



Planning for Critical and Creative Thinking

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What **YOUR** job is today



Be **open**, **honest**,
participate
and
try on the ideas!



3 major messages from Hattie's *Visible Learning*

Transparent Goals

- The more transparent the teacher makes the learning goals the more likely the learner is to engage in the work needed to meet the goal

Success criteria

- the more the learner is aware of the criteria of success the more the learner can see the specific actions that are needed to attain these criteria

Rapid formative feedback

- the more there is feedback about progress towards desired outcomes the more a positive disposition / mindset is developed

Sharing

Sharing about Student Self-Assessment, Thinking Routines and Gathering Evidence of Questioning

What is working? **WHY?**

Challenges? **WHY?**

Do Differently?





Today's workshop



Self-Regulation

Questioning

Posing Questions – Students and Teachers



How do we know someone has learnt something?



WE DON'T!

*The best we can do is
infer that they have
learnt something from
particular behaviour
being demonstrated
over a period of time.*



Successful Learners are Self-Regulated

High Achievers

- are clear that it is the application of strategies and effort that lead to success.
- failure = incorrect application of a strategy or lack of effort
- formally USE lots of strategies

Low Achievers

- attribute success to luck and failure to lack of ability
- are very informal or don't use specific learning strategies

Learners that are Self-Regulated

- Know what they are trying to achieve – they are clear what they are working on
- Have identified a strategy they are going to use to achieve that goal
- Monitor their progression towards that goal
- Use self, peer and teacher feedback to adjust their strategies to more effectively progress towards their goal





Point #1 – Our Goal

- Clearly articulate the student learning goals
- Support students to identify their beliefs about learning (growth versus fixed mindset)
- Provide students with strategies to achieve those goals
- Provide students with sufficient opportunities to monitor their progress, receive feedback and, modify their strategies





Habits and Rituals



Powerful learning is built upon rituals and habitual practices that develops people to think, view and interpret the world in particular ways



Today's workshop



Self-Regulation

Questioning

Posing Questions – Students and Teachers



What is a question?

*"A question is any sentence which has an interrogative form or function. In classroom settings, teacher questions are defined as **instructional cues or stimuli** that convey to students the content elements to be learned and directions for **what they are to do and how they are to do it**"*

