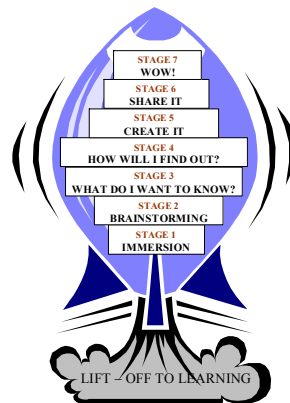


PRESENT

Lift-off to Learning!

Session 3



by

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PLANNING USING A PCD APPROACH

(POSSIBILITIES-CONSEQUENCES-DECISION)

Planning engages students in critical thinking as alternatives are considered, priorities assigned and plans are made. Using a decision-making model during the planning stages of an individual assignment or group task will assist students in making most appropriate choices before tasks are undertaken. Applying a PCD approach will see students defer judgement about an initial option, and will see consideration being given to a range of possibilities.

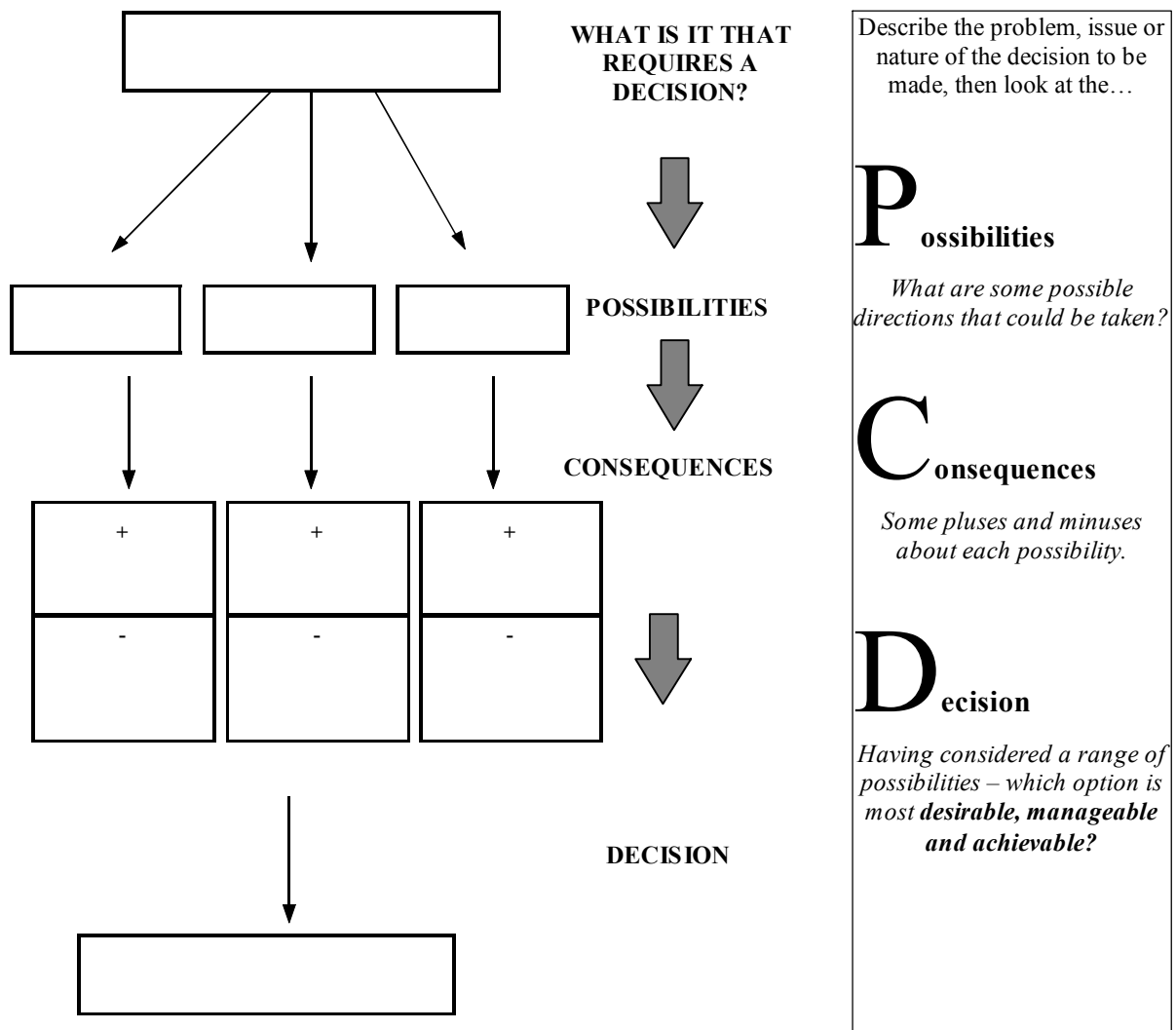
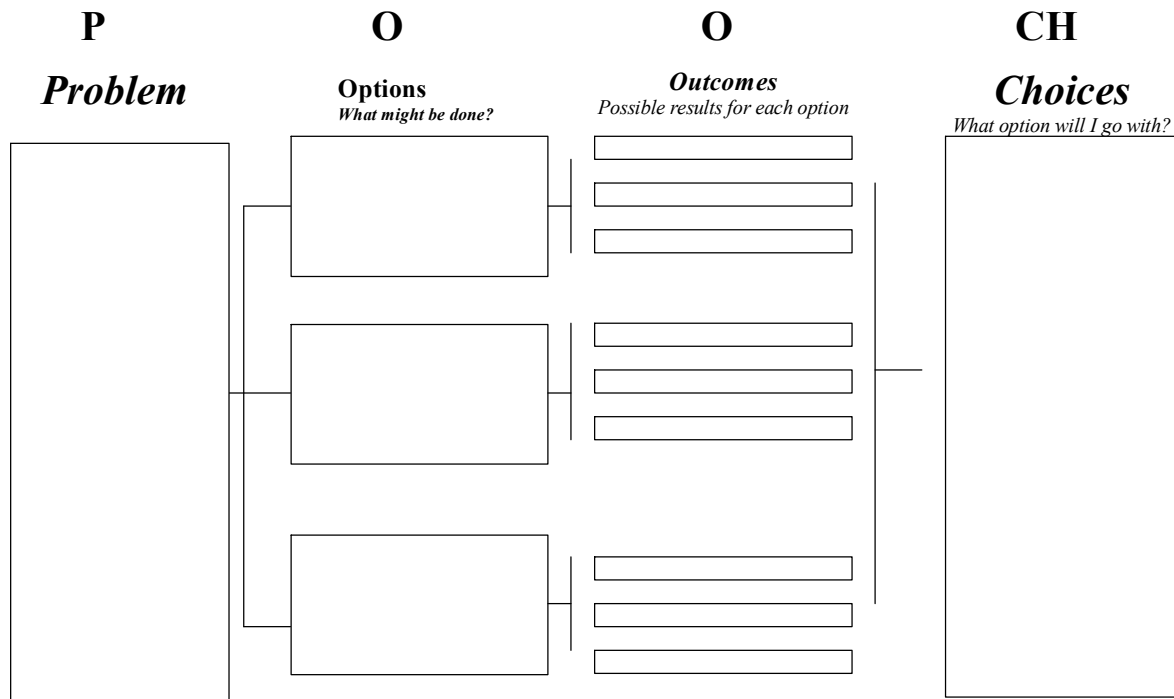


