e-Learning in Programmes of Inquiry:
It's not what you use, but how you use it...
and knowing how it uses you!

Sabbatical Report

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Acknowledgement

I would like to thank the Mt Eden Normal Board of Trustees for their support and approval of my period of sabbatical. I would also like to thank all those with whom I conversed throughout the ten week period and beyond for their generosity in terms of time and unfettered sharing on a range of topics.

Thanks are also due to the Primary Principals' Sabbatical Award Group for enabling this very rich professional development opportunity. I am a significantly more informed professional as a result of the experience, and it is probably a 'healthy' sign that its outcomes include challenged assumptions, numerous questions and the identification of what might be personal, if not sector concerns.

Sabbatical Intention

The aim of the sabbatical was to ascertain how Information & Communication Technology (I.C.T.) culminating in e-learning opportunities, is being used in NZ primary and intermediate school learning programmes, particularly programmes of inquiry.

The project developed from the Mt Eden Normal Primary School's (MENPS) strong belief that if the Key Competencies (M.O.E. 2006) are to be meaningfully developed as a curriculum for students, at least in the way that we understand them, then a significant pedagogical shift is required on the part of teachers and senior management. We are mindful that the issue is not just one of imposing I.C.T. or inquiry on an old pedagogy. However, as well as other aspects, we figured that such a shift would involve enhanced teacher and student use of I.C.T., which I will often refer to as e-learning, within an inquiry learning framework.

It is worth mentioning at this point that our developing understanding of the Competencies has been greatly assisted by interactions with Rosemary Hipkins, and particularly her publication *The Nature of the Key Competencies: A Background Paper*, (NZCER, 2006).

As a result of the analysis and synthesis of this information, I had the intention of developing a set of school-wide indicators which would assist our teachers to meaningfully integrate I.C.T. into inquiry programmes here at MENPS.

School Development Background to the Sabbatical Focus

For a range of reasons it was timely that Mt Eden Normal Primary School (MENPS) review its educational direction during 2004. Among them was that there had been high staff turnover, including the loss of the entire senior

management team in the preceding two years. I was appointed as principal in June 2004 and began duties in Term 3.

To initiate the review process, teachers were invited to describe what knowledge, dispositions, skills and attitudes they felt the MENPS graduate of the future would require. We used the preliminary M.O.E. 'core competencies' headings, (as they were known then) to classify their contributions. Essentially we described them using MENPS teacher thinking.

The competencies – *Making Meaning, Thinking, Managing Self, Relating to Others and Belonging, Participating and Contributing* – have since that time been extremely important 'touchstones' for the development of a very positive, future focused school-wide direction. Essentially, we began to use the present draft curriculum document from that point.

The 'touchstone' descriptors necessitated us to determine what MENPS was currently doing to assist their implementation, and more importantly, what changes needed to occur to pursue this direction.

Early on, we identified that change was required to the organisation and delivery of curriculum programmes, assessment practice and aspects of pedagogy. These three areas have formed the basis of our professional development programme since 2004 and continue to do so, as alignment of them is critical to achieving our goal.

As a first step, we decided to reorganise the curriculum as being made up of two main areas:

- *Foundation* (Literacy, numeracy and information processing/digital information literacy), and
- *Contextual* (all other curriculum areas) except for the 'well-being' aspect of the Health and PE curriculum which we regard as being integrated across the entire programme.

As part of drastically reducing the assessment requirements on teachers and encouraging them to use a more (but not entirely) formative approach, we developed a small number of year level indicators for reading, writing and number. These have become the major focus of teacher effort in terms of assessment, planning and feedback. The information processing/digital literacy area was the final *Foundation* area for this type of attention.

A Sharper Focus

The changes to pedagogy identified by teachers and senior management included the use of inquiry approaches across the school day, and placing more emphasis on the role of I.C.T. within them. A key assumption underpinning the pervasive implementation of inquiry based learning was that this type of programme would lead to an improvement in classroom levels of thinking. In particular, a greater focus on higher order thinking, or in Hattie

and Brown's (2004) terms, a better balance of surface and deep learning than was perceived to be the case at the time.

Using a holistic as opposed to an atomistic perspective of school development, I was keen that the two areas i.e. e-learning and inquiry learning, be thought of as *integrated*, rather than *separate* aspects of pedagogy.

The sabbatical was timely in that it allowed me to address this matter and associated factors in a relaxed and informal manner, based on New Zealand primary and intermediate school practice, and the viewpoints of educators researching in a range of areas of the sector.

