

## **Sabbatical - Suzanne Downs -2012**

### **The Analysis of Napier Girls' High School Thinking Skills Programme and Possible Future Directions for the Programme.**

Napier Girls' High School is a secondary school which caters for about 900 students from Napier, surrounding districts, New Zealand and the World. One hundred and fifty six students board in the school hostel. The school was built in 1884 and has recently celebrated its 125th Anniversary.

Napier Girls' High School offers many opportunities for all-round individual development. The school has high academic and personal expectations of students. Results in National examinations exceed those of other similar schools year after year and large numbers of students are involved in extra-curricular activities.

Napier Girls' High School is building a teaching and learning community for the future which prepares students to thrive in the 21st Century.

For further information see <http://www.nghs.school.nz>

#### **A. Brief outline of the NGHS Thinking Skills Programme 2006-2011**

NGHS aims to build a teaching and learning community for the future which prepares our students to thrive in the 21<sup>st</sup> Century. Prior to 2006 work had begun on developing thinking skills. A specialist classroom teacher was appointed with a particular focus on thinking skills.

In 2006 a Thinking Skills group was formed. NGHS was part of a group of 5 Hawkes Bay Secondary Schools which made an application for an EHSAS (Extending High Standards Across Schools) application. This group was committed to extending high standards. NGHS's focus was Thinking Skills. The EHSAS project was a 4 year project running from 2007-2011.

#### **What was the reason for 'Thinking Classrooms' to be initiated at Napier Girls' High School?**

Although our students' results exceeded those of similar schools, it was felt that they were not competent thinkers and problem solvers who actively sought, used and created knowledge. They seldom reflected on their own learning, drew on personal knowledge and intuitions, asked questions and challenged the basis of assumptions and perceptions.

If our students could achieve these characteristics, they would be well prepared for life in the 21st Century.

#### **What did we do?**

- Whole Staff Professional Development in cross-curricular groups, timetabled for 50 minutes per week for 20 weeks per year, for 2 years.
- Incorporation of the NGHS Thinking Toolkit at Year 9. The six tools are:
  1. Graphic Organisers
  2. Thinkers Keys
  3. SCAMPER
  4. Questioning
  5. Analogies
  6. Three Level Reading Guides.

- Using Habits of Mind (Arthur Costa and Bena Kallick) at Year 9 (See appendix A) wherever possible. A Habit of Mind is knowing how to behave intelligently when you don't know the answer. There are 16 Habits of Mind. Napier Girls' High School focussed on three:
  1. Questioning and Posing Problems
  2. Thinking flexibly
  3. Applying past knowledge to new situations

Over their time at school the remaining Habits of Mind will be added in.

For more information on Habits of Mind see: <http://www.habits-of-mind.net/>

### What were the challenges?

Challenges	Solutions
To provide professional development to a large teaching staff (60 teachers) on what a 'thinking classroom' looks like. Over 200 Year 9 students who needed to become familiar with the thinking strategies.	<ul style="list-style-type: none"> <li>• 4 staff led different cross-curricular groups on various aspects of the 'thinking classroom'.</li> <li>• The thinking initiative was publicised (through classroom posters, powerpoints at assembly and prefects presentations) and examples of different types of thinking acknowledged.</li> <li>• Each group was regularly updated on the details and progress of other groups through departmental meetings,</li> <li>• Professional Development sessions and informal professional dialogue.</li> </ul>
Upskilling staff on how to use the various tools and Habits of Mind and getting staff to explicitly teach the use of the tool	<ul style="list-style-type: none"> <li>• professional reading</li> <li>• trialling resources and sharing them</li> <li>• classroom visits between colleagues</li> <li>• lesson observations by the 4 leaders</li> <li>• using common language and tools across curriculum areas at different times and there being some form of progression in its level of difficulty</li> </ul>
Resistant staff and the balance between Whole Staff Professional and Departmental Professional Development	<ul style="list-style-type: none"> <li>• changing the Professional Development programme to allow departments to trial what they had learnt.</li> <li>• having deadlines e.g. 2008 Year 9 Open Evening, 2009 Education Review Office visit.</li> </ul>
Managing the Thinking Toolkit and Habits of Mind	<ul style="list-style-type: none"> <li>• the toolkit was reduced from over 100 tools to 6 which became the focus</li> <li>• Only 3 of the 16 Habits of Mind chosen to begin with after surveying staff and students on which were the areas of weakness.</li> </ul>
Changing students' preference for a teacher-centred classroom	<ul style="list-style-type: none"> <li>• trialling the use of techniques which made the students value themselves as active learners who were competent thinkers and problem-solvers.</li> <li>• developing students' use of Habits of Mind</li> </ul>

