



NATIONAL COUNCIL OF WOMEN OF NEW ZEALAND

TE KAUNIHERA WAHINE O AOTEAROA

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Submission to the Education and Science Committee on the Inquiry into 21st Century Learning Environments and Digital literacy.

The National Council of Women of New Zealand (NCWNZ) is an umbrella organisation representing 51 nationally organised societies and national members. It has 23 branches throughout the country attended by representatives of those societies and some 150 other societies as well as individual members. NCWNZ's function is to represent and promote the interests of New Zealand women through research, discussion and action.

This submission has been prepared by the NCWNZ Education Standing Committee after consultation with the membership of NCWNZ. It has been reviewed by the Parliamentary Watch Committee and the Board of NCWNZ.

General Comments

The stated purpose of this inquiry is to investigate and provide recommendations on the best structures, tools, and communities, in both rural and urban New Zealand, that could better enable students and educators to attain the knowledge and skills, such as digital literacy, that the 21st century demands of us all. NCWNZ believes that it is not possible to discuss digital learning without clarifying the whole context of learning.

Two of the largest challenges are:

- the facilitation of the technology and
- the lack of vision around what the technology is most useful for.

There needs to be discussion about the following learning priorities:

- Learning readiness and how to identify it, and how to develop catch-ups where necessary [One size does not fit all]
- Students' understanding of how to learn – if they understand learning they will appreciate the potential of digital learning better
- The importance of inquiry learning, critical thinking and gaining a balanced viewpoint for sound and creative learning
- The importance of hands-on experience
- Developing the ability to analyse and evaluate, self-critique and problem solve
- The critical importance of developing moral values and attitudes for the good of community and society and themselves
- Digital literacy will only help learning if learners understand how to use it to solve problems, and changing the present learning environments will be valuable to the extent that it expedites 'good' learning i.e. not harmful learning as in criminal activity

Responses to the Terms of Reference

- a) Investigate possible options for the best facilities that support teaching and learning in 21st century schools. In particular, investigate more flexible teaching spaces

Major modifications are needed to existing school building interiors and incorporated into new buildings to allow for small and large groups and individual spaces so that teachers and students can work in a variety of patterns. Central 'hubs' with 'breakout' rooms are probably the starting point, along with appropriate furniture. Attention also needs to be given to acoustics so that small-group discussion and collaborative learning can occur. These ideas on the development of new building facilities have been around for several generations of learners and they have merit, but the logistics and costs need to be warranted by better learning results.

However, new facilities go much wider than simply supplying the learning community with laptop computers, interactive whiteboards and personal tablets or handheld devices. Also, it should be remembered that today's new equipment will be redundant in a relatively short time. We don't know what the next "iPad" or other handheld device will be and what functions it will have.

- b) Investigate possible changes to the timing of when learning can occur, given the spread of handheld devices

Effective learning has always occurred outside as well as inside the school environment. Access to material is only one part of the equation. Learning how to process and make sense of material is where the role of the teacher will continue to be vitally important. In the new e-learning environment students will still need personal contact with a teacher or mentor as well as peers to bounce ideas off.

Internet access allows formal learning to be accessible all the time. Research (Bhatti et al., 2009) comparing lecture versus on-line delivery methods at tertiary level, concluded that there was significantly greater knowledge acquisition with e-learning where the learning website was available 24 hours a day compared to a weekly hour long lecture. In terms of the 'tail' end students, e-learning can be done at their own pace and they can have tailored programmes of study, using valuable face-to-face teacher time for follow up, discussion and problem solving.

While off-site learning will be possible in the new e-learning environment, this will impact on children, their families and the working community differently. For example, the increase in the use of technology for bullying and cheating occurs mostly when supervision is minimal. Children from "disadvantaged" homes often need the order and security of a school environment for e-learning to succeed. Importantly, off-site learners will require instruction in responsible use and safe practices and teacher / facilitator guidance will be essential for this.