Figure 2.1 The **PCD** Approach to Planning

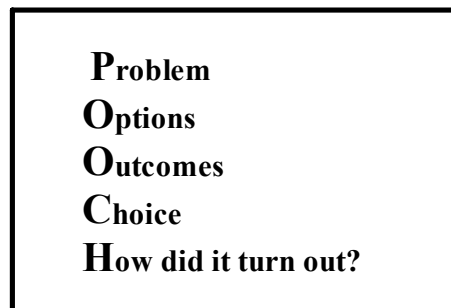
FORECASTING AND SELECTING USING POOCH

(Problem-Options-Outcomes-Choice)

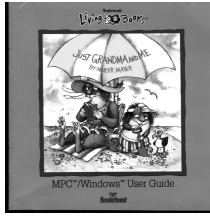


The POOCH Model

In order to add a reflective (metacognitive) component to the model, teachers may consider changing the acronym to:



Pohl (2000) *Teaching Complex Thinking* – Hawker Brownlow Education Melb., Vic.



SCAMPER

Topic –Computers and Living Books –
 “Just Grandma and Me” (by Mercer Mayer)
 Target Group – Primary Years of Schooling

Substitute	<i>Substitute a person, object or serve in a different way or role.</i>	Substitute “Grandpa” for “Grandma” and tell how the story may be different.
Combine	<i>Bring together or unite Blend ideas, materials, situations.</i>	Combine your knowledge of the solar system and ideas from the story. Retell the story set on another planet.
Adapt	<i>Adjust to suit another purpose or set of conditions.</i>	Adapt the setting of the story so that it now takes place in the mountains instead of the beach.
Modify magnify, minify	<i>Modify attributes, frequency or size. Enlarge to make larger in form or quality Reduce to make smaller, lighter, less frequent.</i>	When you mouse click items on the screen, some things come to life. Suggest something else that may be included, tell what it might do and suggest sounds that you could add.
Put to another use	<i>Use for an alternative purpose, in another situation or in a different way.</i>	Suggest other uses for flippers and goggles besides using them when swimming.
Eliminate	<i>Remove or omit a quality, a part or the whole.</i>	What part of the story could be left out? Why did you choose this part?
Reverse	<i>Change order, adjust or create a new sequence, layout or scheme.</i>	Imagine the story took place at night. Design a page set at the beach after dark or tell how the story may change.



CAMPER IN MUSIC

The following may form the heart of a critical analysis of a known or an unknown piece of music.

Note that the order of questioning may not necessarily follow the given sequence.

As a result, this structure may best serve as a checklist of the critical questions to be addressed when evaluating the strengths and weaknesses of a given piece of music.

CRITICAL QUESTIONS		
C	COMPOSITION	How effective are the compositional devices employed by the composer / arranger?
A	ACCOMPANIMENT	Comment on the type and style of the accompaniment. What would you say about the chord selection?
M	MELODY MOTIFS	In terms of the melody, how appropriate was : <ul style="list-style-type: none"> • the selection of the key? • the construction of the melodic line? What comment would you make about the tonality?
P	PLOT PIECE	Comment on the overall plot (or form) of the piece.
E	EFFECTIVENESS	How might you justify the effectiveness or otherwise, of this as a piece?
R	RHYTHM	Suggest how the use of specific rhythmic devices used by the composer has enhanced or detracted from the overall appeal of the piece.

SCAMPER IN MUSIC

Use the following cues to change / improve an existing composition or arrangement.

S	Substitute	What else instead? What other instrument (s) ? Other time signatures? What else ? Who else instead?
C	Combine	Combine other : <ul style="list-style-type: none"> • harmonies? • rhythms ? • melodies ?
A	Adapt	What other melodies might fit this context?
M	Modify magnify, minify	Magnify - What might be added or increased? Minify- What might be reduced or subtracted? Can we modify: <ul style="list-style-type: none"> • Tessitura? • Instrumentation? • Tonality? • Rhythm?
P	Performance	New or novel ways to perform it? Different instruments, arrangement, orchestration ?
E	Eliminate	What may be left out all together? What parts are not required?
R	Review	Is there anything else that can be done to enhance the piece?

RANDOM INPUT

How might:

- Thinking about a garden chair improve the use of mobile phones, or vice versa?
- Thinking about saucepans help overcome pollution, or vice versa?
- Thinking about saucepans improve the design of garden chairs, or vice versa?
- Thinking about pollution improve our use of mobile phones, or vice versa?

	MOBILE PHONE	SAUCEPAN
GARDEN CHAIR		
POLLUTION		

**PLANNING TEACHING AND LEARNING ACTIVITIES
WITH A THINKING SKILLS FOCUS
USING RYAN'S (Revised) THINKERS KEYS**

Topic : Water Conservation

Rich Experience

Effective advertising works. Develop ' a fantastic campaign that would convince many people to pay deep respect to water. Your advertising may involve songs, videos and brief radio presentations.

Rich Experience

Design a future home that could conserve every last drop of water. Include at least 5 water-saving devices that will force house-owners to considerably lower their wastage of water.

1. The Question Key

Q. How serious is the issue of water conservation in the world today?

2. The Brainstorming Key

Brainstorm at least 10 responses you could give to someone who says that it's not important to conserve water.

3. The Perspectives Key

Outline the two opposite sides to this argument:

People have the right to use as much water as they choose.

4. The Graphics Key

Use a Fishbone diagram to outline some effective water-saving techniques, and then add some information about each of the ideas.

