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Hawker Brownlow  
**Thinking &  
Learning**  
Conference

*the teacher's conference*

**GLEN PEARSALL**

**FRIDAY 17 MAY**

**Session 1**

**Questioning Techniques**

**MELBOURNE**

# GLEN PEARSALL

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# QUESTIONING TECHNIQUE

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## Questioning Technique Toolbox

1. **Cold Calling**– Sometimes referred to as the ‘No hands up rule’, cold calling is asking students a question without waiting for them to indicate whether or not they have the answer.
2. **Wait time** – There are two kinds of teacher wait time. The first type is when you wait after a question to give students an appropriate amount of time to think of an answer.
3. **Pause Time** – The second type of wait time, sometimes known as wait time two. This is when you pause after a student gives an answer to encourage them to add greater depth and detail to their response
4. **Blank Prompt** – Teachers pretending not to understand the problem and asking students to explain it to them.
5. **Inverted Questions** – Framing your questions with a statement of fact and then asking why or how is this the case, as opposed to asking a closed question to discover that fact.
6. **Question Relay** – When a student wants to shrug off a question with a lazy ‘I don’t know’, you can ask them to listen to two other responses and determine which the best response is.
7. **Feedback Signals** – Non-verbal signals that students can use to demonstrate to you the extent of their understanding.
8. **Elaboration Cues** – Questions designed to guide students towards more detailed and thoughtful answers.
9. **Lateral Questions** – When a student answers you bounce this observation for comment or reflection: Can they add detail, contest or extend that answer.
10. **Second Draft** – Asking the class to rephrase a correct answer for the sake of clarity and precision.

### Newman Prompts Data Tool

Use the data tool below to record whether you employ these prompts (Newman 1977) on every occasion when you help students address difficulties with worded maths problems:

	<b>Reading Errors</b> <i>Please read the question to me. If you don't know a word leave it out.</i>	<b>Comprehension Errors</b> <i>Tell me what the question is asking you to do?</i>	<b>Trans - formation Errors</b> <i>Tell me how are you going to find the answer?</i>	<b>Process Skills Errors</b> <i>Show me what to do get the answer. 'Talk aloud' as you do it.</i>	<b>Encoding Errors</b> <i>Now, write your answer to the question</i>
<b>Interaction One</b>					
<b>Interaction Two</b>					
<b>Interaction Three</b>					
<b>Interaction Four</b>					
<b>Interaction Five</b>					

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## Questioning Techniques Further Examples

### Inverted Questions

This style of question involves presenting students with an answer and then asking them why it is correct. By simply inverting a closed question so that the answer is included in the prompt, the teacher can create a much richer question:

#### *Closed Question*

*Teacher: Is the 3 the numerator in the fraction  $\frac{3}{4}$ ?*

*Student: Yes.*

#### *Inverted Question*

*Teacher: The 3 is the numerator in this fraction. Why?*

*Student: The 3 is the numerator because it tells us that there are three equal parts in the whole number.*

### Exemplifying

Sometimes students will give you the correct answer but only understand the question in its narrowest sense. Exemplifying is a technique that teachers employ when they have already secured a correct answer but want to confirm that an individual student or the class group have fully understood the process for coming up with that answer.

Individual - the teacher asks the student who answered for another example to back up their initial response.

*Student – Oh, that happened in the Phillipines, when mum and dad lived in Manilla.*

*Teacher - Anil, can you think of another occasion when that sort of protest led to a revolution?*

Whole class - the teacher might ask the class group for another example to support what the individual student has suggested.

*Can anyone else think of an example to back up Anil's answer?*

A similar strategy for testing student understanding is the second draft technique.

### Second Draft

Typically you use this technique when you want to improve the quality of student responses. After receiving an initial student response, you ask other class members to refine that answer.

You might ask them to use more formal language or more precise terms or get them to phrase it in a more fluent or concise fashion. The important point here is that they are evaluating the quality of class responses and trying to improve them.

*Teacher: How would you best describe this group of elements?*

*Student: Xenon and Neon are part of that group of special gases that don't react to stuff*

*Teacher: Can someone come up with a second draft of that response, Aaron?*

*Second Student: Xenon and Neon are part of the family of inert gases that are non-reactive.*

### Question Relay

It can be frustrating when cold calling students for an answer if their knee-jerk response is an unthinking 'I don't know.' A Question Relay is an effective technique for ensuring that students don't dodge questions in this way. In this technique when a student tells you that they can't come up with an answer, you don't simply move on to another person. Instead, you tell them to listen carefully to the next two responses and consider which of those answers they could have used themselves.