Kathleen Cotton – Classroom Questioning

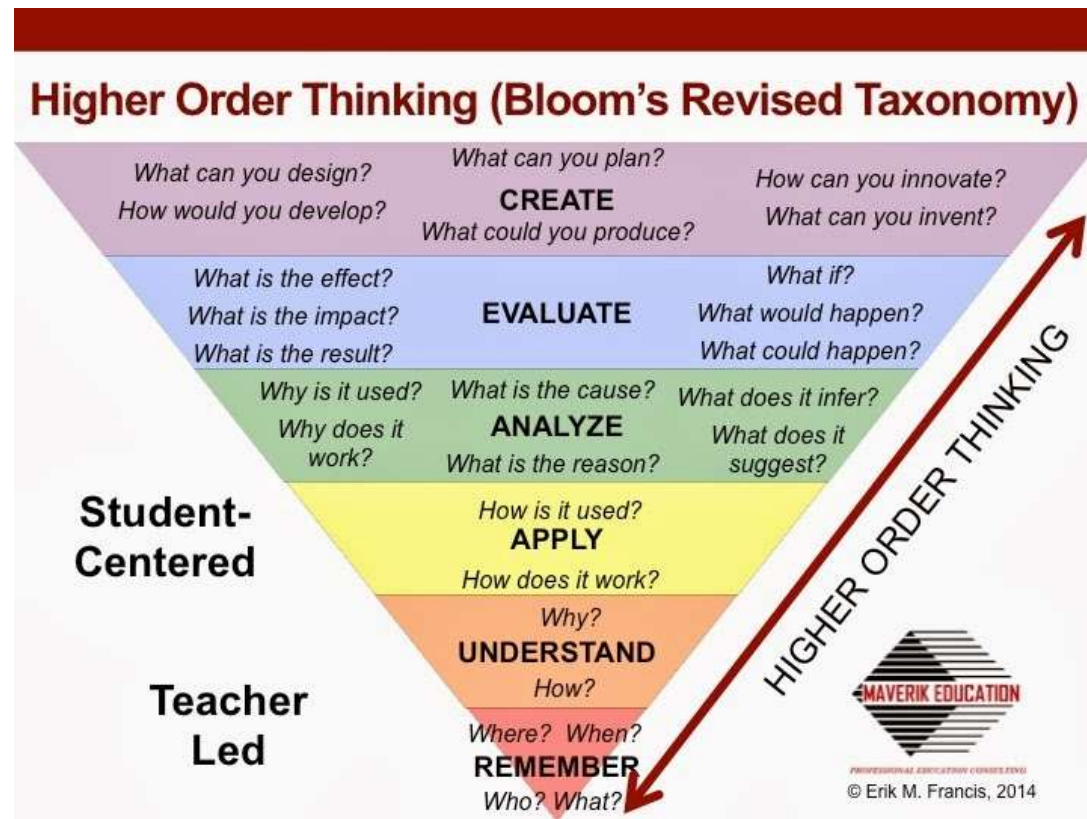


Importance of questioning

The teacher – and students – can **ask questions that elicit thinking at different depths**

Questioning can be used to **spur depth of thinking**

It also can be used to **uncover the current depth** of thinking





Quick share

In your classroom.....

- How many questions do you think you ask in a 30-minute period?
- How many questions do your students ask?



What research shows

Scary evidence....



On the average, during classroom interactions approximately 60 percent of the questions asked are lower cognitive questions, 20 percent are higher cognitive questions, and 20 percent are procedural

Therefore, only 20 percent of the questions we ask students involve intellectual engagement with learning, inquiry, or developing understanding



General Findings (Cotton)

1. Instruction which includes **posing questions** during lessons is **more effective** in producing achievement gains than instruction carried out without questioning students.
2. **Oral questions** posed during classroom sessions are **more effective** in fostering learning than are **written questions**.
3. **Asking questions frequently** during class discussions is positively **related to learning facts**.
4. **Increasing the frequency** of classroom questions **does not enhance** the learning of more complex material.



Importance of Higher Order Questions (Cotton)

1. **Lower cognitive questions** are more effective when the teacher's purpose is to impart factual knowledge and assist students in committing this knowledge to memory
2. In most classes, a **combination of higher and lower cognitive questions** is superior to exclusive use of one or the other
3. Simply asking higher cognitive questions **does not** necessarily lead students to produce higher cognitive responses.
4. **Increasing the use** of higher cognitive questions (to considerably above the 20 percent incidence noted in most classes) produces superior learning gains for students
5. **Teaching students to draw inferences and giving them practice** in doing so result in higher cognitive responses and greater learning gains.

Wait Time – the 'miracle' pause....



Wait Time

Wait Time 1: the pause after asking a question, giving students time to think about their answer

Wait Time 2: the pause after a student answers a question - gives them time to elaborate and be engaged

The typical length of Wait Times 1 and 2 is less than or equal to 1 second BUT if teachers can extend their wait times to 3 or more seconds, then...

Wait Time – the ‘miracle’ pause....

What happens to STUDENTS when Wait Time is increased?

The variety of students participating increases.	The length of student responses increases.
There is a decrease in ‘I don’t know’ responses.	The number, length and appropriateness of responses by students increases
Student to student exchanges increase (they listen to each other more)	More inferences are supported by evidence and logical argument.
The increase of speculative thinking increases.	Student confidence increases.
Decreases in student interruptions	Improvements in student retention
Increases in the amount and quality of evidence students offer to support their inferences	Achievement on assessment measures improves.



Wait Time – the ‘miracle’ pause....

What happens to TEACHERS when Wait Time is increased?

Questioning strategies became more flexible and varied
- the kind of questions asked by teachers change (more advanced / higher order / divergent questions)

The quantity of questions asked decreased, while the quality and variety of questions increased.