As well, given the development of the new curriculum focus, I was interested to ascertain just how educators thought about the use of I.C.T. and inquiry learning, particularly in relation to the development of the Key Competencies.

I was also keen to get principals' perceptions regarding the potential of e-learning.

Information Gathering Sources

Most of the ten weeks (taken in Term 2, 2006) was spent in primary and intermediate schools here in New Zealand – 18 in all, located in Auckland, Hamilton, Tauranga, Palmerston North, Wellington and Christchurch.

The format of the visits generally involved a discussion with the principal about the school's learning orientation and how I.C.T. and inquiry were integrated within it. This was then followed by conversations involving key teachers, classroom visits and numerous interactions with students.

In most cases principals were keen to get feedback and impressions, so generally a sharing of perspectives completed the visit. At times this was just with the principal, however, in the main it was with senior management teams and lead teachers involved with I.C.T., inquiry learning and/or the development of curriculum programmes.

During the sabbatical period I also took the opportunity to attend a local principal's cluster forum day with a focus on inquiry learning (five schools presented) and an I.C.T.P.D. Cluster Day also relating to inquiry and the use of I.C.T. (presentation from one school).

As well, my investigation involved 'virtual' visits to a number of schools in New Zealand and Australia (The Kurwongbah State School Home Page has valuable information www.kurwongbss.eq.edu.au/). As I hoped, the 'time out' provided me with the space to complete a huge amount of professional reading.

In addition to the above, I arranged to speak with Dr. Mark Brown from Massey University for a morning. Mark's perspective and the references he was able to provide me have significantly influenced the overall outcomes of the sabbatical.

Selecting Schools

The schools I visited were selected as a result of conversations with the activ@eden I.C.T.P.D. Contract Director Pam Hook, education consultants and personal knowledge of schools often mentioned as having strong programmes in one or other of these aspects – I.C.T. and/or inquiry learning.

Investigative Framework

The following questions were asked in one form or another in all interactions and formed the framework of the sabbatical investigation:

- ***What is driving the educational direction of the school?***
- ***What role does e-learning play in the development of the direction?***
- ***How is inquiry learning used here?***
- ***What form does it take?***
- ***How is the use of I.C.T. and inquiry programmes linked?***
- ***Is it important that they are?***
- ***Have you developed standards or indicators to assist teachers plan and assess in this regard?***
- ***How important is the selection of the context for inquiry?***
- ***What is the balance between knowledge and process in your programme?***
- ***Is the use of I.C.T. enhancing student learning?***
- ***Is either of them improving levels of thinking?***
- ***Is any student self selection (students making decisions) evident in your programme?***

Professional Caveat

I need to underline that the investigation was not a rigorously controlled research project. As such, the style of this report represents its informal and multi-dimensional nature.

My interactions during and post sabbatical have been the catalyst for considerable personal professional thought and reflection. The experience has both confirmed and challenged previously held assumptions. It has raised numerous questions and identified issues concerning: *e-learning; its status in inquiry learning programmes; the balance between knowledge and process; teaching thinking in classrooms, and school-based curriculum development.*

What follows is an attempt to document my impressions addressing these areas. I urge readers to keep in mind that they are just that – *My Impressions*. I trust that you will find them interesting, helpful and maybe worthy of asking a question or two as to where your school is positioned on some of the issues raised. I have chosen not to individually identify schools, but will share a few anecdotes from my valuable time in them.

Impressions

School Direction

All of the schools visited had a clearly articulated educational direction. I was extremely impressed by the way in which principals had used a range of methods to develop a high degree of internal commitment to the direction, and depth of understanding of its major components. Some schools had 'branded' themselves e.g. as *'thinking'* schools, *'learning communities'*, and in one case, *'m.a.d. on learning' (making a difference).* In most situations there was a significant synergy between the rhetoric, documentation and practice.

Prevalent among the methods used to establish a direction was an articulation of the type of student the school wanted to develop. This 'student' was generally described in a manner that focused teachers' attention. Most often the descriptions were accompanied with information on how the school was going to achieve their goal. In addition to this, many schools had displays (static and digital) of the subscribed to direction in their foyers, in classrooms and on websites. In one case where the students were described as learning 'flyers', there were attractive models of aircraft in the classrooms to reinforce student performance and allegiance. Another school had developed a musical production to present their direction. I have a lingering recollection of one of the principal actors exhorting, 'I must learn to control my impulsivity!'

What did strike me was the influence of imported developments, such as the New Basics and Rich Task initiatives, and the number of schools that were using high profile change agents such as Art Costa and Joan Dalton in person and/or through resource web sites e.g. The PLOT Resource http://www.core-ed.net .