5. The Matrix Key

Create devices that conserve water: Along the top: Cup, saucepan, bucket Down the side: TV, desk lamp, socks

6. The Decision Key

What would be the four key criteria for a water-friendly house? Now use these criteria to decide whether your house needs more water-saving devices.

7. The Info Key

List 10 ways that water is put to use in the everyday house. Place them in order from:

Uses the most water, to uses the least water

Most vital to humanity, to least vital.

8. The Commonality Key

What do water conservation and music have in common?

9. The Improvements Key

People water their gardens with hoses and sprinklers. Describe the weak points for these, and then develop a series of improvements for each of their weaknesses.

10. The Rubrics Key

Schools use lots of water. Develop three standards for the use of water in your school, and list them according to: Wasted, OK, Tight.

11. The Action Key

You know that you use too much water in your own house. Set out a plan for conserving the water that you use, and clearly write the steps you will take to put this plan into action.

12. The Reverse Key

Q. How can we encourage people to waste water?

Q. How can we encourage people to conserve water?

13. The Brick Wall Key

Challenge this statement: Water is a precious resource.

14. The BAR Key

BAR a garden hose.

15. The Prediction Key

If fresh water is not easily available in 20 years from now, what likely actions will need to be taken by world governments?

16. The Ridiculous Key

Give reasons why this needs to be done:

Everyone must only be allowed one bucket of water every day.

This includes their drinking water, their shower, and any other use.

17. The Three Whys Key

Some people badly waste water.

1. Why is that?

2. Why is that?

3. Why is that?

18. The Inventions Key

Invent a device that would guarantee that water running out of a tap would never be wasted.

19. The Personal Key

How well do you respect water? Be honest. Do you waste it, or do you conserve it at every opportunity?

20. The Ripples Key

Work out the steps in between: The 1st action: You spill a glass of water.

The final consequence: The entire country experiences a week of water shortages.

Thinking Hats

Debono's six thinking hats may provide a valuable reflective tool. Typical questions may include:

STUDENT SELF - EVALUATION CHECKOUT

	COMMENTS / FEEDBACK
<p>WHITE HAT Describe the Inquiry task in your own words</p>	
<p>YELLOW HAT What was good about being involved in this Inquiry? List many things.</p>	
<p>BLACK HAT What were some of the problems you encountered during this Inquiry?</p>	
<p>GREEN HAT Describe some creative ways you overcame the difficulties you just described.</p>	
<p>RED HAT What did you feel about the Inquiry as a whole? Which aspects of the task were : Frustrating? Interesting? Challenging? Rewarding?</p>	
<p>BLUE HAT In what ways do you think that participating in this Inquiry has been a valuable learning experience for you?</p>	

Thinking Journals

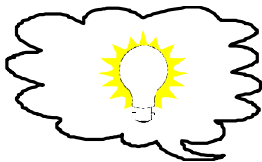
As introduced during the Immersion stage, the Thinking Journal is an appropriate tool to have students track, monitor and record their own thinking processes.

In such a record, students may have noted, outlined or explained, aspects such as:

- thinking strategies used at different points
- new ways they have tried – risks they have taken
- feedback on what they did well / not so well
- how they might approach the task differently another time...and so on.

An important part of concluding the Inquiry will be for students to critically review their journals ready for placement in their portfolios or to be passed up as an integral part of the assessment.

In the example below – the focus for the journal writing for these young students was purely on the thinking aspects of the topic: -



Thinking Journal

During this term you will be asked to do activities that will help you think about things in lots of different ways.

You will practise some new and different ways to think about all sorts of things. This journal will give you a chance to explain the tools of thinking you use in your own way and to share what you gained from the work you have done.

Enjoy the activities we have planned together!

At the end of each session you will be given time to record

- **the things you did during the session**
- **thinking tools you used**
- **things you learned**
- **things you enjoyed or didn't enjoy.**

You can also

- ask questions about things you didn't understand
- suggest activities for future sessions.

Reflecting on the work of others – Partner Evaluation

Partner Feedback Sheet

Thinking about your partner project- how would you rate your selves against the following:

- We worked well together & co operated

0	1	2	3	4	5	6	7	8	9	10

- Both partner put in equal effort & time

0	1	2	3	4	5	6	7	8	9	10

- You used your time wisely & didn't feel rushed

0	1	2	3	4	5	6	7	8	9	10

- Used effective communication- both partners shared ideas & listened to each others ideas

0	1	2	3	4	5	6	7	8	9	10

We're proud of...

