The Big Picture

Thinking about learning

- What kind of learners do we want?

Assessment that supports good learning

- Finding out where learners are – good diagnostics as feedback for teachers
- Making learning goals and standards clear
- Giving feedback that works
- Encouraging self-regulated learners
Some thoughts on learning

If teaching were as simple as telling we’d all be a lot smarter than we are.  
Mark Twain

What’s the best way to improve teaching? Focus on learning. And the best way to increase learning? Move the focus off the teacher and onto the student.  
David Kolb

What the student does is actually more important in determining what is learned than what the teacher does  
Thomas Shuell

Learners must ultimately be responsible for their learning since no-one else can do it for them.  
Assessment Reform Group
I TAUGHT STRIPE HOW TO WHISTLE
I DON'T HEAR HIM WHISTLING
I SAID I TAUGHT HIM. I DIDN'T SAY HE LEARNED IT
Defining learning

‘A significant change in capability or understanding’

This excludes: the acquisition of further information when it does not contribute to such changes.

(Michael Eraut)

‘Any process that...leads to permanent capacity change’

this involves content, incentive and interaction

(Knut Illeris)

‘It’s like learning to ride a bike’
How we learn

• What am I good at?
• How and why did I get good?
• How do I know I’m good?

• What am I not good at?
• How and why did I not get good?
• How do I know I’m not good?
The Expert Learner (2014)
How experts learn as a model

It involves
1. Opportunities – ability is developed not fixed
2. High expectations and clear goals
3. Strong motivation, resilience and risk-taking
4. Powerful mental frameworks
5. Extensive *deliberate* practice – 10,000 hours
6. Skilled diagnostics and feedback

This is an *apprenticeship* model

Its importance for classroom assessment
2. High expectations and clear goals are the key to improving learning – expert teachers set more demanding work (John Hattie, 2012)

**FIGURE 3.2** Percentage of student work classified as surface or deep learning
Mental frameworks
Working memory

Write 18725 as code
Mental models that help working memory

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Everyday expertise at ‘chunking’

- norwayisthehomeoftrolls

- 191420121939
5. Deliberate practice

Source: Colvin, 2009
Aligning assessment and learning

What forms of classroom assessment will help effective classroom learning?

i. *Builds on what we know* – assessment that finds out where learners are in their learning

ii. *Makes meaning* - ‘*makes sense*’- makes clear the learning intentions, recognises success

iii. *Is active and social* – learners take part in their own assessment; importance of classroom interaction (feedback); development of self-regulating learners.
Assessment: key definitions and frequent misunderstandings

**Summative assessment** (Assessment of Learning). Assessment which ‘sums up’ where somebody has got in their learning. Often at the end of a course or topic.

*Misunderstanding:* That frequent classroom tests during a course are *formative*. Unless they are used for further learning, they are better seen as frequent summative (‘minisummative’) tests

**Formative assessment** (Assessment for Learning). Assessment which is used as part of the learning process. It ‘informs’ learning.

*Misunderstanding:* That formative assessment is only about testing. It includes many other forms of information-gathering (observation, oral work, misunderstandings, feedback).
Assessment for Learning

Assessment for Learning is the process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there.

Assessment Reform Group (2002)

Quality AfL keeps learning principles central – the spirit – ‘high organisation based on ideas’ in contrast to the letter when practices are used without understanding.

An alternative classification: routine vs adaptive expertise
Finding out where learners are

‘The most important single factor influencing learning is what the learner already knows..[find it].. and teach accordingly,’  
(D.Ausubel)

- Diagnostic assessment  - ‘checking in’:
  - listen to reading
  - classroom work
  - test information

- Questioning and classroom dialogue:
  - Misconceptions
  - Rich questions
  - Wait time (thinking time)
Finding out where learners are

- **Classroom dialogue**: questions, discussions
  Teachers talk 70-80% of time;
  ask 200-300 questions a day, 60% recall facts, 20% procedural;
  <5% group discussion or meaningful ideas;
  70% of answers less than 5 secs (3 words) (Source J. Hattie 2012)

How long do teachers wait after asking a question before taking action?

