SABBATICAL REPORT

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"How do differing spatial settings align with quality 21st Century pedagogical activities"

The only constant in life is change. Jane Gilbert's book titled "Catching the Knowledge Wave" first awakened New Zealand educators to the impact of societal and technological change on education. In her work she explored new ways to consider knowledge and analysed profound implications for the way schools will have to be organised and therefore constructed.

Jane Gilbert's analysis of knowledge over time and considered implications for education

Then	Now
• Knowledge was conceived as something developed and known by experts, something that could be passed on from teacher to student	• Knowledge is rapidly created every day. Knowledge is the *process* of creating new knowledge. It is a product of "networks and flow" coming into being through interactions and intersections on a "just-in-time" basis to solve specific problems as they emerge.
• The purpose of schooling was to transmit knowledge to students, and the students' job was to absorb this knowledge in preparation for life after school. • Curriculum development was seen as the task of determining which knowledge students would need for their future, and organising this into a logical sequence of curriculum construction that would be taught by using expository, step by step methods and assessed in ways that produced, unambiguous results which ranked students.	• It is no longer possible to accurately predict what knowledge people will need to draw on as they move through life in the 21st Century. It has been argued that students need, among other things, opportunities to build their sense of identity, become self-reliant, critical and creative thinkers, and be able to use initiative, be team players and be able to engage in ongoing learning throughout their lives.
• These structures assumed societal stability and predictability in the kinds of jobs and social roles that people would move into once they left school.	• The kinds of jobs and social roles that people move into once they leave school will constantly evolve as a consequence of social, economic and technological developments.An increasingly globalised and interconnected and interdependent world will impact on lives. People who will be able to work with knowledge will be seen as the key resource for economic and social development.

So Modern Leavening Environments are about how the learning is happening, how students work together, and how we see the students' futures – what skills will students need?
So what type of environment is needed in order to best accommodate learning into the future? The generic label - right around the world – is "Modern Learning Environment"

It's hard to find a definition of a Modern Learning Environment, but University of Waikato Educational Leadership Centre manager Jeremy Kedian said it was about far more than the building's architecture.

"It's moving away from the walled learning space to a more open learning space where multiple students can interact with multiple teachers in a more creative and innovative way of learning."

Mark Osborne – Senior Consultant for Core Education - states, "Modern Learning Environments promote and support a range of pedagogies including delivering, applying, creating, communicating and decision-making. Modern learning environments support strengths-based teaching and can offer students and teachers flexibility, openness and access to resources.

John Laurenson – Principal of Shirley Boys' High School – draws a distinction between Modern Leaning Environments and Modern Learning Practice.

Modern Learning Environment are characterised by larger open spaces where larger numbers of students gather with 2-3 teachers, for Teaching and Learning.

Modern Learning Practice - where there is a Modern Learning Environment school, the lesson periods tend to be longer, up to 100 minutes is possible.

If the longer teaching time is to work, staff will need to meet regularly to plan lessons co-operatively. Typically lessons could be broken into, for example, three half hour segments – 1/3 direct instruction, 1/3 co-operative group learning, and 1/3 individual research learning. If three staff are involved in the lesson, they are the ones involved in planning and in the delivery of the lesson – he states.

The typical response received when educators were asked their thoughts on what is a "Modern Learning Environment?" in the twenty school visited (see appendix) was, a Modern Learning Environment is "an open plan classroom, plenty of space, multi-level learning, colourful furniture, collaborative teaching etc".

The physical space, the availability of technology, and set teaching time frames are all important and necessary ingredients to facilitate 21st Century education as outlined by Jane Gilbert (and now others). However, unless the teaching profession intellectualises the process the "real" change required will not happen. Many teachers have collaborated in their planning over recent time but still delivered to students in a traditional 'square box' classroom. The 21st Century requires more than just collaboration.

The 'real' change requires learning to be personalised, student-centred, connected to authentic real world contexts and issues. It must grow student capacity to be confident, independent learners with tools in their tool box so that when a 'problem' arises and they become 'stuck' – they can draw on knowledge and skill sets to work their way through it. This is at the heart of being an independent learner.

Modern Learning Environments and Modern Learning Practices must allow for explicit teaching of students – however grouped – to fill their 'tool boxes' with required skills/ knowledges. To facilitate this process, Modern Learning Environments must allow for a variety of spaces and Modern Learning Practices must allow students, amongst other aims, to:

- Establish prior knowledge
- Understand what skills need to be explicitly taught to move student capability forward

- Become team players so collaboration becomes meaningful
- Engage with reflection
- Use and evaluate use of technology

When planning and designing new "buildings' we need to empower our teachers to make the pedagogical transition expected of them, to build 21st Century learners. Teachers must also take from the past what they know works e.g. explicit teaching of particular skills. Collaboratively and individually teachers must intellectualise their way to a full understanding of 21st Century learning requirements.

Modern Learning Environments create the environment but the teaching practices must ensure our young people are taught in the manner required of them in the 21st Century. They must be encouraged to be creative, innovative, and confidently capable of leading change.

From his research and observations, Jaco Broodryk – Principal of Whakarongo School – made a shortlist of key elements for a 'new design' however, he concluded we cannot design new spaces for learning without a new strategy in a school for "Learning". Teaching and learning needs to change before new buildings arrive.