Next time we would change....

Self Evaluation- Webpage Project

Thinking about your project- rate how you went...

- Research- I was able to find information on my topic independently

0 1 2 3 4 5 6 7 8 9 10
|_| |_| |_| |_| |_| |_| |_| |_| |_| |_|

- Research- I attempted to write skinny notes/ draft independently & in my own words

0 1 2 3 4 5 6 7 8 9 10
|_| |_| |_| |_| |_| |_| |_| |_| |_| |_|

- Presentation- I was creative in my presentation and put thought into headings, images & background

0 1 2 3 4 5 6 7 8 9 10
|_| |_| |_| |_| |_| |_| |_| |_| |_| |_|

- Skill Development- I have used new skills in gif animation and web design (like hyperlinks) to improve my project

0 1 2 3 4 5 6 7 8 9 10
|_| |_| |_| |_| |_| |_| |_| |_| |_| |_|

I'm proud of...	Next time I would change....
<hr/>	<hr/>

BLOOMS AS A REFLECTIVE TOOL FOR STUDENTS

The taxonomy may even be used in a reflective sense upon completion of a unit of work , as the example below suggests:

NAME _____ TOPIC _____

REMEMBERING (Factual answers, recall and recognition.)	What do you consider you will remember the most from this topic?
UNDERSTANDING Translating, interpreting, showing understanding)	What do you consider you understand more clearly from this topic?
APPLYING (Using information gained in different, familiar situations)	What thinking strategies did you apply in this topic that you can see yourself using in other, perhaps similar activities in the future?
ANALYSING (Break into parts to examine more closely)	What are some things you would do the same in your next topic, and what are some things you might do differently?
EVALUATING (Judge, use criteria, rank, substantiate)	Justify the value of this topic, supported by your own views and that of others who also participated.
CREATING (Combining information, creating new products, ideas, etc.)	<p>In the light of the feedback from this topic (and based upon your response to the analysis question, above) <i>exactly</i> what are you going to do differently when we undertake our next topic? More specifically, what might you :</p> <p>Make Bigger (i.e. do more of)</p> <p>Add (i.e. use different approaches or strategies)</p> <p>Remove (i.e. abandon or eliminate?)</p>

THINKING RESOURCES ORDER FORM

Prices effective from January, 2010

All cheques payable to "Thinking Education Trust"

THINKING

EDUCATION

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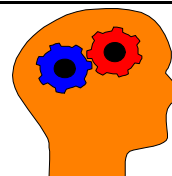
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Fax No : _____

Email : _____

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Purchase Order No: _____

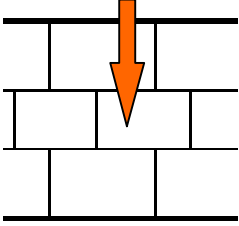


Description	Unit Price	Quantity Required	Cost	PAID Yes/ No	Goods Taken (Yes / No)
Developing the Thinking Curriculum in <i>your</i> School — A Handbook for Educators.	\$19.80				
Publication - Teaching Thinking in the Primary Years	\$39.95				
Publication - Learning to Think / Thinking to Learn	\$39.95				
Publication - Still Learning to Think / Thinking to Learn	\$39.95				
Publication - Teaching Complex Thinking	\$39.95				
Publication - Lift-off to Learning!	\$59.95				
Publication - Quizzes	\$14.25				
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Thinkers Key Cards	\$44.00				
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CD - Thinker's Keys - Site License	\$770.00				
Postal Orders Only Handling & Freight	\$5.00 (AUST) \$9.00 (O/S) / item				
TOTAL (before GST)					
10 % GST (AUSTRALIAN ORDERS ONLY)	+10%				
TOTAL			\$		



Quizzes

- Puzzles with a Purpose -

<p>ever ever ever ever</p> <hr/> <p>my mind</p>	<p>TIME TIME</p>	<p>thorn thorn thorn thorn thorn thorn thorn thorn thorn thorn rose thorn thorn thorn thorn thorn thorn thorn thorn thorn thorn</p>
	<p>GBA</p>	<p>DANCE x DANCE</p>
<p>THE DEAD WATER</p>	<p>C DEN TAL</p>	<p>24 hrs ALL work</p>



Quizzes - puzzles with a
 PU Hawker Brownlow Education