All schools seemed committed to incorporating the Key Competencies into their expressed direction. In some cases this was explicit and in others it was matching existing directional dispositions with them e.g. aligning them with Costa's *Habits of Mind*.

Although there is some dispute in the literature about the primary motivation for the M.O.E. direction, whether it be citizenship or an econometrics model, all of the schools were keen to pursue a direction that could be described as 'future-focused' and principals in particular, talked about the need to prepare students for the 21st Century and the importance of e-learning in this regard.

The role of e-learning

Maybe it is a 'quirk' of the schools I selected, but there was a definite pattern to the extent of the provision of e-learning opportunities and decile rating. Generally, the lower the decile, the 'richer' the environment.

All but one of the 18 schools had expressed an aim to enhance their digital environments in the future, generally based on the assumption that increased access to e-learning opportunities would assist the development of the school direction and promote the various dispositions associated with life long learning.

No school spoke about e-learning *on its own,* improving achievement, but many mentioned its impact on students' motivation to learn. One school had a radio station. Another, had its own television station which was being used to great effect to motivate and convey information.

In the main, e-learning involved accessing information and presenting it to an audience and happened in literacy and in what we (at MENPS) would define as the 'contextual areas' of the curriculum (e.g. social studies, technology and science). Generally the e-learning landscape I observed involved the use of interactive whiteboards, the usual range of applications, multimedia, investigation using the internet and pod casting. One intermediate school had developed a close link between its information centre/library, the use of I.C.T. and inquiry programmes.

From an assessment perspective, a few schools were using student electronic portfolios. Some had decided to discontinue them. Often, student presentations were used to make teacher and self assessments in relation to performance in information processing or competence in digital literacy and/or against a framework for inquiry.

In general, teacher and student knowledge and skill relating to hardware and software appeared to be governed on an 'as needed basis'. In many cases, teachers were 'expected' to engage in *personal, 'just in time'* learning to improve their capacity to manage e-learning experiences for students.

One school had developed an overview of an information literacy landscape as an exercise to raise awareness of the possibilities, rather than to govern programmes or assess against. Another had developed 'General Expectations for I.C.T.' based on the areas of Desktop Management, Multimedia, Word Processing and Internet use.

One other had developed an approach based on Year 1 & 2 student knowledge and skill of one application with the view that, having this ability, students would be then able to use most others available at the school. Assisted by talented and generous staffing, this school demonstrated the highest use of I.C.T. overall.

Inquiry Based Learning

All schools spoke of the need to develop programmes of inquiry based on the components of their stated educational direction and/or its future focused orientation, as well as the belief that this approach would result in more appropriate learning opportunities.

A small number of the 18 schools claimed that they had developed their own model for inquiry. However, most often schools indicated that they had used other models to *'come-up with their own approach'*. These were normally documented in a linear form and were displayed in staffrooms, workrooms or in teacher administrative material. Other schools were using approaches developed externally such as Gwen Gawith's *Action Learning* resource. In some schools the preferred inquiry model was linked to planning templates. Nevertheless, there was a good deal of standardisation in the 'way' that schools planned for the implementation of their inquiry programmes.

All schools felt that the development of the Key Competencies would be potentially enhanced through an inquiry based approach. One school programmed the initial two weeks of each term to develop skills and attitudes associated with: A Learning Community (Term 1); Questions and Questioning (Term 2); Thinking (Term 3) and Learning to Learn (Term 4).

Most schools visited were using an integrated approach to the presentation of topics. Such has been the effect of the present legislative requirements governing curriculum delivery, that most schools are integrating traditional subject areas under broad themes e.g. *Our Place, Our Space; Faster, Higher, Stronger* in order to offset overcrowding of the curriculum and avoid the coverage issue. Most schools tended to implement these integrated programmes for whole terms, or in some cases, the whole year.

A common inquiry learning sequence contained the following:

- *Immersion* (Tuning in, examining a focus question etc);
- *Brainstorming* (Establishing prior knowledge);
- *Questioning* (What do we need to know & how will we find out);
- *Finding Out* (Researching etc);
- *Creating* (A product or presentation);
- *Sharing/Celebrating* (Presenting) and
- *Reflecting/Evaluating* (Teacher or self assessment against an inquiry and/or an I.C.T. application rubric).

In many cases the phases were accompanied by 'thinking tools' from a range of sources, the most common being the Michael Pohl resources, particularly *Teaching Thinking Skills in the Primary Years – A Whole School Approach*, (1997). Some schools incorporated a consideration of multiple intelligences and/ or learning styles in their planning.