## What were the successes 2006 - 2011?

- The 2009 Education Review Office (External agency which reviews schools in New Zealand) Key Findings state:  
*“Students are highly engaged in learning”.*  
*“Students have confidence in themselves as achievers”.*  
*“High level questioning is used in classrooms and students’ thinking is challenged”.*  
*“Students are starting to take more responsibility for their learning”.*  
*“The P.D. programme has moved teacher practice to students sharing their learning with other students”.*
- Feedback from students and teachers affirms that they are reflecting on their own learning and asking questions which take their understanding to a higher level.
- Performance Management of staff has all staff documenting how they have incorporated the tools or H.O.M into their teaching.
- The 2008 Year 9 Open Evening was a showcase of the Thinking Classroom Projects. Feedback from parents indicated that higher thinking and learning were very evident.

## **B. 2012 – The Analysis of the Napier Girls’ High School Thinking Skills Programme 2012**

It is now appropriate to analyse the goals of the programme i.e. to develop NGHS Students so they become ‘students who are competent thinkers and problem solvers, who actively seek, use and create knowledge. They reflect on their learning, draw on personal knowledge and intuitions, ask questions and challenge the basis of assumptions and perceptions’.

To analyse the programme I intend to:

1. Interview the 8 Heads of Learning Areas as to where the school is with its thinking skills programme. This includes a checklist for Thinking Skills Programmes.
2. Analyse the thinking skills of the 2012 Year 13 students (the group which began the programme as Year 9 students in 2008).
3. Propose possible future directions for the thinking skills programme at NGHS.



## HOLA QUESTIONNAIRE SUMMARY

7 out of 8 Learning Areas responded.

a. Does your LA have: A list of the major thinking skills to be taught throughout the levels.

**Yes**  
4

**In Progress**  
1

**No/No response**  
2

### Toolkit

1.	Graphic Organisers	5
2.	Thinkers' Keys	1
3.	SCAMPER	
4.	Questioning	1
5.	Analogies	
6.	Three Level Reading Guide	1

### HOM

1.	Questioning and posing problems	3
2.	Thinking flexibly	3
3.	Applying past knowledge to new situations	3

Bloom's Taxonomy was also mentioned as a tool used by a Learning Area.

b. Provision for teaching these skills at all levels

Yes	In progress	No.
2	4	1

### Question 2

- a. use common terminology and instructional language to describe the thinking tools they teach?
- b. understand the major components of the thinking skills they are teaching?
- c. introduce thinking skills as explicitly as possible by explaining and modelling each skill and having students reflect on how they apply the skills?
- d. provide frequent practice in each skill, with instructive feedback, once it has been introduced?
- e. require students to reflect on and discuss how they apply each skill?

Yes	In progress	No.
5	1	1
5	1	1
3	3	1
2	3	2
1	3	3

### Question 3

Does your LA have any provisions for assessing student thinking skills?

1	1	5
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## HOLA Questionnaire Conclusions

1. 5/7 Learning Areas have a list of major thinking skills taught in LA.

***Next Step: working with the two learning areas to complete their lists.***

- a. Graphic Organisers are the most favoured LA tool from the toolkit.

***Next Step: Greater familiarisation with the other techniques is required by all LAs so that their use becomes integrated into learning.***

The 3 Habits of Mind which were focussed on in the programme are used by almost half of the LAs which responded to the questionnaire.

***Next Step: Integrate the remaining Habits of Mind into learning programmes.***

- b. 2 of the 7 LAs which responded have provision for teaching the skills they named to all levels.

There is scope for developing and including the skills to all levels. It is likely that there is a focus on them at Years 9 and 10 with the remaining year levels not being exposed to the thinking skills on a regular basis.

***Next Step: LA assess which year levels need greater exposure of thinking skills and devise a programme of how they will be integrated into LA schemes and hence class activities.***

2. The thinking skills which are used within LAs are understood by teachers who use common terminology and language.

Some LAs introduce thinking skills explicitly but most do not. Practising and reflecting on the use of the thinking skills is not widespread across learning areas.

