

TH?NKING

EDUCATION

PRESENTS

Developing a Classroom Culture of Thinking



by

Michael Pohl

MICHAEL POHL

3 / 56 Finnis St., North Adelaide, Sth Aust. 5006

☎ / Fax: +61 8 8267 2050

Mobile: +61 417 857 658

Email: mpohl@thinkingeducation.com.au



Developing a Thinking Culture



It is not uncommon to hear teachers in schools talking about developing a *thinking culture* within their learning communities. In developing a thinking culture, it is important to provide teaching and learning activities that will

- empower students with the language, tools and strategies to engage in a wide range of analytical, critical, caring and creative thinking tasks
- provide on-going opportunities for developing, practising and refining the skills of thinking
- provide instruction and practise in ways of managing, organising and recording thinking
- engage students in the higher order thinking skills
- assist in the transfer of skills to everyday life and everyday situations as tools for life-long learning.

An essential element in developing a thinking culture will be the explicit, on-going teaching of thinking skills to all students.

Developing a thinking culture within a school requires teachers to be familiar with a diverse range of thinking strategies so that they may apply the tools of thinking:

- when planning learning activities for students, both within and across curriculum areas
- as an integral part of their classroom teaching practice
- whilst evaluating student learning outcomes.

It will also require teachers to employ strategies in the classroom that will include

- appropriate modelling
- explicitly teaching the tools and strategies
- explaining the significance of each tool in the thinking process
- providing many opportunities for students to interact with:
 - ⇒the newly-introduced tools and strategies
 - ⇒each other
 - ⇒the teacheras they become familiar with the tools, as they practise applying their new knowledge and then as they become confident users of the strategies in many diverse situations
- giving feedback in a variety of forms that encourages the learner to engage in both
 - ⇒risk-taking
 - ⇒reflective and meta-cognitive thinking.

THINKING CLASSROOMS—SOME BACKGROUND INFORMATION

An ever increasing number of schools everywhere are committing to the explicit teaching of thinking skills as a means of equipping all students with important tools that can assist them as life-long learners both within the classroom and beyond.

As a consequence, students will be exposed to a range of models and strategies that develop students' abilities in

- ⇒questioning techniques
- ⇒organising and presenting information
- ⇒analytical thinking
- ⇒critical thinking
- ⇒creative thinking
- ⇒caring thinking

Specifically, students are receiving explicit instruction in the thinking tools such as:

DeBONO's SIX HAT THINKING

EXTENDED BRAINSTORMING

QUESTIONING TECHNIQUES

TONY RYAN's THINKER'S KEYS

GRAPHIC ORGANISERS

BLOOM'S TAXONOMY

CREATIVE PROBLEM SOLVING

Framing these models and strategies into a sequence for explicit teaching at specific year levels or within designated faculty areas ensures that *all* students

- become familiar with *all* approaches to thinking in a systematic fashion, not just those most favoured by particular teachers
- have ongoing opportunities to engage in the higher order thinking skills of analytical, critical and creative thinking.

It is important to note here that the sequencing of thinking skills for classroom instruction does not mean teachers are restricted to using just one structure in their own planning and programming.

Using a wide range of structures in planning, programming and content delivery is simply good teaching practice.

Under this approach, teachers will, however, attend to the explicit skilling of students in thinking in accordance with an agreed scope and sequence.

Four Pillars for Education in the 21st Century

These four pillars of knowledge cannot be anchored solely in one phase in a person's life or in a single place. There is a need to re-think when in people's lives education should be provided, and the fields that such education should cover. The periods and fields should complement each other and be interrelated in such a way that all people can get the most out of their own specific educational environment all through their lives

Learning to know

This type of learning is concerned less with the acquisition of structured knowledge than with the mastery of learning tools. It may be regarded as both a means and an end of human existence. Looking at it as a means, people have to learn to understand the world around them, at least as much as is necessary for them to lead their lives with some dignity, develop their occupational skills and communicate with other people. Regarded as an end, it is underpinned by the pleasure that can be derived from understanding, knowledge and discovery.

Learning to know implies learning how to learn by developing one's concentration, memory skills and ability to think.

Learning to do

How do we adapt education so that it can equip people to do the types of work needed in the future?