Most schools presented the view that student knowledge of the process of inquiry, or of thinking skills, was at least as important, or more important than

the knowledge (facts, ideas, concepts) acquired. Further, maintaining a 'balance' of curriculum delivery seemed to be as, or more important, than the actual knowledge to be gained and heavily influenced the choice of topics to be investigated. My general impression was that there was a leaning toward highlighting the process rather than knowledge aspects of learning programmes.

Just one school featured significant opportunities for student decision making. This was an approach which was introduced at the Year 5/6 level and was fully operational at Years 7/8 with outstanding results. The learning experiences offered to students included three different learning pathways (teacher allocated) based on a thematic investigation e.g. *Leaders*. The learning experiences included teacher led small group tutorials, independent e-learning tutorials, reflection time and the ability to negotiate the sequence of the day. Whilst promoting substantive independence, teachers were in touch with students through a subtle system of checks and balances involving teacher and student self assessments and milestone reporting.

In summary inquiry based approaches were very much in evidence. There tended to be: a common sequence for inquiry; topics/units tended to be based on broad themes; were taught over an extended period; involved the use of a range of resources, mainly print based but including e-learning in parts of the sequence (particularly the Creating and Sharing phases); were programmed for the afternoon teaching sessions (reflecting a common perception that Literacy and Numeracy were 'stand-alones' and didn't have to be inquiry based); exhibited instances of teacher and self assessment against rubrics, and generally involved a type of presentation to conclude the learning programme.

Although some schools had developed information literacy and e-learning experience frameworks, no school had developed indicators that integrated e-learning and inquiry and there was little interest in doing so. Rather, e-learning and inquiry were interrelated in a pragmatic manner. Inquiry learning tended to take precedence over e-learning, the latter being used as part of the process to a greater or lesser degree.

Further impressions & some personal thoughts on them

The place of e-learning

The investigation focus has prompted me to re-examine my stance on e-learning and its place in the MENPS learning landscape. On reflection, my previous decision making in this area has been influenced by what has been referred to as an 'orthodoxy of optimism' associated with student achievement, coupled with a concern, that without access to 'rich' e-learning experiences I would be failing as the 'learning conscience' of our school to be preparing students for the 21st century. Add to the mix a dose of parent expectation and you have the big picture! So where does e-learning fit in the school learning milieu and how do we maximise its effect? There are a range of views out there!

Robertson (2003) addresses the first part of the question and cautions against accepting the language of the 'known future', criticising it as being 'technopositivist' and serving as a 'sister ideology for corporate globalisation'! She maintains that 'education's highest purpose of getting students to passively adapt to a predetermined future is a poor substitute for persuading students that they can contribute to the creation of better futures'.

Monke (2006) suggests, that schools should back off the 'user and using' emphasis and focus on 'inner human capacities' with a view to balance student's 'machine driven lives'. This perspective is very close to the view espoused by Brown (2005) who is concerned about the 'uncritical adoption of new computer technology in schools' and the associated danger of not attending to the development of *real 'low tech'* needs – physical, emotional and social, as well as cognitive. He makes the point that the computer isn't a 'neutral' learning tool and implies that maybe the key thing to do as school leaders is nurture the awareness in our youngsters best summarised as 'it's not how to use them, but how they use us'! This is definitely a new thought for me.

(Mark Brown's *Telling Tales out of School: The Political Nature of the Digital Landscape* in e-Learning Communities Kwok-Wing Lai (ed), 2005 is a 'must read' as a pre-requisite to evaluating the recently published M.O.E. e-Learning Strategy).

In relation to how a principal manages for optimal impact on learning from I.C.T, Creighton (2003) asserts that it will not be the computer alone that will affect teaching and learning, but rather a change in pedagogical thinking. This position is supported by research that links teacher pedagogical conceptions with the type of e-learning experiences they provide for students. It seems that teachers who have a more learner centred orientation use more open-ended applications and practices (Sillanpaa, 2004).

In a related manner, Mishra et al (2006) suggest that getting the best out of e-learning programmes is a matter of ensuring the intersection of apparently separate areas of teacher content knowledge, teacher pedagogical knowledge and teacher technical knowledge. My view is that we focus on the first two, as developing sustainable change in them presents a formidable enough challenge to school leaders, or at least that's my experience!

Yet another view is summed up by the comment of a pragmatic principal colleague who during the investigation said to me "I don't know why you worry about developing indicators that incorporate e-learning with inquiry. That would be a waste of time. I regard the technology the same as I do chairs and other furniture – teachers use them/it as they see fit. No more, no less!"