***Next Step: provide PD on techniques which students can develop to reflect and assess their use of each skill. Student self-reflection is a possibility.***

3. Only 1 LA assessing student thinking skills.

***Next Step:***

- ***Investigate how other schools assess thinking skills***
- ***Develop a simple and quick assessment method.***

# THINKING SKILLS PROGRAMME

## YEAR 13 QUESTIONNAIRE

The Napier Girls' High School Thinking Skills Programme involved a Thinking Toolkit and Habits of Mind at Year 9. The goal was to introduce these at Year 9 so that they became useful tools in your learning while at school and in the future. Please rank each of the following in terms of how useful it has been to you:

	<b>Toolkit</b>	<b>Always</b>	<b>Sometimes</b>	<b>Never</b>	<b>Not sure?</b>
1.	Graphic Organisers				
2.	Thinkers' Keys				
3.	SCAMPER				
4.	Questioning				
5.	Analogies				
6.	Three Level Reading Guide				
	<b>Habits of Mind</b>				
1.	Questioning and Posing Problems				
2.	Thinking flexibly				
3.	Applying past knowledge to new situations				

Any comments/feedback you wish to make about the thinking skills programme:

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Girls High School - Thinking Skills

Options	Always	Always	Sometimes	Sometimes	Never	Never	Not Sure?	Not Sure?	Response Count	Rating Average
Options	2	7.14%	17	60.71%	3	10.71%	6	21.43%	28	2.46
ers	2	7.41%	6	22.22%	7	25.93%	12	44.44%	27	3.07
ers' Keys	1	3.57%	9	32.14%	10	35.71%	8	28.57%	28	2.89
MPER	8	28.57%	16	57.14%	1	3.57%	3	10.71%	28	1.96
stioning	3	10.71%	18	64.29%	2	7.14%	5	17.86%	28	2.32
ologies	3	10.71%	8	28.57%	4	14.29%	13	46.43%	28	2.96
Level										
g Guide										
									28	
									0	

Options	Always	Always	Sometimes	Sometimes	Never	Never	Not Sure?	Not Sure?	Response Count	Rating Average
Options	12	42.86%	15	53.57%	0	0.00%	1	3.57%	28	1.64
stioning and	12	44.44%	14	51.85%	0	0.00%	1	3.70%	27	1.63
Problems	19	70.37%	8	29.63%	0	0.00%	0	0.00%	27	1.30
king flexibly										
ying past										
dge to new										
ins										
									28	
									0	

comments/feedback you wish to make about the thinking skills programme:

sure what exactly it is... I was never taught scamper, thinkers keys or anything

ially I am a conventional learner needing only sufficient notes and class discussions to get me through but I know that many  
e have helped others in my year level. Thank you.



## YEAR 13 QUESTIONNAIRE CONCLUSIONS

All Year 13 Students (approximately 130) were given written instructions on how to answer the questionnaire on Survey Monkey over a period of a week. It was disappointing that there were only 28 responses. Such a small sample size also raises the question of validity.

### Toolkit

	'Always' and 'Sometimes' Combined %
1. Graphic Organisers	67.85
2. Thinkers' Keys	29.63
3. SCAMPER	35.71
4. Questioning	85.71
5. Analogies	75
6. Three Level Reading Guide	39.28

When looking at the table above which combines the 'Always' and 'Sometimes' category, the most popular 3 tools are Questioning, Analogies and Graphic Organisers. Questioning is the essence of a 'thinking' environment so it is pleasing that it is the most favoured tool. The 3 remaining tools are used considerably less.

### Habits of Mind

	'Always' and 'Sometimes' Combined %
1. Questioning and Posing Problems	96.43
2. Thinking Flexibly	96.29
3. Applying past knowledge to new situations	100.00

The combined statistics above illustrate that students find the 3 Habits of Mind chosen, to be very useful in their learning. It is hoped that the students will apply them in all aspects of their lives.

### Comments and Feedback

Teaching the toolkit and Habits of Mind has been effective for some. The purpose and benefit of the Thinking Programme and of each technique need to be explained fully to students. Maintaining their usage in the senior school will also embed the skills fully for Napier Girls' High School students.

## POSSIBLE FUTURE DIRECTIONS

1. Induct new staff on arrival as to the Thinking Tool Kit and Habits of Mind.
2. Use some of the Terms 2 and 3 Staff Professional Development sessions to review and refresh Learning Areas' use of the Thinking Tool Kit and Habits of Mind. The emphasis of the sessions would be to encourage staff to teach the skills more overtly and to all year levels.
3. Incorporate the teaching of the Habits of Mind into the Vertical Form Teacher/Form Captain/ Deputy Form Captain for delivery to Year 9 in the beginning of year programme when Year 9 is the only year level present. The delivery of the Habits of Mind will eventually become a Form Captain/ Deputy Form Captain role. The delivery and teaching of the Habits of Mind would continue for all year levels during extended form time through the year. The 16 Habits of Mind could be covered over the 5 years a student is at Napier Girls' High School.  
e.g. 2013 general introduction and 3 Habits of Mind to year 9  
2014 another 3 Habits of Mind delivered to year 9 and 10  
2015 another 3 Habits of Mind delivered to year 9, 10 and 11 etc.  
In the long term it is envisaged that the Habits of Mind will become part of each student's myportfolio. It will be the student's responsibility to set goals for each Habit of Mind and reflect on their progress. The first four lessons were developed during the sabbatical.
4. Develop the use of a snapshot method of assessing whole school progress of thinking skills at regular intervals. See Appendix C as a possible example. "How thoughtful is your school?" A Checklist may be a possibility.
5. Include a 'Classroom Observation Checklist of Thinking Skills' as part of the school's Performance Management System. See Appendix C as a possible example.