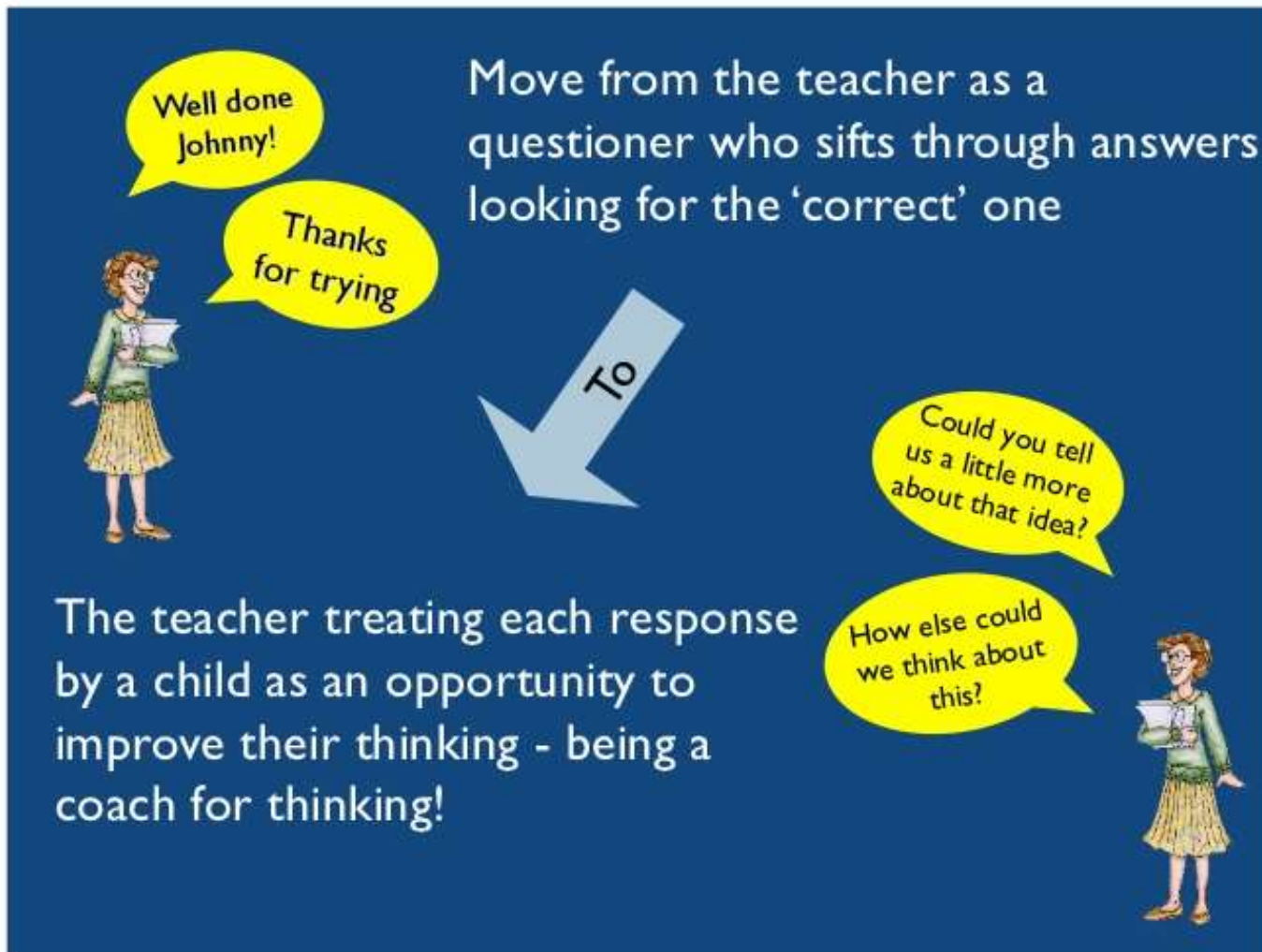
Expectations for the performance of certain students seem to improve

There is greater continuity in the development of discussion.