This perspective is uncannily close to Moss (2002) who notes that I.C.T. is just a tool and depending on the task at hand it is a matter of choosing the best one for the job. He suggests that with this frame of mind I.C.T is easier to integrate across the curriculum. If this is linked to Brown's (2005) position

on how technologies impact on our lives, then this is the orientation I would like to present to MENPS staff for discussion.

The e-learning 'diet

Did I observe as much and as varied an e-learning diet in schools as I thought? Probably, No. I certainly didn't see as much use of the web as I figured I would.

Maybe this was due to the fact that most of the schools I visited had already adopted the perspective I have just reached, or maybe developmentally had worked themselves away from the position described by Gwen Gawith recently (2006) as 'clickery and flickery'. Essentially she is saying that if there is no valid purpose (related to learning) to use I.C.T. - don't use it.

There were though, some e-learning initiatives I observed that challenged my thinking.

In some instances the 'operational learning' associated with an application(s) did dominate the context. It was more about the presentation than the content of the presentation, a type of multimedia 'project'.

In terms of the selection of applications, Robertson (2003) certainly poses a challenge. She notes 'I cannot conceive of a single software application that could be mastered today by 15 year olds that would be of value 10 years from now, although I can think of other skills and knowledge that will endure'. This would have a bearing on the development of indicators that assigned various applications to year levels and coupled with the thoughts of the previous section, leads me to suggest that the indicator idea is definitely 'dead in the water'!

There were also instances where a technology used by a teacher negated espoused student centredness and instead promoted a didactic classroom demeanour – beware, the data projector and the interactive whiteboard (IWB)! Smith (2005) raises questions about the interactivity claims of IWB and suggests that proponents monitor the use of the IWB against the type of pedagogy teachers use, pointing out that verbal and physical participation in IWB sessions does not ensure the *quality* of that participation. She concludes by suggesting that there is no research evidence linking increased pupil attainment with the use of IWBs for teaching and learning and that the key is not what you use, but how you use it! - A recurring theme.

There were other links to pedagogy associated with the internet. In some cases where, on the direction of a teacher, students accessed a relevant web site, they experienced difficulty in getting below the surface of the information. Is this the critical point? That it is not enough to just facilitate access to information, that teachers need to plan for learning conversations associated with the use of e-learning and inquiry and adopt a position where they actually 'drive' the learning?

Of course, none of this suggests that e-learning doesn't have a place and that school initiatives should be shrouded in pessimism. In all cases students were very enthusiastic about having access to technology. However, I have thought a lot about Stoll's (1999) concern that computer can send the wrong message by making learning appear colourful and fun when it actually requires hard work and discipline. I guess that the key thing here is just *what is being learned*. Given the low level intellectual demand of some topics observed, I have concern that the focus is on the affective to the discredit of the cognitive learning dimension.

The balance between knowledge and process

There may be a lurking issue in the NZ primary and intermediate parts of the education sector relating to the balance between knowledge and process in learning programmes. I would respectfully suggest that was the case in some of the teaching and learning programmes that I observed, but I suspect that it could be wider.

Earlier, the point was made that most schools visited were delivering integrated, long duration topics. The rationale forwarded for this approach in all cases related to curriculum balance and 'depth' of learning.

There has been long standing concern about the place of subject/discipline knowledge when teachers have planned in an integrated manner. It did concern me when some of the teachers visited could not readily describe what knowledge students had learned as a result of a 10 week topic! More often than not, the response I received was process related - that student's 'learning to learn' skills were being developed.

Gilbert (2005) makes a resonating point when she suggests that teachers should help students see knowledge as 'a series of connected systems rather than a series of separate fields', but then points out that it is the responsibility of a future-focused education system to develop skills in learning, thinking, investigating and so on, noting that these aspects do not 'happen in a vacuum'. She goes on to say that they require a context – and implies that the contexts she has in mind have a strong knowledge base, albeit of a 'new' kind where knowledge is perceived as a verb rather than a noun.

In relation to this matter, Smythe (2001) suggests that 'we are what we know' and that in every day life 'we don't undertake research projects before making decisions'. He notes that it is not a matter of knowledge or process saying 'Understandings cannot be developed without process, therefore (process) is not being overlooked, just being assigned to its proper place'. Gawith (2006) makes the same point, taking issue with a M.O.E. spokesperson who must have stated that it doesn't matter what they (students) learn, as long as they know how to learn! She worries about school learning programmes best described as 'bitsastuff'!