*Teacher: What are some of the health problems associated with smoking, Taylor?*

*Taylor: I don't know.*

*Teacher: OK, listen carefully to the next two answers. I'm going to come back to you to ask you which of them you think is the most accurate.*

*Carlos, what are some of the health problems associated with smoking?*

*Carlos: Respiratory problems like emphysema and cancer. Heart problems.*

*Teacher: Lucinda?*

*Lucinda: Cardiovascular disease, stroke.*

*Teacher: Which of those answers might you have used, Taylor?*

*Taylor: Probably lung cancer or even just heart attacks.*

## Snapshot Feedback

**Task Clarity Signals:** Traffic light and other routines for checking whether students understand what is asked of them:

**Green** – Understood what is required and can proceed

**Amber** – Understood but would just like to hear it one last time to confirm your understanding

**Red** – Did not understand and are unsure how to proceed

Alternatively, if students are reluctant to flag a lack of understanding you might use the following variation:

**Green** – Teacher explained it well and you understood what is required and can proceed

**Amber** – Teacher explained it ok and you understood but would just like to hear it one last time to confirm your understanding

**Red** – Teacher did not explain it well and you are unsure how to proceed

**Instant Replay Signals:** Asking students to place a hand on their chest if they wish you to have the teacher repeat and clarify what they said. They allow you to closely monitor the take up rate of student understanding during teacher explanations.

**Fist To Five:** A good example of how to gauge the extent of student knowledge is to use the 'Fist to Five' Convention. A teacher wanting to ask a class about whether they should move onto the next topic might typically ask 'Does everyone understand this now?' Too often a handful of 'yeses' is taken as evidence that students are across the detail of a concept or skill. In this situation, it is much better to get students to indicate the degree of their understanding using 'Fist to Five':

A closed fist means they are still very unfamiliar with the concept or skill

A single finger indicates that they have been introduced to an idea.

Two fingers indicates that they still need substantial further practice or explanation to come to an understanding.

Three fingers means that they have a good understanding of the current example and should be able to apply it in some other context.

Four fingers means they understand it really well, and feel confident they could apply it in other contexts.

Five fingers means they have mastered the concept/skill and would feel confident teaching it to a peer.

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## Questioning Activities

### Race the Bell/Clock

A great whole class review activity where students take turns either asking or answering a question on the topic they have just been studying. The game starts with the whole class standing. If a student asks or answers a question they can sit down with the goal of the game being that the whole class is seated again by the time the lesson ends. These simple rules can produce sophisticated interactions if facilitated carefully:

- Students are often eager to 'get out' so there will often be a chorus of responses to easier questions. To ensure an orderly class insist on getting students to put their hands up and then use this to your advantage by carefully selecting students to answer.
- Use the strategic questioning techniques that we discussed earlier today. Don't accept incorrect answers for instance - that's glossing - instead refer the question back to another student. Do the same with partial or incomplete answers and then let both respondents sit down when the answer has been fleshed out. This helps if you have an uneven number of students but also asking a question yourself works well and will ensure that you don't have one student left at the end of the game.

### Line Debate

A line debate is a classic activity for exploring issues in a dynamic way. It teaches students to justify their answers and encourages them to see contested views of a from both sides. The activity is commonly used as a precursor to essay writing. However it can be used to tease out the nuances of any key question that is central to classroom inquiry.

Divide the class into an affirmative and negative team and have them stand on either side of the room. Explain that they are going to have to come up with arguments to support their assigned side of the debate irrespective of their personal views on the topic.

Explain the basic rules: Members of each team take it in turns to volunteer their arguments. If the debater is able to offer a new argument to support their side they can select one of the opposition team to join their team. (If a class member changes sides three times they are "locked" and can't change sides again. This avoids able debaters being "ping-ponged" back and fourth across the room incessantly.) If the debater or the rest of their team can not offer an argument the teacher/umpire will nominate someone to joins the opposition team.

Conduct the debate. It is crucial that you have a means of noting down all the points that are made. (This might mean recording the debate or assigning students to act as scribes.) When finished, ask students to reflect on the topic and outline their own viewpoint. Encourage them to use the answers recorded on the board as stimulus and examples to support their point of view.