Modern learning environments must facilitate traditional pedagogies such as direct instruction when required, but they will offer students and teachers much more:

- **Flexibility:** the ability to combine two classes into one for team-teaching, split a class into small groups and spread them over a wider area or combine different classes studying complementary learning areas.
- **Openness:** modern learning environments traditionally have fewer walls, more glass and often use the idea of a learning common (or hub) which is a central teaching and learning space that can be shared by several classes. They provide opportunities to observe and learn from the teaching of others and be observed in return.
- **Access to resources (including technology):** typically a learning common is surrounded by breakout spaces allowing a range of different activities, such as reading, group work, project space, wet areas, reflection, and presenting. There is often a mixture of wireless and wired technology offering access as and when students need it, within the flow of their learning.

Research by Salford University establishes a strong correlation between the built environment where teaching takes place and test results in reading, writing and maths. In a year-long study, lighting, circulation, acoustics, individuality and colour were revealed to affect students' progress. It found eight out of ten environmental factors displayed significant correlations with the students' performance. This is clear evidence of the significant impact of the "built environment" on students' learning progression. The importance of this information for policy makers, designers and users is without question and must all be worked within 'best practice' for 21st Century learning.

Steven Harris states that schools must embrace a new paradigm and move away from what was once thought of as "school". This new paradigm is one where learning is personalised and collaborative, technology is adaptive, spaces are radically different to the traditional mind-set, and a community built on positive relationships is at the core. Teaching and learning culture must be informed by global trends towards change in routines, expectations, perceptions, technology and organisation structures in the 21st Century.

The sabbatical did not concentrate on identifying the specifics of appropriate and relevant pedagogical approaches but rather accepting that education in the 21st Century must offer much more. A balanced variety of pedagogical approaches will be necessary to meet future

learning needs from individual instruction, through to group instruction (class sizes in the mid-twenties have proven to work) and much larger group instruction to allow greater number of staff and students to work together to advance the competencies identified and stated earlier in this report – by Jane Gilbert and others. The sabbatical therefore concentrated on visiting and looking closely at the planning of new school builds.

Much information was accessed and will be made available on application to Otumoetai College drandell@otc.school.nz

This information includes:

The list of twenty schools visited were:

Bay of Plenty
- Papamoa College
- Te Puke High School
- Te Wharekura o Mauao
- Bethlehem Primary

Hastings
- Karamu High School

Taihape
- Taihape Area School

Auckland
- Auckland Girls' Grammar
- Takapuna Grammar
- Avondale College
- Albany Senior High School
- Mission Heights Junior College
- Ormiston Senior College
- Stonefields School

Japan (Hiroshima)
- Nagisa Junior High School
- Nagisa Senior High School
- Morioka – Chuo High School

Australia - Perth
- Canning Vale College
- Baldivis Senior High School

Canada
- University Hill Secondary School - Vancouver
- Sainte-Marie - Montreal

Photographs of 'new builds' for education in Auckland

- Albany Senior High
- Wilson School – Takapuna
- The University of Auckland
    - Medical School
    - Undergrad Labs
    - Business School
    - School of Engineering
- AUT School of Communications
- Mission Heights Primary School
- Ormiston Senior College
- BLENNZ School – Manurewa
- Kia Aroha College – Flat Bush
- Stonefields Primary School – Mt Wellington
- Elim Christian College Junior Campus – Howick
- Epsom Girls Grammar School Performing Arts Centre
- St Cuthbert's College Performing Arts Centre
- St Peters College – Sports
- Hobsonville Point Primary School
- Auckland Grammar – Sports
- Te Kura Kaupapa Mäori o Te Kotuku – Ranui
- Auckland Girls' Grammar
- Alfriston College
- Avondale College
- Hingaia Peninsula School - Papakura
- Saint Kentigern College
    - Science
    - Administration
    - Sports
    - Arts and Technology

Examples of concept designs for:

- Bethlehem Primary School
- Karamu High School
- Stonefields School
- Nagisa Junior and Senior High (Hiroshima)
- Canning Vale College (Perth)
- Baldivis Senior High School
- Dandenong High School (Melbourne)
- Dallas Brooks Community Primary School (Melbourne)
- New-look School Libraries designed for 21st Century Learning
- Creating the new look - furniture

Collated information from PPTA on "New Builds and Curriculum Change":

- Ormiston Senior Secondary School
- Albany Junior High School
- Botany Downs College
- Alfriston College
- Hauraki Plains College
- Albany Senior College
- Mission Heights Junior College
- Papamoa College

Further design and planning ideas / information:

- Dr Kenn Fisler “Linking pedagogy and space
- JISC “Designing spaces for effective learning”
- Dr Julia Atkin “Transforming Pedagogy”

Power point which summarises:

- that learning will be through more visual images, doing things and being fully engaged in differing learning programmes.
- that students will be organised more into larger groups, will have access to “flexible learning spaces” and with support space for explicit teaching (i.e. breakout areas).
- that learning spaces need to be highly visible, linked and incorporate technology.
- that areas will be needed to display work both on walls and digitally.
- that “rooms” will need areas for social one to one conversations and for small group conversations.
- that spaces will be needed for performing, displaying and specialist areas.
- that different shapes, size, colour and flexibility are paramount.
- that technology is an ever changing factor.
- that open spaces interplay with different structural material (wood, concrete, glass and colour etc), to enhance learning areas.

THE CONCLUSION

School leadership must establish their 21st Century approach to teaching and learning (pedagogy) before planning for any ‘new build’ begins. The alternative is that a new build could happen and teachers become dissatisfied and fail to use the ‘new build’ to its full advantage because their pedagogical practice has not changed.

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