Thinking and questioning through inquiry.

Text slides from presentation to PYP Network Hong Kong, 2011. Photos, samples and videos not included. These slides are © of Kath Murdoch

What's our purpose

- To **explore teaching practices** that develop students' thinking skills and strategies within an inquiry based classroom
- To clarify the relationship between questioning and thinking and the role of these processes in relation to understanding.
- To provide an opportunity for **professional reflection and dialogue**

Standing on the shoulders of giants…

- Guy Claxton
- David Perkins
- Ron Ritchhart
- Art Costa
- Karen Gallas
- Yoram Harpaz
- Jamie McKenzie
- Debbie Miller
- Carol Dweck

- When do *you* do your best thinking?

Think of ways to adapt the ideas	Take a more organised approach recording thoughts	Ask questions of myself	Make connections to my classroom
Keep an open mind	Reflect on my current practice	Think about what I will DO with these ideas	Be more aware of my own thinking
?	Take some risks in my thinking	Stay 'in the moment' avoid preoccupation with other concerns	Challenge myself

Awareness of self as learner..

- In an inquiring classroom, we encourage students to 'notice' their learning. We build a discourse ABOUT learning itself - about how we learn what we learn and about ways to improve ourselves as learners. Learning is something the learner does - not something done to them.

Getting learning power…

- " good learners…also need to be aware of how their learning is going, and make strategic decisions about it…Good learners like taking responsibility for planning and organising their learning…they also monitor themselves - they have that 'little voice of self awareness that keeps their goals in mind"
- (Guy Claxton: 2002, Building Learning Power, p 33)

Teaching for transfer – the 'split screen Classroom' (Claxton)

Conceptual understanding **What am I learning?** **What connections am I making?** **What do I understand about the way the world works?**	**Building"Learning muscle".** **What am I learning about learning?** **What am I learning to do and be as a learner?**

Thinking about inquiry based learning

- Using CSI to generate our 'first ideas' about the concept…

Tuning into our thinking about inquiry

Colour	Symbol	Image
What **colour** would you choose to best represent your current thinking about inquiry?	What **symbol** would best represent your current thinking about inquiry?	What **image** would best illustrate your current thinking about inquiry?

Revisiting the essence of inquiry

- Connect
- Extend
- Challenge

- What did you notice about your thinking?
- What kind of thinking did you have to do?

A simple framework for thinking skills and dispositions… Kath Murdoch

Creative	Logical/critical	Reflective/ metacognitive
Open minded, flexible. risk taker, curious…	Precise, persistent, strive for accuracy an clarity	Empathic, responsive, willing to listen and change
Adapt, innovate on an idea, make new connections, find alternatives, pose questions, wonder, theorise, visualize	Recall, Analyse, synthesise, sequence, question, critique make connections, hypothesise, assess,	Review, evaluate, self-assess, goal set, re-think, articulate thinking, see other points of view

- It's what the teacher thinks, does and says that makes the most difference to student learning

- Understanding = thinking skills + thinking dispositions + engagement with worthwhile knowledge
- Interdisciplinary **skills (do)** + attitudes and profiles **(be)** + transdisciplinary themes (**understand**)

(After Yoram Harpaz)

Going behind the scenes in thinking-oriented classrooms.

- How can we make our classrooms more "thought-full" places?

Make it worth thinking about…

Contexts for learning that are…

- Rich
- Real
- Relevant

What's worth inquiring into?

- Who's got the **power**?
- What makes a great **community**?
- How and why do people's bodies **change** over time?
- Why can't we **survive** without invertebrates?
- Where do I **belong**?
- Does **history** make us who we are?
- Do people **need** heroes?
- What does it mean to make a healthy **choice**?
- What makes it **move**?

Create a 'culture of curiosity' - a classroom where wondering and questioning are encouraged and celebrated

Let them in on the secret… be explicit!!

- When we explicitly teach our students about thinking - when classroom discourse is 'transparent'…we take our students behind the scene and let them in on the secret.

- "Teaching the language of thinking works to promote students' thinking by creating new categories of thought and experience… In thoughtful classrooms, teachers not only use but also teach the language of thinking"
- Ricchart, 2003:138.