From certified skills to personal competence. The key concept now is one of "personal competence". Technological progress inevitably changes the job skills required by the new production processes. Purely physical tasks are being replaced by tasks with a greater intellectual or cerebral content such as the operation, maintenance and monitoring of machines and design and organizational tasks, as the machines themselves become more intelligent. There is a growing trend among employers to evaluate potential employees in terms of their personal competence rather than certified skills which they see as merely demonstrating the ability to perform specific physical tasks.

Qualities such as communication, team and problem-solving skills are assuming greatest importance.

Learning to live together

Can we educate ourselves to avoid conflict or peacefully resolve it?

Discovering other people One of education's tasks is both to teach pupils and students about human diversity and to instil in them an awareness of the similarities and interdependence of all people. From early childhood, the school should seize every opportunity to pursue this two-pronged approach. Some subjects lend themselves to this - human geography in basic education, foreign languages and literature later on.

Towards common goals When people work together on exciting projects which involve them in unaccustomed forms of action, differences and even conflicts between individuals tend to pale and sometimes disappear. A new form of identity is created by these projects which enable people to transcend the routines of their personal lives and attach value to what they have in common as against what divides them.

Learning to be

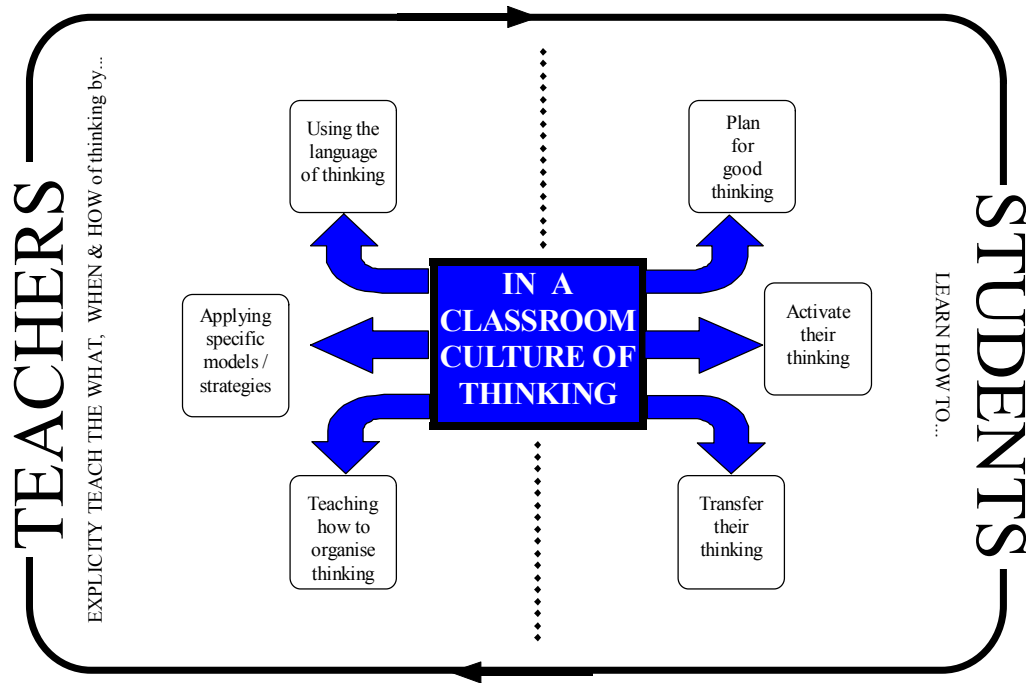
One of the basic assumptions stated in the report *Learning to Be*: the aim of development is the complete fulfilment of the individual as a member of a family and of a community, citizen and producer, inventor of techniques and creative dreamer'.

Both children and young persons should be offered every opportunity for aesthetic, artistic, scientific, cultural and social discovery and experimentation, which will complete the attractive presentation of the achievements of previous generations or their contemporaries in these fields.

The focus here should be on developing the imagination and creativity.

