

## **Sabbatical Report**

### **Thinking Competencies within an Integrated Curriculum**

**Brian Bayly – Macleans Primary School**

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- \* Ravi Grewell – Bialik College – Melbourne
- \* Jill Howells – Bruswick East Primary School – Melbourne
- \* Michael Miller – Rowellyn Park Primary School – Melbourne
- \* Peta Lindstrum – Our Lady Star of the Sea School - Howick

#### **Purpose**

To observe and explore the development of children's thinking competencies within authentic learning experiences.

#### **Background Information**

Several years ago we introduced de Bono's 6 Thinking Hats into our school as an initial step to provide explicit opportunities to develop children's thinking skills. Subsequently we introduced David Hyerle's Mind Maps. Many teachers have been incorporating Blooms taxonomy into their programme planning and questioning approaches. Teachers use a range of graphic organizers and brainstorming tools including Inspiration.

Developing children's questioning skills has been an on-going focus as we have used the Action Learning model for Inquiry Learning for several years. Questioning, identified as an area for improvement through our analysis of achievement data based on Inquiry learning has been a focus of professional development and classroom practice during 2008 and 2009, The work of Trevor Bond, Clinton Golding and others informed this work.

The development of children's critical and analytical thinking skills was a focus of professional development and classroom practice in 2009 as staff read, discussed and

trailed the approaches for developing children's reading comprehension as outlined by Alison Davis in Teaching Reading Comprehension (2007)

Staff are currently engaged in refining approaches to goal setting, setting and co-constructing learning intentions and success criteria with children and allowing student voice to guide and inform learning.

I have attended several conferences, both in New Zealand and Australia over recent years, which have informed and shaped the development of my own understanding of approaches to thinking and brain compatible learning.

With the introduction of the revised New Zealand Curriculum 2008, as a school we have been engaged in exploring and implementing the Key Competencies and redesigning our school curriculum. Part of this process involved 'unpacking' the Thinking Competency as described in the NZ Curriculum and looking at how we are providing for the student's development of this competency.

My intention during this sabbatical was to visit a range of schools using varied approaches and undertake some professional reading with a view to reviewing our current implementation model for 'thinking', identify areas for development and draft a strategy for working with staff to clarify our teaching pedagogy with regards to providing for the development of our pupil's competency in thinking.

### **Methodology**

Because the sabbatical provided the opportunity to travel beyond Auckland I decided to visit a selection of schools in Australia. After consultation with colleagues I identified four schools in Melbourne each of which used a different approach to the teaching of thinking. This was my opportunity to explore variety rather than just visit schools that matched our own approach.

It was a pleasure to visit the following schools and have colleagues share with me their practice;

- Rowellyn Park Primary, Carrum Downs
- Bialik College, East Hawthorn
- Brunswick East Primary, Brunswick East,
- Apollo Parkways Primary, Greensborough.

I also visited Our Lady Star of the Sea in Howick to look at the implementation of the Solo Taxonomy.

At each school I spoke with the teacher who was responsible for developing thinking programmes. Prior to my visit I had provided each school with a series of questions that were guiding my inquiry. These proved to be a very helpful tool, assisting in me gaining consistent information between schools as well as providing a template into which to record my observations upon my return to my accommodation each day. Just visiting one school each day was also a wise decision as I was able to record and reflect upon my

observations while they were still fresh in my memory, as well as keeping stress levels related to navigating a strange city, to a minimum!

As an aside I am very appreciative of the detail and links most of these schools provided on their school website, which gave me good insight, prior to my visit, into their approach to learning, and thinking in particular.

Subsequent to these visits I have undertaken reading some of Ron Ritchhart and David Perkins' research, explored Visible Thinking Routines and Habits of the Mind and attended a Karen Boyes seminar entitled, 'Developing 21<sup>st</sup> Century Thinkers and Learners'.

### **Findings – School Visits**

To minimise the chances of misrepresenting each school's approach to the teaching of thinking in this forum I have been deliberately brief in my summary of the approaches they are using.

#### **Rowellyn Park Primary**

This is a Prep to Grade 6 primary school in a recently developed housing area south of Melbourne City. Rowellyn Park's staff use aspects of 'brain based' teaching as promoted by Mike Scadden. Scadden promotes an approach to teaching and learning that takes account of how the brain is structured, how it functions and learns and how teachers can best prepare optimal learning 'states' for students to learn in.

Brain Gym, Thinking Tools as provided by the Victorian Department of Education, DeBono's Thinking Hats, Gardener's Intelligences and Blooms Taxonomy are used throughout the curriculum. As with all Victorian Schools, the Thinking Process indicators, as outlined in the Victorian Essential Learning Standards (VELS) guide and inform assessment and reporting at Rowellyn Park.