### Bibliography
















- Costa, Arthur L 2011* Developing Minds - A Resource Book for Teaching Thinking.  
3<sup>rd</sup> Edition
- Cubitt, Sandra et al 1999* Top Tools for Social Sciences Teachers.  
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- Johnson, Bethany et al 2004* Habits of Mind – A Curriculum for Community High School of Vermont Students.  
Community High School of Vermont
- Rennie, Adrian* Habits of Mind.  
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### Websites

<http://pamelahardcourt.wordpress.com/2011/03/07/welcome-to-habits-of-mind/>

**See attached Appendices A, B and C.**

# H a b i t s o f M i n d

 <p><b>1. Persisting</b> Stick to it! Persevering in task through to completion; remaining focused. Looking for ways to reach your goal when stuck. Not giving up.</p>	 <p><b>2. Managing impulsivity</b> Take your Time! Thinking before acting; remaining calm, thoughtful and deliberative.</p>
 <p><b>3. Listening with understanding and empathy</b> Understand Others! Devoting mental energy to another person's thoughts and ideas. Make an effort to perceive another's point of view and emotions.</p>	 <p><b>4. Thinking flexibly</b> Look at it Another Way! Being able to change perspectives, generate alternatives, consider options.</p>
 <p><b>5. Thinking about your thinking (Metacognition)</b> Know your knowing! Being aware of your own thoughts, strategies, feelings and actions and their effects on others.</p>	 <p><b>6. Striving for accuracy</b> Check it again! Always doing your best. Setting high standards. Checking and finding ways to improve constantly.</p>
 <p><b>7. Questioning and problem posing</b> How do you know? Having a questioning attitude; knowing what data are needed and developing questioning strategies to produce those data. Finding problems to solve.</p>	 <p><b>8. Applying past knowledge to new situations</b> Use what you Learn! Accessing prior knowledge; transferring knowledge beyond the situation in which it was learned.</p>
 <p><b>9. Thinking and communicating with clarity and precision</b> Be clear! Striving for accurate communication in both written and oral form; avoiding over generalizations, distortions, deletions and exaggerations.</p>	 <p><b>10. Gather data through all senses:</b> Use your natural pathways! Pay attention to the world around you Gather data through all the senses; taste, touch, smell, hearing and sight.</p>
 <p><b>11. Creating, imagining, and innovating</b> Try a different way! Generating new and novel ideas, fluency, originality</p>	 <p><b>12. Responding with wonderment and awe</b> Have fun figuring it out! Finding the world awesome, mysterious and being intrigued with phenomena and beauty.</p>
 <p><b>13. Taking responsible risks</b> Venture out! Being adventuresome; living on the edge of one's competence. Try new things constantly.</p>	 <p><b>14. Finding humor</b> Laugh a little! Finding the whimsical, incongruous and unexpected. Being able to laugh at oneself.</p>
 <p><b>15. Thinking interdependently</b> Work together! Being able to work in and learn from others in reciprocal situations. Team work.</p>	 <p><b>16. Remaining open to continuous learning</b> I have so much more to learn! Having humility and pride when admitting we don't know; resisting complacency.</p>

## APPENDIX C:

# Classroom Observation Checklist

LEE WINOCUR FIELD

Teacher \_\_\_\_\_ School \_\_\_\_\_ District \_\_\_\_\_  
Observer \_\_\_\_\_ Subject \_\_\_\_\_ Date \_\_\_\_\_

### Directions:

Mark an "x" in the appropriate column for each classroom behavior. If the statement is generally true of this classroom, mark yes. If the statement is generally not true of this classroom, mark no. If you are unsure, mark the third column.

### Affective Indicators

Yes      No      Unsure

#### 1. Fosters a Climate of Openness

- Eye contact is frequent between teacher and students, and students and students.
- Teacher moves around the room.
- Students listen attentively to others.
- Teacher calls on students by name.

#### 2. Encourages Student Interaction/Cooperation

- Students work in pairs or small groups.
- Students respond to other students.
- Students help others analyze and solve problems.