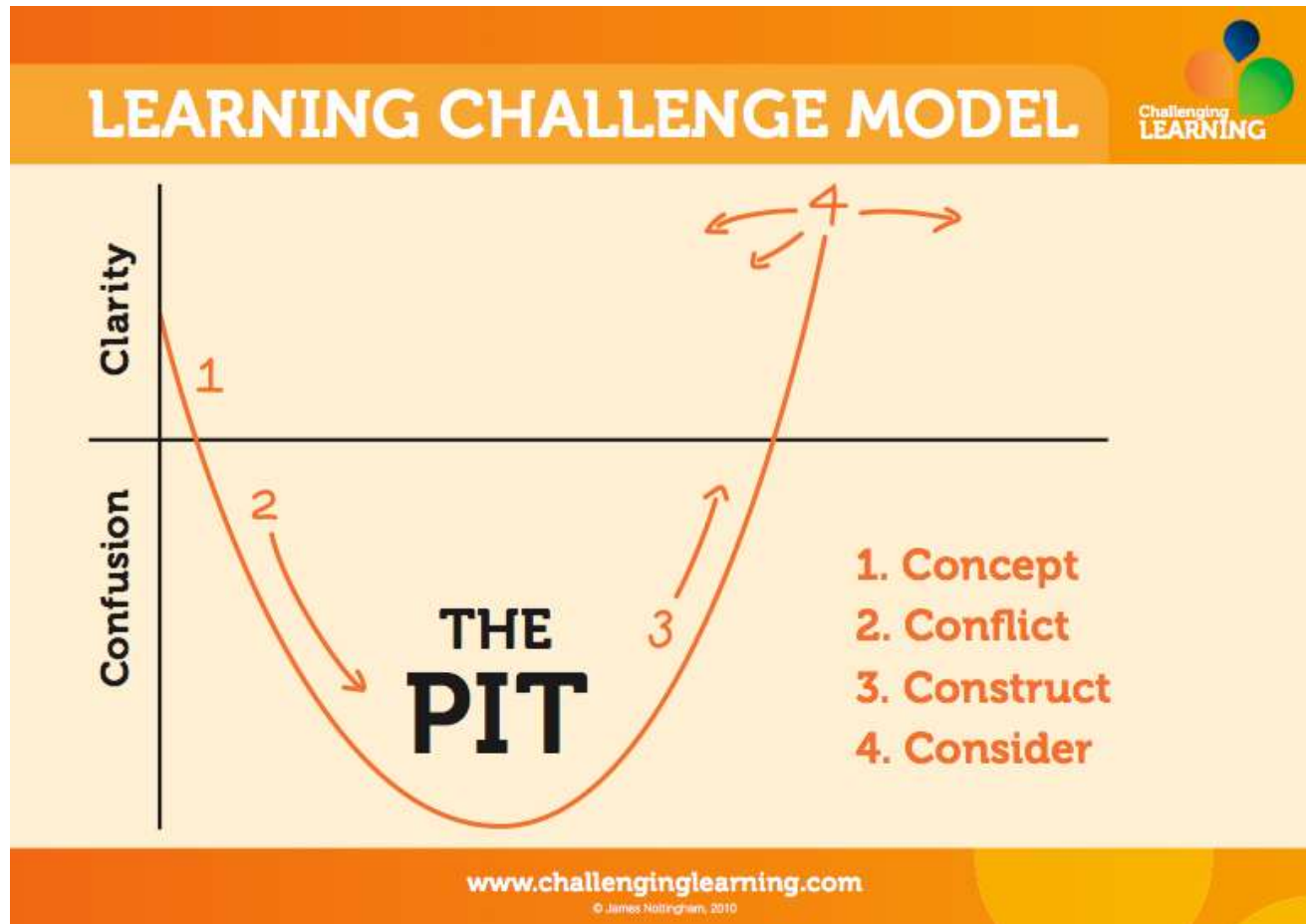
There is greater flexibility of teacher responses, with teachers listening more and engaging students in more discussions.

Increases in the number of higher cognitive questions asked by teachers.

A Questioning Friendly Classroom



The Learning Pit





Today's workshop



Self-Regulation



Questioning



Posing Questions – Students and Teachers

Posing Questions – Two Sides

Teachers



Students



Some things to think about

- Teaching \neq Learning
- It takes time and repetition to develop a skill
- Zone of Proximal Development
- Your learning environment affects the “willingness” of the students to learn



"I expect you all to be independent, innovative, critical thinkers who will do exactly as I say!"

Posing Questions - Students

We want the students to be able to pose questions appropriate to their level

But what type of questions do we want them to ask?

If we are going to develop student capacity to **Pose Questions** then perhaps we can create **Question STEMS to use as starters?**



Posing Questions - Students

Look at the Question STEMS used in

- Bloom's Taxonomy Question Stems
- Socratic Questions
- Question Template Document

Create possible Question Stems appropriate to your year level



Planning Activity Part I – Question Stems

Year 4 Thinking Skills Planning



		Skill	Beginning	Developing	Capable	Proficient	Potential Questions
Critical and Creative Thinking	Inquiring – identifying, exploring and clarifying information and ideas	Pose questions	I can ask appropriate how and why questions	I can turn 'I wonder' ideas into questions to investigate who, how, what, when and why I know that all of my questions won't be answered	I can ask questions to compare and contrast I can ask questions to make connections	I can ask questions that challenge points of view I can develop questions to clarify and interpret	
		Identify and clarify information and ideas	I can explore information and ideas from sources provided by my teacher I can tell the difference between fact and opinion	I can identify main ideas from a text I can use a graphic organiser to identify and clarify information and ideas	I can select information from a range of sources I can put the information into my own words I can identify multiple perspectives	I can select an appropriate graphic organiser to prioritise and clarify information and ideas	
		Organise and process	I can use a range of graphic organisers to organise my information from several sources	I can use several sources of information to make generalisations	I can collect, compare and categorise information using a graphic organiser	I can select an appropriate graphic organiser to collect, compare and categorise information	