#### **Bialik College**

Bialik College is a private co-educational Jewish school catering for students from early childhood until the end of secondary school.

The Early Childhood Centre, catering for children from 3 years until the end of Grade 1, provides a learning environment and programme based on the Reggio Emilia philosophy. Developed in northern Italy it stems from the premise that for children to be active in the world they need to be pro-active in making decisions. Learning institutions (schools) therefore need to be a place where children develop their thinking, not just places where they are doing things and being dependent on the teacher. The teacher's role is to scaffold the children's learning, focus on their strengths and build on what they can do. There is a strong emphasis on the Arts.

The primary and secondary departments are involved in a Cultures of Thinking project, led by Harvard University as part of Project Zero. Teachers use a range of 'thinking routines' within an inquiry learning approach as they work collaboratively to develop a culture of thinking within the school. Teachers participate in professional learning groups sharing and exploring; the evidence of students thinking and the implications for future

learning as a consequence of the thinking routines being used and the culture of thinking being developed in the school.

#### Brunswick East Primary School

Brunswick East Primary School, a Prep to Grade 6 primary, in close proximity to the city teaches Philosophy for Children. Each class has a one-hour philosophy lesson each week. Philosophical questions arising from a shared book, piece of literature or the current inquiry-learning topic, are explored following group discussion protocols. While philosophy is ‘taught’ as a separate subject the discussion may span several lessons, will culminate in a presentation or conclusion and will often relate to the current inquiry-learning topic.

#### Apollo Parkways Primary

Apollo Parkways Primary School is a Prep - Grade 6 primary school in the more affluent northern suburbs of Melbourne.

Through their involvement in the Navigator Schools Project, staff at Apollo Parkways have developed a rich inquiry-based approach to learning that has a strong I.C.T. focus which is underpinned by the purposeful and integrated use of a range of thinking tools; 6 Thinking Hats, Thinkers Keys, Multiple Intelligences, Blooms Taxonomy and Habits of the Mind. Children are taught these skills progressively as they move through the grades. Each year begins with a review of the relevant thinking strategies for the grade in a unit called ‘Linking to Thinking.’

#### Our Lady Star of the Sea

Staff at Our lady Star of the Sea are in their second year of implementing the Solo Taxonomy as a framework for concept planning of learning programmes. Staff have been involved in extensive professional development with the providers of this programme leading to an in-depth and comprehensive approach to teaching and learning in line with the New Zealand Curriculum. Students and staff have a clear understanding of learning progressions and next steps for learning.

Thinking processes, including brainstorming, mapping tools, and questioning; analytical, creative and reflective, are embedded in the learning process. Solo presents as a pedagogical rather than toolbox approach learning.

### **Findings – Synthesis**

#### A variety of approaches work

Each school I visited was very happy with the impact their approach to thinking was having on learning and the development of children’s thinking in particular. They talked about how engaged the children were in their learning, how much more purposeful and authentic learning had become, how children demonstrated quite sophisticated levels of insight and understanding in the questions they asked, the contributions they made to discussions and problem solving and the quality of work they produced.

The work of Ritchhart and Perkins would appear to support the validity of such claims. When discussing the success of thinking programmes they propose that,

‘ An intervention appears successful to the extent that it shows some magnitude of impact on learners’ thinking, with effects that persist well beyond the period of instruction, and with transfer to other contexts and occasions.’ (1)

Their analysis of the research lead them to the conclusion that,

‘the good news is that the history of efforts to teach thinking provides proofs for achieving all three criteria,(magnitude, persistence, transfer), at least to some extent.’ (2)

The programmes at Bialik College had been reviewed as part of the research project. This research into student’s conceptual development found that, over the course of a single school year the average Cultures of Thinking classroom students’ growth and maturity, with respect to understanding thinking processes that they themselves use and control, increased by twice the normal rate one might expect by virtue of maturity alone. (3)

### Professional Reading

#### Ron Ritchhart and David Perkins

One of the benefits of this sabbatical has been the opportunity to read some of the research literature around the teaching of thinking. At Bialik College I was introduced to the work of Ron Ritchhart and David Perkins, who are key figures in Project Zero.

The following article I found particularly informative with regard to the insight it gave to the teaching of thinking. ‘Learning to Think: The Challenges of Teaching Thinking’, in the Cambridge Handbook of Thinking and Learning, Nov 2004.

Ron Ritchhart and David Perkins explore five important challenges in the efforts to develop thinking.

- a. The challenge of attaining results. Can thinking be taught with some reasonable signs of success?
- b. The challenge of defining good thinking. What is good thinking?
- c. The challenge of attending to thinking dispositions . The dispositional side of thinking, developing attitudes and intellectual character in addition to skills and processes..
- d. The challenge of transfer. The transfer of learning within the teaching of thinking.
- e. The challenge of creating cultures of thinking. The social context and environment in which thinking is promoted.(4)

Ritchhart and Perkins reach the following helpful conclusions.