- c) Investigate possible options for the best technological infrastructure that supports teaching and learning in 21st century schools

Arguably, children are often the best users of new technology but there is a real discrepancy between learning the tools and using the tools for learning. Most children can navigate their way around on-line computer games, can search and even download from the internet but have little or no knowledge of the basic programmes they will need to turn their Google research into credible student assignments. There will also be a need for increased focus on learning basic skills (reading, maths and using technology). Underprivileged students do not come through with the same skills and this erodes their confidence.

There is a major challenge between the knowledge and the skills. The knowledge is the easy part - turning the device on and finding Internet Explorer, going to Google and finding information. The

skills involve reading the material, summarising, critiquing it, developing a logical argument, comparing it, referencing it etc. Those are the literacy skills we want our children to have and they are skills crucial in the internet age because the www is largely un-moderated and poorly referenced.

d) Consider how the rollout of ultra-fast broadband (UFB) will affect teaching techniques and processes, and whether additional resources or training may further enhance the positive effect of UFB on teaching and learning outcomes. In particular, investigate the role and efficiency of the Network for Learning.

How the rollout of UFB will affect teaching techniques and processes will depend entirely on the school vision, and the buy-in of all the stake holders. If technology is used to raise children's progress and achievement then it is useful. Researcher, John Hattie¹, maintains that children learn best through the relationship they develop with their teacher, regardless of decile, class size, attitude and aptitude and resourcing. It is this relationship that is crucial. However, children's technology use can potentially erode personal relationships as cell phone use, lap tops and ipads are very individual and independent tools. Whilst the potential for on line collaboration and virtual classrooms is huge and exciting, the relationship that is developed through team problem solving, discussion, creating and evaluating is the cohesion that builds communities and organisations.

Access to the internet does not necessarily mean that learning will occur any more readily than at present. What it does do is give the teacher a wider scope of materials to use. Students – depending on the level – may have more choice in content and presentation of material. Students will be able to present material in a more creative manner provided they are given appropriate guidance and tuition.

Many schools have already embraced the technology but don't have a clear strategy on how it is best used. There is a lot of capital tied up in this type of expenditure and arguably it is not being used effectively. Furthermore not all teachers are in the 21st Century mind-set and don't have the skills to facilitate the new style e-learning.

The role of the teachers and schools will continue to change from being providers of information to becoming facilitators of learning. Teachers need opportunities for retraining and modelling for collaborative and individualised approaches rather than just for the large-group teaching we are familiar with. The 'teacher up front' will still have an important place both in terms of explaining new concepts and developing the sense of being part of a learning community. The 'standard' classroom design with one teacher - has already become an option used for only part of most teachers' practice. Twenty years ago a good school library resource centre with study areas for small groups to 'break out' for reference work during class time was already quite a regular feature.

Teachers will need to be increasingly familiar with what is available on the internet and will need to be skilful in how to 'interpret' this, to make both the information and the internet processes accessible for the skills/understandings/capabilities of their students. Not all subjects lend themselves well to e-learning and schools will need to place more emphasis on recruiting and retaining teachers for creative, practical, or tangible subjects (e.g. art, physical education, workshop technology) which cannot be "learned" from the internet in the same manner as 'academic' subjects.

¹ <http://www.treasury.govt.nz/publications/media-speeches/guestlectures/pdfs/tgls-hattie.pdf>

John Hattie is associated with the Visible Learning Laboratories at Auckland University and

the document is Visible Learning, Tomorrows Schools, and The Mindsets that make a difference in Education.

According to the Network for Learning on the Ministry of Education's website², UFB will be rolled out progressively from 2013 to schools but will still not be universally available. While the Network for Learning sounds good in theory we suspect that there will be implementation difficulties. NCWNZ would suggest a phased approach with 'pilots' for groups of schools rather than the "big bang" approach.

In addition, the cost and provision of technical support required for maintenance, security and insurance will also need to be addressed as this is frequently a major expense for schools.

