

How to actually, really differentiate

... without driving yourself nuts in the process.



Tierney Kennedy

The big questions...

- Why?
- How?
- No, really, how?

Why?

- Why am I teaching?
- Who am I teaching?
- What is going to give me the biggest area of effect?



If we always teach how we have always taught...

our students will only ever learn what they have learned before.

The best teachers improve their students by 3-4 grades of content in one year...

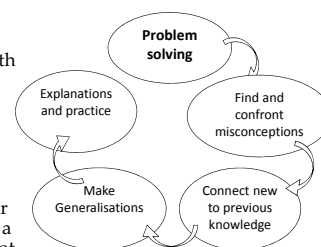
So what is happening for the rest of the time?

How? Doing it in a different order

Traditional:
Start with explanations, end with problem-solving.

PBT? Reverse it!

Problem Solving:
Peter Sullivan,
"students devise their own ways of solving a task that they have not been taught to do"



The proof:



NAPLAN effect size for Trebonne State School 2012: (Hattie expects 0.8)

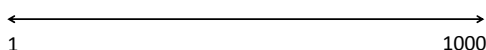
- 1.36 from Grade 5-7
QLD improvement was 0.81
- 2.37 from Grade 3-5
QLD improvement was 1.36

**> 90% of
Back-to-Front Maths
schools show NAPLAN
improvements within
their first year**

Start with a new problem

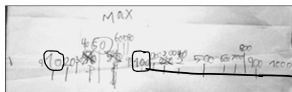
- Aim for 70-90% of kids to be stuck initially
- To adjust down: drop the content level, keep the tricky thinking
- To adjust up: increase the "trickiness" but keep the content level the same – mess with them!

Diagnostic Question: *Where would 10 and 100 go?*



Deal with misconceptions

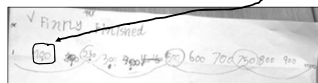
1. Predict



2. Explore and confront misconceptions



3. Link to previous knowledge and generalise



Try these:

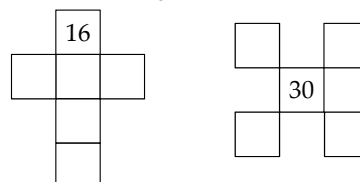
- I went shopping. I bought lunch for \$7.50, a shirt for \$15 and a book for \$5.50. At the end of the day I had \$2.50 change. What did I start with?
 - Adjust down: drop content level not thinking level
 - Adjust up: increase thinking level
- Draw a picture to add $\frac{1}{3}$ to $\frac{1}{5}$ to work out what the answer would be. No algorithms! Prove it.
 - Adjust down: drop content level not thinking level
 - Adjust up: increase thinking level



Year 7s voting that one half would be bigger than the other halves. 75% voted "yes".

Adjusting up: *mess with them*

Hundreds charts for grades 1-3:



- Corner squares, including on powers of 10
- Random squares, not connected
- Jigsaw puzzle with blanks, some overlaps and gaps

No, really, how?

- Classroom setup: desks and grouping
- Lesson structure: timing lessons to keep everyone thinking
- Self-differentiating and managing learning: tips for teaching kids to self-manage

Classroom setup

Grouping?

- Behaviour group rather than ability/mixed.
- Coloured pens.

Challenge table time!

Spare space with 3-4 chairs increases our flexibility.

- Ability groups for a purpose
- Kids we miss in normal classwork
- Similar communication styles



Lesson structure and timing

Whole class – group – whole class – challenge

1. Whole class for diagnostic questions and setting the scene – aim for 80% of kids a bit stuck (5-10 mins)
2. “If you have an idea to try, off you go. If not, stick with me”. (5 mins)
3. Everyone back to share initial thoughts – deal with majority of misconceptions as a group. (10 mins)
4. “If you want to change your mind, off you go. If not, stick with me.” – 2 groups left (10 mins)
5. Challenge for when done. (5-10 mins)
6. Final sharing time and generalising the principle (10)

Management tips

- Numbered “tip” cards blue-tacked to the board: whole group must agree to get next one
- Colours to differentiate problems up and down: Kids pick their own. Everyone does at least 2.
- Group work rotations: build fluency and practise questions into group rotation time. Your group does problem-solving.
- Plan for a 4 day week
- Different length lessons: 1.5 hours one day, 45mins other days

More help and notes:

- Videos showing real classroom teaching with differentiation
- Resources written for differentiation for AC
- Small-schools work program
- Website for tips, resources and Professional Development notes:
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