notably teaching and learning. This has an impact on the leadership required to bring about transformation. In smaller schools this can be a factor as the Principal is the only senior management person available to deal with day to day and operational issues because there is not a walking DP.

While technology may be a driver of change, the importance of training and support for teachers and students cannot be underestimated. Many researchers state that technology should not be the primary focus but that the professional development and support for students must be the priority in driving change. This quote summarises this point - “The transformation of learning and teaching requires more than provision of tools – it requires ongoing support, professional learning, research, leadership and guidance.”

http://epotential.education.vic.gov.au/showcase/elearning_planning/elearning_vision

The exemplars on Best Evidence Synthesis (BES) attempt to make a difference in student outcomes by promoting and celebrating effective teaching pedagogies. The information in these exemplars provides practical guidelines that school leaders and teachers can utilise for planning, reflection, and supporting pedagogical change. This link identifies and explains the exemplars <http://www.educationcounts.govt.nz/topics/BES/bes-exemplars>

There are a number of frameworks for change management. The Concerns-Based Adoption Model (CBAM) describes, explains and predicts probable teacher behaviour during the change process. It identifies seven stages that individuals go through when they are experiencing change. This is based on the concerns they have about the change. Generally the early stages are self-oriented with concerns about what is the change? and how will it affect me? The next stage is task oriented – how do I do it? How can I organise myself? Why is it taking so long? When self and task concerns are resolved individuals then start to consider the impact of the change. Here the concerns are - Is this change working for students? What more can I do to improve learning outcomes. The important point about this concerns based model is that it can have major implications for professional development. The first requirement is to address the questions

people ask, assess where people are in relation to concerns. A lot of professional development involves 'how to do it' before addressing self concerns. This model also suggests implementation of change will take a number of years. (From *Taking Charge of Change* by Shirley Hord, William Rutherford, Leslie Huling-Austin and Gene Hall, 1987.)

4) Inquiry learning and E-Learning

Inquiry learning reflects the philosophy of John Dewey who believed learning starts with curiosity. It is a student centred, active learning approach that focuses on questioning, critical thinking and problem solving. It involves asking questions, gathering and analysing information, finding solutions, taking action and reflecting on new found knowledge. Inquiry learning has been around for more than 30 years and is classified as authentic learning. It can also be termed problem based learning and action learning.

The New Zealand Curriculum states that e-learning has a great deal of potential to support learning by inquiry by helping students to make connections through exploration, enabling shared learning outside of the classroom and creating a supportive learning environment through personalising learning.

Claire Amos, *The Future is Here: ICT Trends in Teaching*, (NZ Gazette, Vol 91, No. 19 Oct 2012) identifies teaching as inquiry as a vehicle for providing ICT professional development for teachers. Here the focus is on student needs and teaching and learning rather than on the ICT tool and strategy. Inquiry learning was part of the e-learning action plan and was used as a guide for the integration of ICT tools and strategies into teacher's planning. This in turn helped identify areas where individual teachers needed ICT professional development. The main aim of the process was to keep the focus on student learning not ICT tools.

The above article describes the move for professional development to focus more on the relationships between the key competencies (especially thinking) and Effective Pedagogy (particularly differentiation and collaboration) and e-learning but still use inquiry learning as the process.

I found the sabbatical report by Christine Munro (Term 2, 2012) on Inquiry Learning a very useful summary of current frameworks. She discusses Lane Clark, Jamie McKenzie and the 5E's Model.

While a continual review of learning technologies and professional development is necessary to ascertain the impact of e-learning on student outcomes, research indicates that children are more engaged and positive when e-learning is used in an authentic way. For teachers, the use of inquiry learning to provide professional development has been beneficial for planning, teaching strategies and personalising professional development to meet each teacher's needs. It reinforces lifelong learning and demonstrates learning to learn.

E-learning is suited to the collaborative pedagogies mentioned above. Both the nature of the learner and what and how they learn has altered. A mix of face to face learning and technology generated learning, called blended learning, is now common place in many schools.

Relevant Comments From Schools

E-learning is characterised by the desire for 1:1 learning. Due to the substantial cost involved in achieving this schools have increasingly asked children to bring their own laptop or netbook. Now there is a shift from Bring your own device (BYOD) to Bring your own Browser (BYOB) where any internet capable device is acceptable.

However, some of the ICT technicians who work in schools have some pertinent comments to make about these policies.

- It has become increasingly common for inappropriate photos, videos and files on student mobile devices to be brought to school and shared with other children, even at primary school. This goes against parental expectations that devices and content is 'safe'. It also goes against digital responsibilities. It also places the school in an untenable position and takes up a lot of teacher, senior management time in sorting out issues.
- There can be an issue of the security of personal devices and virus threats to the school network.
- There is a rise in attempts to hack into school networks.
- The insurance of personal devices needs consideration. Security of devices at school, particularly for primary age children, needs consideration.
- Finally, there is an increased need for an onsite technician to sort out problems or monitor activity.