*The Four Pillars of Education, **Learning: The Treasure Within.** Report to UNESCO of the International Commission on Education for the 21st Century*

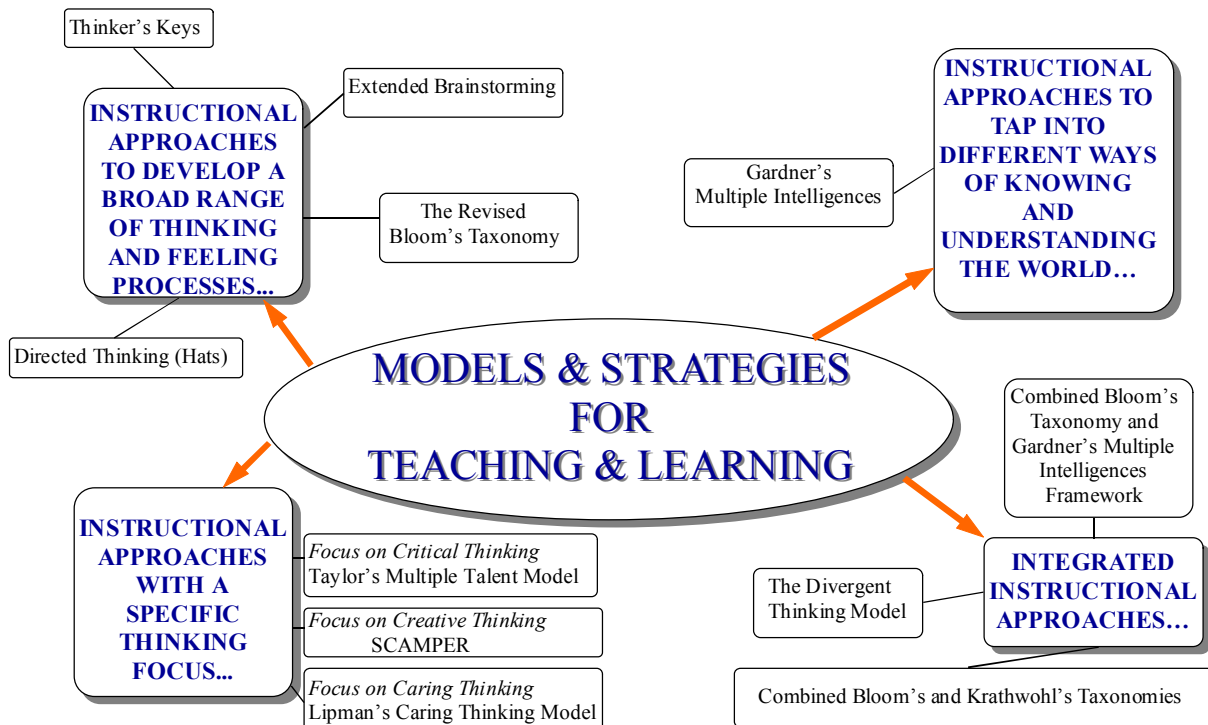
A CLASSROOM CULTURE OF THINKING



TH?NKING

EDUCATION

© M. Pohl



TH?NKING

EDUCATION

© M. Pohl www.thinkingeducation.com.au

KEY COMPETENCIES & THINKING STRATEGIES

Thinking strategies to create

CONFIDENT...

CONNECTED...

ACTIVELY INVOLVED....

...LIFE-LONG LEARNERS.



Competencies:	Supportive Thinking Strategies
Managing Self	Multiple Intelligences Krathwohl's Taxonomy Lipman's Caring Thinking "You Can Do It!" Metacognition
Relating to Others	Social Skills Multiple Intelligences Lipman's Caring Thinking Moral Dilemmas
Participating & Contributing	Social Skills Six Thinking Hats Multiple Intelligences Lipman's Caring Thinking Moral Dilemmas CPS , FPS
Thinking	Analytical- Attribute Listing (SCUMPS) Graphic Organisers / Mind-Mapping Critical – PCD / POOCH / CAMPER Creative – BAR / SCAMPER / Random Input All – Bloom's Taxonomy / Williams Model Divergent Thinking Model / Thinker's Keys Metacognition
Using Language, Symbols & Texts	Inquiry Learning Blooms Taxonomy Divergent Thinking Model Mind-Mapping

LEARNING ENVIRONMENT

Teaching Centred
Content Focused



Learning Centred
Process Driven

Teaching as telling

Students answering questions asked by someone else

Comparing student memories at a point in time

Students *recalling* and *applying* prescribed content

Private thought processes

Writing verbal summaries and explanations

Teaching of methods for content recall

Test and exam results as primary indicators of success particularly for selection purposes

Belief in a *single intelligence* that is fixed and static

Much “*just in case*” learning

Teaching as facilitating

Students *setting their own questions* with the help of matrices, keys, mindmaps, etc.