#### 3. Demonstrates Attitude of Acceptance

- Teacher accepts all valid student responses.
- Incorrect student responses elicit encouraging, supportive comments.
- Teacher acknowledges student comments with a nod or other signal.

### Cognitive Indicators

#### 4. Encourages Students to Gather Information

- Reference materials are readily available.
- Students use reference materials.
- Student mobility is allowed to obtain information.
- Teacher acts as facilitator.
- Students record data in notebooks or journals.

This appendix is reprinted from "Classroom Observation Checklist," by S. L. Winocur, 1991, *Developing Minds: A Resource Book for Teaching Thinking* (Rev. Ed., Vol. 1, pp. 386-388), edited by A. L. Costa. Alexandria, VA: ASCD. Copyright 1983 by S. Lee Winocur, Costa Mesa, California.

Yes      No      Unsure

5. Encourages Students to Organize Information
  - Teacher works from organized lesson plans.
  - Students classify and categorize data.
  - Students take notes systematically.
  - Teacher's presentation is logical, organized.
  - Ideas are graphically symbolized during instruction.
6. Encourages Students to Justify Ideas
  - Teacher probes for correct responses.
  - Teacher seeks evidence for stated claims.
  - Students analyze sources of information for reliability, relevance.
  - Teacher frequently asks, "Why do you think so?"
  - Students relate learning to past experience or similar situations.
7. Encourages Students to Explore Alternatives and Others' Points of View
  - Teacher establishes expectations for divergent solutions.
  - Teacher allows time to consider alternatives/points of view.
  - More than one student is queried for point of view/solution.
  - Teacher asks students to justify and explain their thoughts.
8. Asks Open-Ended Questions
  - Teacher asks open-ended questions with multiple answers as frequently as single-answer questions.
9. Provides Visual Cues for Developing Cognitive Strategies
  - Teacher appropriately uses a variety of visual media (charts, chalkboard, maps, pictures, gestures).
  - Teacher uses symbolic language to illustrate a point (simile, metaphor).
  - Teacher uses outlining.
10. Models Reasoning Strategies
  - Teacher uses "if/then" language.
  - Teacher poses "what if " or "suppose that" questions.
  - Teacher uses clear examples to facilitate logical thought.
11. Encourages Transfer of Cognitive Skills to Everyday Life
  - Teacher encourages transfer at end of lesson with comments like, "This will help you in your everyday life in this way . . ."
12. Elicits Verbalization of Student Reasoning
  - Teacher poses questions at different levels of Bloom's Taxonomy.
  - Teacher allows at least 10 seconds wait time for student answer before restating or redirecting the question.
  - Teacher asks students to clarify and justify their responses.
  - Teacher probes "I don't know" responses.
  - Teacher reinforces students for responding to open-ended questions.

## Appendix C:

# How Thoughtful Is Your School?

ARTHUR L. COSTA

Use the following 15 questions as criteria to rate your school's effectiveness in developing thoughtful education.

Degree of Effectiveness: 5 = high; 1 = low

To what degree:	5	4	3	2	1
1. Do your community and staff value thinking as a primary goal of education?	5	4	3	2	1
2. Does the staff believe that with appropriate intervention, human intelligence can continue to develop throughout a lifetime?	5	4	3	2	1
3. Have you reached consensus on what it means to be an effective thinker?	5	4	3	2	1
4. Are students aware that learning to think is a goal of their education?	5	4	3	2	1
5. Do teachers use language (questioning and structuring) that invites students to think?	5	4	3	2	1
6. Do teachers' response behaviors extend and maintain higher levels of thinking?	5	4	3	2	1
7. Are learning activities arranged in order of increasing complexity and abstraction?	5	4	3	2	1
8. Do instructional materials support higher cognitive functioning?	5	4	3	2	1
9. Is adequate time devoted to thinking and reflecting?	5	4	3	2	1
10. Does curriculum, instruction, and assessment provide for differences in modality strengths, cognitive styles, and learning styles?	5	4	3	2	1
11. Are students' thoughtful behaviors celebrated in daily classroom life?	5	4	3	2	1
12. Are tasks requiring thoughtful strategies of problem solving and decision making encountered repeatedly over time and throughout, across, and outside the curriculum?	5	4	3	2	1
13. Do students and teachers discuss their thinking (metacognition)?	5	4	3	2	1
14. Is growth in thinking skills, cognitive strategies, and habits of mind monitored, assessed, and reported?	5	4	3	2	1
15. Do significant adults model thoughtful behavior?	5	4	3	2	1

Source: Developing Minds – A Resource Book for Teaching Thinking  
3<sup>rd</sup> Edition  
Edited by Arthur L. Costa