Clearly, she and others are strong proponents of the view – If it is not worth learning, then don't spend time on it. The trouble is, given the curriculum

issues of the last 15 years and other matters to attend to, contemplating what is worth learning and assigning progressions in knowledge is not a favourite principal led pastime, especially when the guidelines are fuzzy, or don't exist. Learning should be authentic, coherent, deep, relevant and interesting – but according to whom? Gilbert (2005) has already begun the debate. She is clear that knowledge *will* matter, and that it *will* matter what people learn but that the *why* will be different. Given the new draft curriculum's school based development platform, this issue is begging for rigorous debate at a national level.

The balance of surface and deep levels of classroom thinking

Then there is the critical pedagogical issue of improving the levels of thinking in classrooms – a very important thing to do if we espouse plans to implement the Key Competencies. There seems to be a widely held assumption that inquiry based programmes will *somehow* offset the often reported superficial levels of classroom thinking. But will they?

How do we get teachers to focus on this in a more systematic manner? Do we reintroduce Bloom's Taxonomy, now exactly 50 years old (although some tell me it's a new idea)? Bereiter (1998) wouldn't agree that the taxonomy has merit for anyone these days! He and others assert that Bloom's 'filing cabinet' model of knowledge is not suitable for the preponderant future focused conception of knowledge. Should we then use the seven different levels of knowledge he espouses or the SOLO taxonomy, the basis of asTTle? I think we need some help here.

(As an aside, If Bloom, even modified, is outdated, why are we teaching the taxonomy to our students as part of the Pohl thinking tools package at Year 5?)

Another matter worthy of a question (or two), is the seemingly ingrained belief that a longer duration topic allows students to gain 'deeper' understanding. Depending on what it is to be learned, I have issues with this assumption, having seen the learning impetus and knowledge resulting from carefully selected shorter term topics. I strongly question whether 'duration leads to depth'! Is the matter partly a case of being learn*er* centred at the expense of being learn*ing* centred?

Approaches to Inquiry Learning

It intrigues me that a significant number of teachers I spoke with regarded inquiry as a 'new' phenomenon, and that many (including some of our staff) held the notion that that there was one approach – a kind of tried and true recipe. Whatever, the result is that inquiry based learning is being repackaged, linked to the development of the Key Competencies and marketed up and down the country with gusto.

Given that you accept a continuum for inquiry comprised of more teacher initiated and student initiated points of origin, most of the inquiry programmes

that I saw documented and implemented were of the teacher led, guided type. Many of the questions for investigation were developed, no doubt as a result of interactions with students, but mainly by teachers. Is there a danger here that some students might be able to answer the questions before some of these long term topics begin? I spoke with some who could.

Generally, the learning experiences followed the sequence described earlier. I strongly believe that some inquiry is better than none, however, the pervasive skewing of the delivery to the guided end of the continuum does raise a few questions.

Initially, I wonder whether this approach suits all topics and suggest that schools might think about being more flexible and consider which inquiry approach might best suit the context – In other words, 'vary the diet'. While the guided approach (described earlier) is most appropriate for contexts that require information gathering and solving problems (some at least), it doesn't necessarily challenge attitudes and values.

Nor does it, at least in my observations, necessarily develop the level of cognitive dissonance that I associate with genuine conceptual development. I did encounter a teacher perception that students can't ask questions unless they have been the recipients of 'knowledge dumps' or questioning skill packages. Question asking is at the heart of the inquiry process. However, is the 'key' here to place students in situations where they *want* to ask about things, (especially relating to making sense of the many 'worlds' they experience particularly, the scientific world) rather than 'teach' them how to ask questions in low level contexts.

Given that inquiry and science tend to be inseparable, it struck me as interesting that in all of the time spent in schools I saw only two science focused sessions. 'Mr. Josh' whom I met in a Year 2 class in Auckland, stays in my mind as a great example to link both of my last points – the value of selecting science based concepts for inquiry *and* children's innate ability to ask questions if they are interested or need to fill 'gaps' in their thinking.

'Mr. Josh' was an elected class expert on the melting of ice and was part of a panel. Members of the panel were asked to give me their impressions of the ice melting process making use of the IWB behind them (for reference). When it came to 'Mr. Josh', he stood-up, introduced himself and announced that he did not want to talk about the ice melting because he thought he knew why it did. But he did want to know where the water had gone during lunch time, noting that 'It could not have gone into the concrete – So where did it go?'

Teaching Thinking

I remain unconvinced that the plethora of 'thinking' packages are doing much to enhance the level of classroom discourse and thinking. While some schools have been on this pathway for some time, there is an avalanche of attention being given to them as a result of the promulgation of the Key

Competencies- especially the *Thinking* Competency with its associated metacognitive emphasis.