Recording *growth in thinking* processes over time

Students applying *core thinking processes* as they work with content

Shared experiences and learning

Summarising key points and showing connections on visual / mental maps

Use of *metacognition* for identifying and sharing thinking processes.

Developing *independent* critical, creative & caring thinkers

Belief in *multiple intelligences* that can change with effort and instruction.

More “*just in time*” learning

A K-6 SCOPE AND SEQUENCE

THINKING STRATEGY FOR EXPLICIT TEACHING		AT YEAR LEVEL..		THAT WILL INCLUDE INSTRUCTION IN...
SIX HAT THINKING	➡	K-1	➡	6 Hats - introduced one at a time. simple hat sequences, including <ul style="list-style-type: none">• Evaluation sequence• Caution sequence• Design sequence
EXTENDED BRAINSTORMING	➡	YEAR 2	➡	4 elements of brainstorming, including <ul style="list-style-type: none">• Fluency• Flexibility• Originality• Elaboration
QUESTIONING TECHNIQUES	➡	YEAR 3	➡	a range of question types i.e. <ul style="list-style-type: none">• Open and closed questions• Fat and skinny questions• Student—generated questions
THINKER'S KEYS	➡	YEAR 4	➡	a range of keys to promote different thinking, including Alphabet, Disadvantages, Reverse Key, What if..., BAR , Construction, Picture, Question Key.
BLOOM'S TAXONOMY				a range of higher and lower order questions, including <ul style="list-style-type: none">• Remembering/ Understanding/ Applying• Analysing• Evaluating• Creating
GRAPHIC ORGANISERS	➡	YEAR 5	➡	a range of different ways of organising thinking and information, including Concept mapping, Venn diagrams Fishbone, Simple webbing,
CREATIVE PROBLEM SOLVING	➡	YEAR 6	➡	strategies that integrate many of the strategies previously taught, including Decision making CPS Process Action planning a range of different ways of organising thinking and information, including The matrix, Flow charts, Mind maps Consequence Wheel
GRAPHIC ORGANISERS				

RIVERTON HIGH SCHOOL THINKING SKILLS

Each Faculty to nominate :

- one strategy to teach to students
- another to reinforce the strategy introduced by another faculty.

Note : *Where appropriate, the nominated strategies should also be considered for application in the teacher's own planning and programming.*

BLOOMS TAXONOMY	GRAPHIC ORGANISERS (Mind-mapping, Fishbone diagrams Venn Diagrams, Concept maps that include , Consequence wheel Tree diagrams, Cycle Maps, etc.)	CRITICAL THINKING TOOLS (PCD, POOCH, Question Maps, CAMPER, Compass Rose, Forced Choice Dilemmas, etc.)
MULTIPLE INTELLIGENCES	EXTENDED BRAINSTORMING	SIX HAT THINKING

FACULTY	THINKING STRATEGY TO BE INTRODUCED	THINKING STRATEGY TO BE REINFORCED
Faculty 1 ENGLISH	CRITICAL THINKING TOOLS	SIX HAT THINKING
Faculty 2 SCIENCE	GRAPHIC ORGANISERS	CRITICAL THINKING TOOLS
Faculty 3 MATHS	MULTIPLE INTELLIGENCES	BLOOMS TAXONOMY
Faculty 4 ARTS	SIX HAT THINKING	EXTENDED BRAINSTORMING
Faculty 5 Health / PE	BLOOMS TAXONOMY	GRAPHIC ORGANISERS
Faculty 6 SOCIETY & ENVIRONMENT	EXTENDED BRAINSTORMING	MULTIPLE INTELLIGENCES