*Questions* > ‘thinking time’ (wait time) > pair and share > no hands up.

*Traffic lights*
Wait time is harder than we think

Here’s a comment from a teacher who changed his practice:

Increasing waiting time after asking questions proved difficult to start with – due to my habitual desire to ‘add’ something almost immediately after asking the original question. The pause after asking the question was sometimes ‘painful’. It felt unnatural to have such a seemingly ‘dead’ period but I persevered....Now, after many months of changing my style of questioning I have notice that most students will give an answer and an explanation (where necessary) without additional prompting.
Quality questioning

• Using good question stems:
  ‘why does...?’; ‘what if...?’; ‘how would you...?’;
  ‘could you explain...?’

• Poker face - the teacher’s body language does not signal to the student what the teacher wants to hear (keeps the focus on the task)

• Basketball not ping-pong

• Statements instead of questions

• Avoids: asking too many questions at once; answering it yourself; only asking the best students; ignoring answers; failing to build on answers
Learners as questioners

Once you have learned to ask questions – relevant and appropriate and substantial – you have learned how to learn and no one can keep you from learning whatever it is you need to know. (Postman and Weingartner, Teaching as a Subversive Activity)

Why do our pupils ask so few thoughtful questions? Why do they ask fewer as they get older?
Ways of encouraging question asking

• Written questions
  Question box / ‘Hold on miss I’ve got a question’ board/ Exit questions
• Role play – interview the expert
• Don’t know the answer – please research
• Groups write test questions for others in class at end of a topic
Her research found that teachers:

• Can generally identify the principles that assessments address
• Are able to identify what students do and do not know
• Have most difficulty knowing what to do next in their teaching

This may be the result of not having a clear idea of learning progression and the tasks, activities, interactions and tools that would encourage progression.
where they need to go...

The three major messages for teachers from John Hattie’s *Visible Learning*

- **Transparent goals**
  - the more transparent the teacher makes the learning goals, then the more likely the student is to engage in the work needed to meet the goal.

- **Success criteria**
  - the more the student is aware of the criteria of success, then the more the student can see the specific actions that are needed to attain these criteria.

- **Rapid formative feedback**
  - the more there is feedback about progress from prior to desired outcomes the more positive attributes to learning are developed.

https://tmsydney.wikispaces.com/...
Where learners need to go:
Learning intentions & success criteria

- High expectations are the key to improving learning
- The teacher is clear about what is being learned (progression in learning) – and makes it clear to the student.
- What we will be *learning* rather than what we will be *doing*
- The importance of ‘*tuning in*’ (building on ‘where learners are in their learning’):
### Confused & clarified learning intentions

<table>
<thead>
<tr>
<th>Confused learning objective</th>
<th>Clarified learning objective</th>
<th>Context of learning (immediate learning)</th>
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<tr>
<td>To be able to write instructions on how to change a bicycle tyre</td>
<td>To be able to write clear instructions</td>
<td>Changing a bicycle tyre</td>
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<tr>
<td>To be able to present an argument for or against nuclear power</td>
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<tr>
<td>To produce and analyse a questionnaire about TV viewing habits.</td>
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3. Find $x$.  

Here it is
Tuning in – teaching division in maths

Relevant recall questions (finding out where learners are)

Recall experiences of ‘cutting things up’ (cake etc.) and relate to division – ‘so if you cut up the cake like this, how many pieces would you divide it into?’

Also use ‘sharing out’ to link to division – ‘If there were six sweets to divide between two children, how many would each child get?’

Practise both and learn to recognise a division problem.

If a gardener has 20 bulbs to put equally in 5 flower beds, how many would be in each bed?