Posing Questions - Teachers

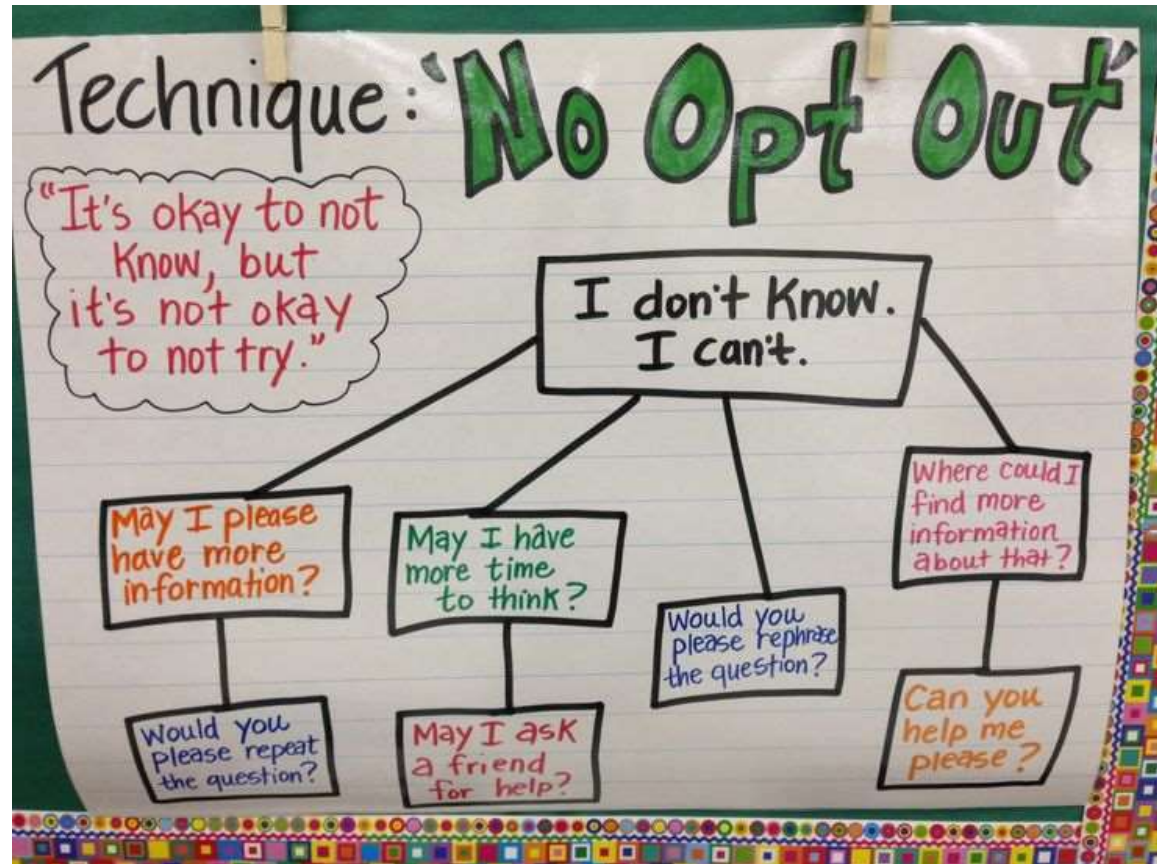
If we are going to develop student capacity to **Pose Questions** then we need to have habitual pedagogical strategies that

- Progressively develop student capacity
- Provide opportunities for practice
- Create an environment that values questioning



No Opt Out – its not OK to not try

A sequence that begins with a student unable to answer a question should end with the student answering that question as often as possible.





Simple habitual practices

*** WHAT?** (What is the learning?)

*** SO WHAT?** (What does this learning mean to/for me?)

*** NOW WHAT?** (What do I need more help with? What do I not understand? What do I find easy? What do I need to work on/improve? What is the next step in my learning?)

Planning Activity Part II – Teacher Strategies

- Use the resources provided (plus any others you already have)
- Identify potential pedagogical strategies to develop students to Pose Questions



Planning Activity Part II – Teacher Strategies

Year 4 Thinking Skills Planning



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Sharing

What did you learn from doing that exercise?





Next Session - D.I.E data activation model



Diagnose

Intervene

Evaluate

Example – Austin's Butterfly