- a. It is possible to produce impacts with substantial magnitude, persistence and transfer from a variety of programmes.
- b. While programmes spanned a variety of philosophical and methodological practices they shared common characteristics of; increasing the demand for thinking, and developing thinking processes and paying attention to metacognitive self-regulation, which appear to be the key elements in teaching thinking.
- c. Thinking programmes with quite different theories seem to have achieved substantial success. Increased explicit involvement with thinking and systematic attention to managing one’s thinking may be the most critical conditions in determining their effectiveness.

- d. The effective teaching of thinking is more than just the development of ability, demanding the development of awareness and inclination as well.
- e. Some degree of transfer is possible. Successful transfer must be designed deliberately into interventions by; highlighting key interventions that need attention, allowing for reflection on underlying principles and providing opportunities for practice across multiple contexts.
- f. Efforts to teach thinking cannot be removed from their social context. The social context provides important avenues for the development of supporting inclinations towards thinking, learning from more accomplished peers, focussing attention and access to the resources and practices of the group.
- g. A set of cultural forces directs and shapes students learning experiences both directly and indirectly. These cultural forces convey to student how much and what kinds of thinking are valued, what methodologies the group uses to go about thinking and what expectations there are in regard to thinking. The thinking of individuals and groups is made visible though these forces. (5)

### Cultures of Thinking

The approach being used at Bialik College resonated with me as I related the Cultures of Thinking strategies outlined to; the practice in my own school and those I had visited, the effective pedagogy described in the New Zealand Curriculum and the approaches outlined by Clinton Golding (2005)

I have since read 'Intelligent Character: What It Is, Why It Matters and How To Get It', by Ron Ritchhart (2002)

Ritchhart explains how the teaching of thinking has moved from, 'programmed strategy instruction aimed at students as individuals to broad-based approaches aimed at building classroom cultures supportive of active social construction of knowledge among groups' (6)

He says that the culture of thinking demands attention because;

'...the supporting structures of culture are needed to sustain gains and actualise intelligent behaviour over time, as opposed to merely building short-term capacity...it is through the culture of the classroom that strategies and practices take on meaning and become connected to the work of learning.'

'...culture helps to shape what we attend to, care about and focus our energies upon ... culture is integrally linked to the dispositional side of thinking and to the cultivation of inclination and sensitivity.'

'...researchers and programme developers increasingly have recognised that thinking programmes are not merely implemented but are enacted, developed, and sustained in a social context.' (7)

Ritchhart identifies eight cultural forces, aspects of a classroom responsible for giving it its unique flavour and feel; that are at working every classroom.

- The expectations for students' thinking and learning that the teacher conveys.
- The routines and structures that guide the life of the classroom.
- The language that the teacher and students use and the conversations they engage in.
- The opportunities, work, or activities the teacher creates for students.
- How the teacher acts and what the teacher models for the students.
- The attitudes that the teacher and students convey.
- The interactions and relationships between the teacher and the students as well as among the students themselves.
- The physical environment and the artefacts present in the room itself. (8)

This has translated into the visible thinking approach used a Bialik characterised by the following principles;

- Learning is a consequence of thinking. Students understanding and memory of content increases when they think through and with, the concepts and information they are studying. Team members share and build upon one another's knowledge
- Good thinking is not only a matter of skills, but also a matter of dispositions. Good thinking is aided by characteristics of open-mindedness, curiosity, attention to evidence, scepticism and imaginativeness.
- The development of thinking is a social endeavour. We learn from those around us and our engagement with them.
- Fostering thinking requires making thinking visible. Externalising their thoughts through speaking, writing, drawing, acting, recording on charts etc makes thinking visible.
- Classroom culture sets the tone for learning and shapes what is learned. As outlined above, depending on their form, these forces can support or undermine the rhythm of thoughtful learning.
- Schools must be cultures of thinking for teachers. Professional learning communities need to value, create and preserve time for teachers to discuss teaching and learning, grounded in observation of student work. (9)

#### New Zealand Curriculum -Effective Pedagogy

The New Zealand Curriculum informs us that students learn best when teachers;

- create a supportive learning environment
- encourage reflective thought and action
- enhance the relevance of new learning
- facilitate shared learning
- make connections to prior learning and experience
- provide sufficient opportunities to learn
- inquire into the teaching-learning relationship. (10)

### New Zealand Curriculum – Thinking Competency

Competency in thinking is described in the New Zealand Curriculum as follows; 'Thinking is about using creative, critical, and metacognitive processes to make sense of information, experiences, and ideas. These processes can be applied to purposes such as developing understanding, making decisions, shaping actions, or construction knowledge. Intellectual curiosity is at the heart of this competency.