<http://elearning.tki.org.nz/Technologies/Tools-and-technologies/BYOD> provides good summaries of the BYOD requirements and provides a link on the pros and cons of implementing this policy.

It is important to spend time on teaching children some of the skills needed in 21st century learning. Such things as learning to be a learner, time management, on task behaviour, self assessment, reflective questions, individual expectations, how to resolve conflict, what can I do next, who can I go to for help, goal setting, all need practice.

With the growth of social media sites and their use in schools the need for Digital Citizenship is an important element of e-learning. Netsafe in New Zealand provides wonderful resources for teachers and students. Digital Citizenship is at the core of any e-learning. Increasingly it is up to the individual to assume responsibility for breaches of rules rather than the school provide mass restrictions on sites that may have objectionable material.

Secure wireless, firewall, anti-virus software, robust passwords are all important prerequisites but still need personal responsibility protocols. Learning Management Systems may provide necessary protection for schools.

Recognising the source of information from the web is as important as that from books or journals. It is important to emphasise that plagiarism is not acceptable in 21st century learning. Copyright law should be enforced by schools and a policy on the use of Creative Commons established.

Conclusion

It is my view that Primary Schools, because of the age of their students, have different requirements of, and needs for, e-learning compared to Intermediate and Secondary Schools. Primary schools have a responsibility to create a broad-based learning platform with emphasis on literacy and numeracy.

Our challenge is to integrate e-learning into our already successful model without compromising the learning outcomes of our current students. There is a need, and a place for, face to face teaching pedagogy alongside technology use. In my view blended learning provides the best fit for our school. It is a process that provides a mix of face to face teacher-lead learning with child-centred inquiry learning. It provides motivation for staff to adopt a different teaching pedagogy and creates a collaborative, constructivist environment for further professional development. I hope to encourage change by providing opportunities for staff to do things in new ways that are multimedia friendly and which will be engaging for students but are not threatening to staff. Our community, while embracing technology, has also expressed caution about children constantly in front of technological devices. Verran Primary School needs to review, plan and set goals for moving both individual teachers and the school as a whole, towards the empowering phase of the e-learning framework. Our means of achieving this will be to revisit our enviro-school ethos via inquiry learning and curriculum integration.

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Sabbatical Reports

Christine Munroe Term 2, 2012 *Inquiry Learning in the 21st Century*.

Derek Linnington Term 1, 2012 *How can adaptive leadership help me build leadership capacity within our school to ensure that we are able to lead the change that is required to meet the needs of the 21st Century Learner ?*

Articles

NZ Gazette, Vol 91, No. 19 Oct 2012 *The Future is Here: ICT Trends in Teaching* by Claire Amos

N Z Education Gazette Vol 91, Number 19 Oct 2012 *21st Century Learning Ideas* by Kate Bleasdale

Book

Taking Charge of Change by Shirley Hord, William Rutherford, Leslie Huling-Austin and Gene Hall, 1987 published by Association for Supervision and Curriculum Development. National Academy of Sciences, USA.

Appendix One

Extract from http://www.shiftingthinking.org/?page_id=182 NZCER *Shifting to 21st Century Learning in education and learning*

The term ‘21st century learning’ is a kind of shorthand for what needs to be different in schools if young people are to be well prepared for life in the Knowledge Age. It is usually used to refer to some or all of the following:

- building **learning capacity** – building the *ability* to learn, and to *go on* learning more—and harder—things, without a teacher or other authority figure to help. This is very different from seeing learning as instruction designed to help students ‘get’ existing bodies of knowledge
- developing **competencies** – building a broad set of basic skills needed by everyone for life and work in the 21st century. This is a different approach from encouraging students to accumulate knowledge-based credentials)
- developing the ability to **do things with knowledge** – using knowledge to develop new knowledge, as opposed to ‘getting’ existing knowledge
- developing **personalised learning programmes** – co-constructing programmes of learning for students that build their general competencies and scaffold their development as learners, but allow them to work at their own pace, and in contexts of interest to them. It is the opposite to a one-size-fits-all approaches
- acceptance of the idea that **everyone must achieve** and leave school ‘tertiary ready’. From a 20th century perspective, school is a place of screening and sorting people for their future employment destinations
- explicit teaching of **general intellectual skills** – such as analyzing, synthesizing, creative thinking, practical thinking and so on. The 20th century expectation that these would be developed implicitly, via exposure to the traditional subjects
- an emphasis on **‘right brain thinking’** – the idea that ‘left brain thinking’ (logical, analytic, detail-oriented thinking) is necessary, but no longer sufficient, and ‘right brain thinking’ (aesthetic, synthesising, simultaneous, ‘big picture’ thinking) is now just as important
- developing **people/relationship/collaborative skills** and emotional intelligence.

Appendix 2

From <http://ppta.org.nz/index.php/resources/publication-list/2460-change-management>

Change management process