- e) Consider whether current generations of learners more readily adopt new technology, and whether increasing base levels of technological proficiency may promote independent learning

There is no question that the current generation of learners are increasingly technologically savvy and can adapt quickly when new technology is introduced to them. However, for 'independent learning' to be successful the learners first need to understand how to learn. The ability to be a successful independent learner is largely dependent on the age of the child and their home environment. Many children come from overcrowded and unhealthy homes, lack parental support, are English as second language speakers and have a poor attitude to learning. What current generations of learners are capable of depends upon their home environments, their skills and the access they have to the new technologies. It is the skills, support and encouragement from parents that enable these students and it is paramount that provision is made to support students who do not get that parental support.

- f) Investigate the opportunities for technology to increase collaboration between neighbouring schools, and between distance learners

Virtual global schools/universities and inter-school co-operation already exist, so the introduction of UFB and new supporting technology will expand and improve on what already exists as well as making it more widely available. Schools currently network in clusters based on area location. In future networks of interest could form clusters across the country and employ subject experts who could teach many more students than could be grouped in one school. In this way cost savings may be possible while at the same time increasing the quality and availability of student learning.

- g) Investigate issues of equity of access to technology in New Zealand schools, which includes establishing the current extent of New Zealand's digital divide

Currently there is no equity of access. NCWNZ is concerned that increasing use of internet, computers and hand-held devices as learning devices in schools may further disadvantage students from poorer families. Concern is also expressed about the possible justification of the increasing use of technology as a learning tool for lowering the pupil/teacher ratio to a level at which students will have little personal interaction and contact-time with teacher/s and other students. This will be the most challenging and important social implication of the introduction of UFB and its associated new technology. This investigation needs to be given priority before everyone gets carried away by the technology possibilities.

In co-educational school situations steps will need to be in place to ensure that both girls and boys have access to the technologies, and feel 'safe' to learn. Some NZ research has shown that students do not do as well in certain subjects (Maths, English, Technology, and Science) in a mixed class, as they do in single-sex classes. Some anecdotal evidence suggests that co-ed and girl-only schools do

² <http://www.minedu.govt.nz/theMinistry/EducationInitiatives/UFBInSchools/ANetworkForLearning.aspx>

not receive the same level of “old boy” donations and bequests as all-boys’ schools. If this is so, then it may have serious implications for the provision of new technology in these schools.

h) Investigate the impact of increased digital literacy on learning.

Irrespective of new technology being introduced, children still need face to face oral and group experiences with teachers and peers to develop their learning skills. Lack of success is a multi-faceted problem and requires a multi-faceted approach to combat. Children who are not succeeding educationally cannot be fobbed off by saying that the introduction of new technology is the answer. While all children may ultimately have a relatively equal level of access to UFB and new technology at school, this will not be the case in many poorer homes unless the required technology is provided to them at minimum cost or free.

NCWNZ considers that the issues surrounding the impact of increased digital literacy on learning should be the subject of a future longitudinal research topic.

Summary

Irrespective of how successful the rollout of the planned UFB and its associated new technology is, this will never replace the role of the teacher which is to encourage and believe in the student. The most successful teachers have very good relationships with their students and this will never change. It is important to understand that Ultra-Fast Broadband (UFB) is only one of the many learning tools that can be used by teachers and that it cannot solve many current learning issues.

NCWNZ is very concerned that UFB, with all its associated financial demands, is going to be too expensive for many schools and that the funding of the associated new technology to take full advantage of it will fall on already hard pressed school budgets. Unless the increased provision and use of technology and its resources in schools is very well conceived, funded and monitored, the digital divide will in fact widen rather than decrease. So much of success in this or any other educational endeavour digital or otherwise, depends on the effectiveness of the learning tools used and the support and expectations of the family/ caregivers and those with whom students associate.

Application of sound pedagogical theories adapted to suit e-learning will need to be applied in order for teachers and students to make the most of the exciting opportunities that online learning can provide. No learning environment however should be afforded funding or time if it cannot conclusively show that student progress and achievement will be raised, and that the perception students’ hold of themselves as learners can be enhanced. The learner should be the heart of the matter in all considerations.

NCWNZ cannot stress too strongly that the introduction of UFB and new e-learning technology is only one part of the total learning experience of our children.

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Education Standing Committee Convener