At times, I encountered the perception that this particular Key Competency can be and maybe is best, developed by inserting lessons on open and closed questions, selecting a 'thinking hat' or using a 'key' prior to or as part of programmes of inquiry. In other words, teaching thinking as almost a stand alone subject , like reading. The Michael Pohl 'smorgasbord' package seemed to be extremely popular.

But, if it is this easy, why haven't we realised before and just taught the thinking skills like the Essential Word Lists? Is our current batch of students going to be better thinkers than you and me who aren't able to dial-up a Creative Problem Solving (CPS) process at the drop of a hat? (excuse the pun!). The notion makes a kind of intuitive sense, but where is the research to support the claim that this approach is developing future problem solvers and metacognition? I am with Gilbert (2005), who suggests that the current emphasis 'puts the cart before the horse'!

While room environments were attractive, student centred and celebrated the recorded outcomes of many thinking activities, it was of interest to me that I didn't observe use of diagrams on their own or with labels/comments explaining student views. There was no evidence of using models, the development of analogies and metaphors or dismantling things to explain or investigate concepts or solve problems. Perhaps this was due to the prevalence of environmentally based topics I encountered. I did encounter two examples of students building models to preset patterns as part of technology challenge with an associated very high level of student engagement.

For my part, I have the view at this point that the 'thinking' programmes do give students a valuable bank of ways to process information, but suspect that the key to the development of genuine ability to think is much more than just a package. It is undoubtedly a complex *teacher* matter, and possibly includes aspects such as: teacher knowledge; their perspective on teaching and learning; whether they are good learners, and good selectors of contexts that interest and challenge children's views and inspire the them to pursue their own lines of inquiry. I believe that there is a strong link between this issue and the knowledge/process issue discussed earlier. Thinking doesn't necessarily result from being able to use a Mind Map Consequence Wheel or the like. However, given the fervour with which this issue is defended by its protagonists, I confess that I feel *really* out of step on this one!

Sabbatical Outcomes

The sabbatical period ended with me having decided that the development of indicators as described earlier was *not* the best option in terms of MENPS school development. In order to achieve our aim of developing inquiry based programmes across the day which included e-learning and which contained

what I call ‘cognitive grunt’ – my term for ‘higher order thinking’ – I plan to stay with a focus on pedagogy. However, I still believe, with the above provisos, that e-learning experiences play an important part as part of inquiry based programmes, but not as part of the *Foundation* area of our school’s curriculum.

The experience certainly influenced the professional development sessions I led at MENPS during Term 3 and the two forum presentations related to the Key Competencies that I have made with a MENPS colleague in Wellington and Hastings.

We billed the inquiry section of the MENPS sessions as *‘Inquiry Learning – A State of Mind’* reflecting the belief that the real changes in pedagogy need to occur in teacher’s minds initially in order to become genuinely and flexibly embedded in practice.

The sessions highlighted the ‘vary the (inquiry) diet’ message and we used the ‘Feeling for’ and ‘Interactive Teaching’ approaches as examples of more student initiated approaches to inquiry learning, as opposed to the more guided type evident in schools during the sabbatical.

(In the event of the reader being too young to have heard about either of them, the ‘Feeling for Approach’ used in primary and intermediate social studies was developed by Kelvin Smythe in the 80’s. Other than the great range of learning activities contained in the approach that can be used in other areas as well, this method certainly enabled teachers and students to challenge their own and others egocentricity and ethnocentricity. The ‘Interactive Teaching’ approach was an outcome of the *Learning in Science Projects (University of Waikato)*, also in the 80’s and is based around children’s questions).

Three MENPS key messages central to the use of the range of inquiry approaches were that:

- teachers need to be sure *why* they select the topics they do and about their *knowledge* of the key ideas they are aiming to develop in them;
- teachers need to encourage individual student lines of inquiry in a topic, but not lose sight of the key ideas, and
- teachers need to anchor teaching and learning programmes to a learning philosophy i.e. it isn’t about just teacher ‘facilitation’ and providing interesting activities, it’s about being a very interactive ‘sage’ and assisting students to *co-construct* knowledge.

Also central to the sessions was the notion of developing inquiry across the school day and many ideas were shared to assist teachers apply an inquiry framework in mathematics and English.