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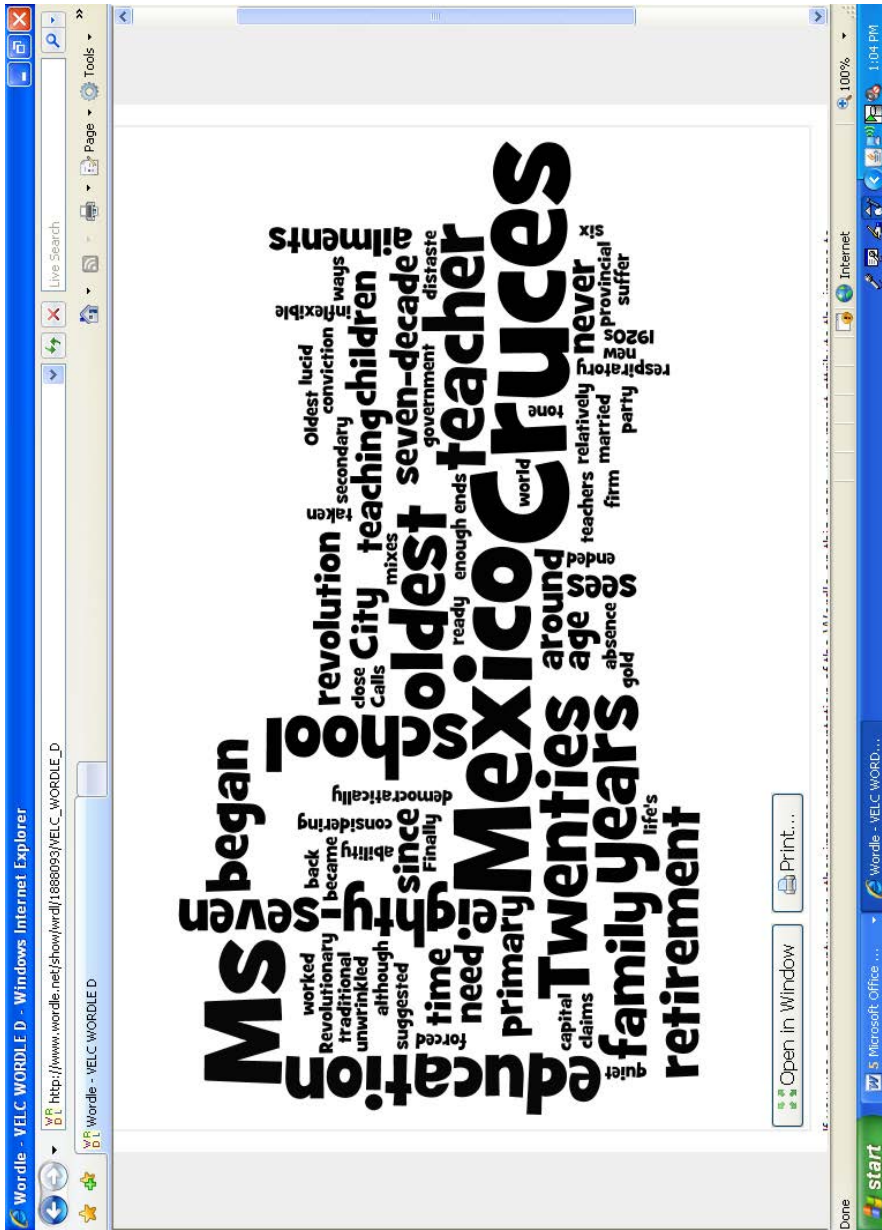
## Addressing Incorrect or Incomplete Answers

### Guided Learning: Prompts

Question prompts are carefully designed to trigger further thinking in the student. Prompts can remind students of knowledge and procedures they're not accessing, help them identify the next step in an approach or reiterate the value of a 'rule of thumb' problem-solving strategy. Fisher and Frey (2014) offer four main types of prompts. Use the tool below to see how frequently you use this in the everyday classroom:

<b>Background Knowledge Prompts:</b> Reminders about facts students have been taught but might have momentarily forgotten.	<b>Process Prompts:</b> Reminders about procedures that students should employ to address errors or misunderstandings.	<b>Reflective Prompts:</b> Cues that encourage students to review their own thinking.	<b>Heuristic Prompts:</b> Queries that ask students to trial 'rule of thumb' problem solving strategies that might suit their individual needs.
<i>Remember Gross Domestic Product is the total value of goods and services produced in a country over the course of a year.</i>  <i>Remember the 'TH' brother is sticking his tongue out and spitting.</i>	<i>I'm thinking about how you can use TEEL to structure a paragraph. What should you do next?</i>  <i>The last step is to put your name on the picture. Have you done this yet?</i>	<i>Look again at the problem. Does your response address the question that was asked?</i>  <i>Check the letter picture. Did you remember to copy every part?</i>	<i>I often put the author's name at the start of the sentence. Would your argument be clearer with an active sentence like that?</i>  <i>I remember my spaces using spaghetti and meatballs. Have you remembered your meatball spaces?</i>

Appendix One - Word Cloud One:



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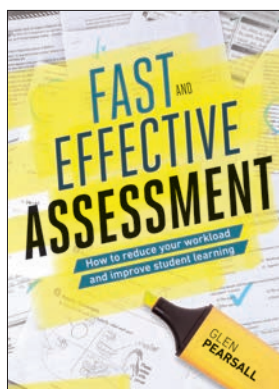
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