Students who are competent thinkers and problem solvers actively seek, use and create knowledge. They reflect on their own learning, draw on personal knowledge and intuitions, ask questions, and challenge the basis of assumptions and perceptions. (11)

Thinking strategies are embedded in each of the descriptions of the seven key learning areas. For example – Social Sciences,

'Using a social inquiry approach, students;

- ask questions, gather information and background ideas, and examine relevant issues.
- explore and analyse people's values and perspectives;
- consider ways in which people make decisions and participate in social action;
- reflect on and evaluate the understandings they have developed and the responses that may be required. (12)

Similar thinking language is embedded in the descriptions of each of the other key learning areas.

### Clinton Golding

There are many parallels between the approach described in Cultures of Thinking and those recommended by Golding in, 'Developing a Thinking Classroom – A Workbook for Professional Learning Teams.' (2005)

Dimensions of thinking, a safe, open and supportive environment, respect for others, the social dimension of thinking, thinking behaviours, classrooms as communities of inquiry, rich concepts and thought-encouraging questions, an open attitude and reflection are all attributes of a thinking classroom.

Golding's comment that, 'Whoever is doing the work is doing the thinking'(13) and Ritchhart's, 'the true promise of the teaching of thinking will not be realized until learning to think and thinking to learn merge seamlessly'(14), provide very pertinent points of reference when designing a school's approach to the teaching of thinking.

### Habits of the Mind

Having looked more closely at the Habits of Mind programme (Costa and Kallick) and correlating these with the attributes of the Macleans Learner it would appear that Habits of the Mind could be a useful addition to our school's 'toolkit.' Interestingly resources available to support teachers implementing this programme effectively incorporate Hylere's Maps and Blooms taxonomy, both currently used in our school to support learning.

### Thinking Models

Lester Flockton, (2009) in his guidelines for implementing the New Zealand Curriculum proposes a three-strand 'model' to express the various types of thinking encapsulated in the NZ Curriculum. He speaks of all thinking basically falling into three broad groups with obvious overlap between the groups; critical and analytical thinking, creative thinking and reflective thinking.

Pohl (2007) and Hook (2006) also categorize thinking into three broad groups; critical, creative and caring.

The simplicity and clarity of these models give them great appeal, particularly as a framework for planning and implementing quality learning programmes in line with the New Zealand Curriculum.

### Implications

1. Continue to work at developing teacher's pedagogical knowledge and skills so that the 'teaching' of thinking is an integral part of their classroom practice and we foster and enhance a culture of thinking within the school.
2. Explore Ron Ritchhart's eight cultural forces with staff to heighten awareness of their presence in and impact on the classroom. Using examples from his book – Intelligent Character – reflect on current practice and identify areas to enhance. Identify areas for further professional dialogue, modelling and trial.
3. Review the 3-strand model of thinking proposed by Lester Flockton - critical and analytical, creative and reflective. Define the attributes of good thinking. Identify the cultural practices and routines currently in practice and those we need to add to give breadth and depth of coverage to our thinking pedagogy. Trial the 'core' routines from Visible Thinking in the process and others suggested by the staff.
4. Explore more fully Habits of the Mind, giving consideration to the thinking and Macleans Learner dispositions they support, enhance and develop. Evaluate with staff the merits of incorporating these into our teaching pedagogy.
5. Revisit questioning, both skills and strategies used by and with children and the types of questions/learning activities provided for learning. Develop the children's ability to participate in thoughtful discussions using Golding's (2009) discussion stems and Visible Thinking routines (online). Encourage the inclusion in class programmes of opportunities to 'wonder', particularly in responding to texts and developing lines of inquiry. Visible Thinkers routines may be useful here. Encourage staff to use Blooms revised taxonomy to help frame questions and learning activities. Work to ensure learning opportunities give children something to think about and the time and space to actually do the thinking in a supportive and reflective atmosphere.

6. Over a period of time identify with staff the key routines/tools that are going to be used school-wide to support our teaching pedagogy and incorporate these in our school-wide Information Processing Continuum.
7. Review our Inquiry model particularly in relation to ‘big questions’, the depth and breadth of learning undertaken during unit studies and the level of involvement the children have in determining the scope and content of their learning. Share the Solo approach with senior staff and determine if this approach is appropriate for our school.
8. Incorporate into staff and/or syndicate meetings the opportunity for staff to engage in professional dialogue, grounded in the observation of student work, regarding the development of student thinking and strategies to enhance this. The Project Zero study group protocols could be a useful guide here.

### **Footnotes**

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