Revealing learning intentions

Today we are learning about…	We are stretching our…
Rules and laws in our community	Thinking….analysis Muscles (see Claxton: building learning power)

- Develop a 'tool kit' of thinking strategies - strategies that can be used across units of inquiry, year levels and in a range of disciplines.

Give students opportunities to share the way their thinking is changing. Allow students to construct and reconstruct their own understanding…

- Over its "life" a good inquiry teacher supports students in synthesising their thinking…on both a 'micro' and 'macro' scale…

Unit long "Looping"

- " Skilled teachers give an investigation a life course. There is a mutually constructed improvisation. In this improvisation, teachers keep questions alive through long stretches of time, they come back to them days even weeks after they have been asked."
- Palmer, 1987:5

Thinking through the journey of inquiry…

- Journeys are the midwives of thought. Few places are more conducive to internal conversations than a moving plane, ship or train. There is an almost quaint correlation between what is in front of our eyes and the thoughts we are able to have in our heads: large thoughts at times requiring large views, new thoughts new places. Introspective reflections which are liable to stall are helped along by the flow of the landscape. The mind may be reluctant to think properly when thinking is all it is supposed to do.
- Alain de Botton

Attend to our questioning…

"Questioning is to thinking as yeast is to bread-making. Unleavened bread is flat, hard and unyielding. Unleavened thinking is uninspired. Questioning…acts as leaven to transform matter into meaning." (McKenzie, 2005:8)

Asking questions to activate quality thinking

Why are questions so important?

- Questioning activates thinking. The quality of students' thinking is linked to the kind of questions teachers asked - and how they ask them.
- When students learn to ask quality questions, they are more empowered as learners. Questioning is critical to problem solving, planning, reflection, creativity, self assessment…

Why are questions so important?

- Good learners are confident and competent question askers - of themselves and others.
- When we know what and how to ask - the world of knowledge is opened up to us.

Analysis of one teachers' questioning…

What do you notice about the questions themselves?
What do you notice about the WAY questions are asked?

How could the questioning be improved?

Asking better questions

- The questions we ask students are pivotal to their thinking. Questioning prompts thinking - and can do so at a shallow level or at a deep level.
- When we give time to our own questioning and consider what it is we are asking, we are more likely to stimulate deep thinking.

We improve learning opportunities for students when we…

- Give them **time to 'rehearse'** before being expected to respond to a question
- Provide sufficient **wait time**
- Expect **everyone** to consider the question - not just those who put their hands up.
- Show them how we formulate our questions (**think aloud**)

- Aim for **fewer whole class conversations** and more small group arrangements.
- **Probe** and take a discussion further - piggy back rather than 'skim' across students
- **LISTEN** actively to student responses and avoid the 'guess what's in my head' game
- Encourage students to **question each other**
- **Celebrate** great questions!

Sample "probes"

- That's an interesting response…can you tell me more about that?
- Why do you think that is true?
- So how does that fit in/connect with what we have been talking about?
- How is that idea different to some of the ones we have been exploring?
- What does that remind you of?
- What connections can you make?
- Do you think that is always true?
- What might someone say who disagreed with you?
- Can you give us an example of that?
- What do you think helped you to come to that idea?

DO

- Give more time to students, before and after the question
- Link questions - keep probing
- Avoid 'hands up'
- Use eye contact and stay with the speaker
- Persist with students - encourage them to add to their response
- Use small group and 1-1 structures
- Use visual cues
- Think aloud as you formulate a question
- Ask open questions
- Expect responses different from those you anticipate

DON'T

- Repeat questions or students' answers
- 'scan' the room while you wait for a student to answer
- Try to 'trick' students or catch them out
- Ask questions without thinking about them first
- Pounce on unsuspecting students.
- Expect students to guess what is in your head
- Ask too may questions in rapid succession

…and all this needs

- TIME

- **Human beings learn best at 'the speed of life' taking time to think, reflect, and see the bigger picture. We're losing those slow, open conversations in which new ideas are born'** (Wheatley, 2002

- In an inquiry classroom there is a "commitment to readjusting the power asymmetry of the classroom by maintaining a modicum of silence…so we can **hear children's native theories and uncover their deeper questions**. If we make space… we begin to hear children's thinking" (Gallas, K. 1995:100)