Step 1: This a sharing out problem so I must divide

(Source: Geoff Petty, Evidenced-based teaching)
A woman is on a diet. She buys 3 turkey slices which weigh \( \frac{1}{3} \) of a pound (0.45 of a kilo) but her diet only lets her eat \( \frac{1}{4} \) of a pound. How much of the 3 slices she bought can she eat if she stays on her diet?
Some solutions

1. 3 slices = $\frac{1}{3}$ ; $x$ slices = $\frac{1}{4}$
   
cross –multiply so that $\frac{1}{3} \times x = \frac{3}{4}$, so $x = \frac{9}{4}$

2. If 3 slices is a third of a pound then 9 slices is a pound. I can eat $\frac{1}{4}$ of a pound so $\frac{1}{4}$ of 9 slices is $\frac{9}{4}$ slices (Grade 5)

3. (Source: Jo Boaler)
Tuning in

‘We ask kindergartners, “What is the sound of the letter at the end of the word?,” forgetting that many of them are unclear about the concepts letter, word, sound (as it applies to speech), and end (which requires knowing that letters are ordered left to right), and do not know that letters bear a complex relationship to speech sounds’.

(Peter Johnston)
Success criteria – understanding what is needed

Royce Sadler’s paradox: why does thoughtful feedback often not work?

Success criteria need:

1. Negotiation: ‘what would you expect to see in a successful piece of work?’

2. Exemplars: ‘which of these two (or more) pieces of work best meets the criteria?’

3. Modelling: ‘Here’s what I mean...’

4. Guided practice: activity > independent practice (6x)

The greatest enemy of understanding is coverage. As long as you are determined to cover everything, you actually ensure that most kids are not going to understand. You've got to take enough time to get kids deeply involved in something so they can think about it in lots of different ways and apply it—not just at school but at home and on the street and so on. (Howard Gardner)
AfL in practice: teaching Sudoku

Sudoku

Fill the grid so that each row, column and 3x3 box contains the numbers 1-9.

```
 4 1 6 | 3 4 |
 5  7  | 3 9 |
 6  8  | 2 9 |
---+---+---
 2 1 6 | 7 4 |
 1  3  | 5 2 |
 3 4 7 | 6 9 |
```
Feedback

‘Provides information which allows the learner to close the gap between current and desired performance’

*It is most effective when:*

- It is effectively timed;
- It is specific and clear;
- It is clearly linked to the learning intention;
- The learner understands the success criteria/standard;
- It focuses on the **task** rather than the learner (self/ego);
- It gives cues at the right levels on how to bridge the gap;
- It offers **strategies** rather than solutions;
- It challenges, requires **action**, and is achievable.
Specific and effectively timed..............................................

Feedback as a ‘thorn’

• ‘write more’ – ‘If I knew more I would have written it – I don’t know what more to write. Teachers should tell me what is missing’ (14 yr old Norwegian pupil)

• When pupils are not given time to act on the feedback they see it as negative and critical which makes them feel ‘useless’. If the are given time and the teacher follows up on the feedback it is treated as positive.

   (Gamlem and Smith)
The thermochromic ink in this changes colour from the temperature from your forehead. It tells you if you are too hot.

Continue to improve handwriting and spelling.

Explain the science.
Feedback often does not improve learning because:
It does not close the gap:
  • grades/marks;
  • praise/rewards;
  • unclear;
  • too general (‘more detail’).

It is directed at self/ego level rather than the task.

The learner can choose to:
  modify the standard;
  abandon the standard (‘retire hurt’);
  reject the feedback/messenger.
The problem with praise

Praise is the most common form of feedback – yet has little impact on learning.

Why? Because:

• It is directed at the person not the task & does not provide information about how to improve.

• It can ‘create a growing dependence on securing someone else’s approval’ (Kohn).

• It may move the focus from the task to the learner – so any praise should encourage self-regulation directed at task.

Expert teachers praise less than novice teachers (expectations)
My Trainer

Credit

C) This is a sensitive, well planned drawing, your lines are light and you have observed very carefully. To develop draw a little larger which will also assist with achieving a more accurate shape.
Developing self-regulated learners

‘Learners do well when engaging fully in their learning, collaborating in planning and shaping and reviewing their progress. Approaches to assessment that enable learners to say, ‘I can show that I can’...will fully involve them’.

(Education Scotland)