To assist teachers to select ‘rich’ topics we have developed an ‘in-house’ set of criteria which include -

That the topic/theme/experience/event will:

- *Progress the development of the key competencies (our 'touchstones')*
- *Be interesting and challenging for students (and teachers)*
- *Contain at least one 'big idea' which is significant in the process of understanding our world now and in the future*
- *Be a meaningful context for students e.g. is current, topical or where learning can be applied*
- *Cover the achievement objectives contained in the draft curriculum*
- *Be well resourced*
- *Be delivered using an inquiry approach*
- *Be suitable to meaningfully integrate e-learning*

(You might be interested to know that the one item in the above list that has produced the most debate here at MENPS is that which relates to the 'big ideas'. In the long term the teacher knowledge factor might loom much larger in the successful implementation of the draft curriculum than many think!).

Concluding Comment

In terms of development here at MENPS, I hope that we keep the focus where it is now – that being on developing changes in pedagogy, consistent with the development of our 'touchstones', and considering the place of e-learning in those changes.

What then of the need to provide teachers a meaningful framework for them to develop learning programmes as was the sabbatical intention?

While it has shades of Bloom and I would be happier if the 'Mind Tools' column of the following table came through as suggestions rather than a definitive list, my opinion is that the Mind Tools Framework conveyed in a recent Gawith article entitled *'The Vision Vacuum'* is a valuable resource.

The chart (below) blends the type of thinking which is consistent with Gilbert's (2005) knowledge production stance, with ways to assist it including e-learning. I plan to introduce it, along with the key points made in this report, to staff this term for their reaction concerning its usefulness in the process of generating learning opportunities.

MIND TOOLS CHART

Mind Skills	*Competency*	*Mind Tools*	*Suitable content*
Comprehension	Can read/ view/ listen to **understand** material and **identify/ recall/ select** main facts/ points/ ideas/concepts	**Flexible reading / listening/viewing**: - scan & skim/ surfing - deep reading/ listening/ viewing - summarise using maps/ mind-	***Selected from the curriculum to suit the school's vision of what children should be learning and the tools we want them to use to build the***

		maps/ diagrams/ bullet points.	***competencies.***
Analysis	Can **pull info apart** using the 'core' cognitive actions: - compare/contrast - sort (classify, categorise) - relate & match - list - sequence - work out cause & effect, problem > solution.	Use diagrams to show reasoning - Venn diagrams, Tables, Tree maps/ Lineargrams, Mindmaps, Cycles, Timelines, Flow diagrams Spidergrams, Fish, Webs, Butterflies, etc	
Summary and Synthesis	Can **pull** similar **info together** from different sources/ media. Can: - summarise key facts/ points/ ideas/ concepts - paraphrase - simplify - diagram	Use Venn and fan diagrams, maps, mindmaps, cartoons, diagrams, etc. Use the W prompts (Who What Why Where When How) to select.	
Interpretation	Shows deeper understanding. Can: - make inferences/ infer what is meant - make claims, predictions, propositions, hypotheses - support/ defend these predictions, claims, etc, with evidence, facts. - elaborate, extrapolate - explain, discuss - generalise - draw conclusions - make/ support judgements - see different viewpoints/ perspectives - see inter-connectedness of things	Deeper mental processing – diagrams such as cause/ effect, eg, help to extend reasoning. Use de Bono's 6 hats elicit multiple perspectives/ viewpoints. Use Hyerle's tools for, eg, analogies. Software eg Inspi-ration™/ Kids-piration™	
Application	Can **use info** for various purposes and in different situations, for example to: - plan - solve problems - make decisions - follow/ apply multi-step instructions - apply info to other	Any graphic or diagram that help learners to visualise mental processes. Pro/con, plus/ minus, strength/ weakness, advantages/ disadvantages, challenges/ dangers	

	contexts/ audiences/ needs - analyse arguments - evaluate info – balance, authority, accuracy, bias etc - Differentiate between fact & opinion; informed & uninformed opinion. develop and apply criteria	lists help evaluating problem solving and decision making alternatives. Use 'what if' thinking to examine possibilities and outcomes.	
Communication	Can use traditional and e-media and software and speech, writing, graphics to: - communicate key facts/ messages/ ideas opinions/ concisely, coherently using subject terms accurately - communicate/ request info in a style appropriate to variety of audiences/ purposes.	Translated into: letters, essays, emails, talks, Powerpoint presentations, visitor briefings, reports (research/ inquiry, visits), multimedia presentations, websites, debates, brochures, posters, lessons for younger students, etc.	

This chart was generated as part of work concurrently being done for NEMP and funded by them. Through Gwen Gawith, it is shared with their permission.

Absolute Last Word

I have always had the view that it doesn't matter what the context and with whom, when educators get together one of them at least will come away better informed or with a new useful idea. That is certainly the case in this regard. Thanks again!

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