SCOPE AND SEQUENCE
Wellington North Cluster of Schools
Year 1 – Year 10

THINKING STRATEGY FOR EXPLICIT TEACHING	AT YEAR LEVEL..	THAT WILL INCLUDE INSTRUCTION IN...
SIX HAT THINKING	YEARS 1 & 2	<p>The Six Hats - introduced one at a time.</p> <p>The full complement of Hats & then Simple Hat Sequences including the:</p> <ul style="list-style-type: none"> • Evaluation sequence • Caution sequence • Design sequence
THINKERS KEYS	YEARS 3 & 4	<p>A selected range of tools from the 20 Thinker's Keys that may include: Alphabet, Disadvantage, Reverse, What if... , BAR, Construction, Picture & Question Keys</p> <p>Revised Keys</p>
TOOLS OF COMPLEX THINKING	YEARS 5 & 6	<p>Critical tools that may include: PCD, POOCH, CAMPER</p> <p>Creative tools that may include: BAR, SCAMPER, Random Input.</p>
BLOOM'S TAXONOMY & MULTIPLE INTELLIGENCES	YEARS 7 & 8	<p>A range of higher and lower order questions, including:</p> <ul style="list-style-type: none"> • Remembering • Understanding • Applying • Analysing • Evaluating • Creating <p>Developing an MI Profile Preferred ways of knowing, and demonstrating understanding Planning MI Activities</p>

THINKING EDUCATION - ORDER FORM

ABN 50 694 866 547

THIS ORDER FORM IS FOR CASH ONLY SALES ON THE DAY.

RECEIPTS WILL ISSUED

Note – All items can be purchased through the website – www.thinkingeducation.com.au.

Description	Unit Price (NZ\$)	Quantity	Total Cost
Teaching Thinking in the Primary Years	\$42.00	<input type="text"/>	\$ <input type="text"/>
Learning to Think / Thinking to Learn	\$42.00	<input type="text"/>	\$ <input type="text"/>
Teaching Complex Thinking	\$42.00	<input type="text"/>	\$ <input type="text"/>
Developing the Thinking Curriculum in your School — A Handbook for Educators.	\$25.00	<input type="text"/>	\$ <input type="text"/>
Quizzles	\$16.95	<input type="text"/>	\$ <input type="text"/>
More Quizzles	\$16.95	<input type="text"/>	\$ <input type="text"/>
Thinker's Keys (Revised) Individual	\$79.00	<input type="text"/>	\$ <input type="text"/>
Thinker's Keys (Revised) Site Licence	\$790.00	<input type="text"/>	\$ <input type="text"/>
Lift Off to Learning	\$79.95	<input type="text"/>	\$ <input type="text"/>
Thinking Resources for Secondary Schools Infusing Thinking Series			
English, Performing & Visual Arts & LOTE	\$42.00	<input type="text"/>	\$ <input type="text"/>
Maths & Science	\$42.00	<input type="text"/>	\$ <input type="text"/>
Social Education	\$42.00	<input type="text"/>	\$ <input type="text"/>
A Resource Book for Schools	\$99.95	<input type="text"/>	\$ <input type="text"/>
Balance Now Due:			\$ <input type="text"/>

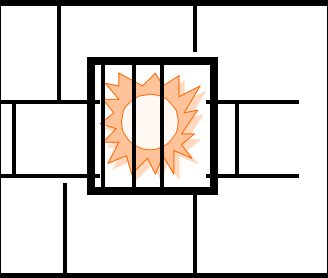
Received from : _____

The sum of NZ\$ _____

Purchase of Thinking Resources above. Date _____

Signed _____

QUIZZLES - PUZZLES WITH A PURPOSE!

<p>M R A W</p>	<p>WASH</p>	<p>C DEN TAL</p>
<p>Father Father Father Father</p>	<p>C L A S S ←</p>	<p>ImprovementImprovement ImprovementImprovement ImprovementImprovement ImprovementImprovement ImprovementImprovement ImprovementImprovement ImprovementImprovement</p>
<p>WINGSWINGSWINGS WINGSWINGSWINGS WINGSWINGSWINGS WINGWAITINGWING WINGSWINGSWINGS WINGSWINGSWINGS WINGSWINGSWINGS WINGSWINGSWINGS</p>		<p>B B ? B B ?</p>



Quizzes - puzzles with a purpose