

Intrinsic motivation in the formative assessment of learning

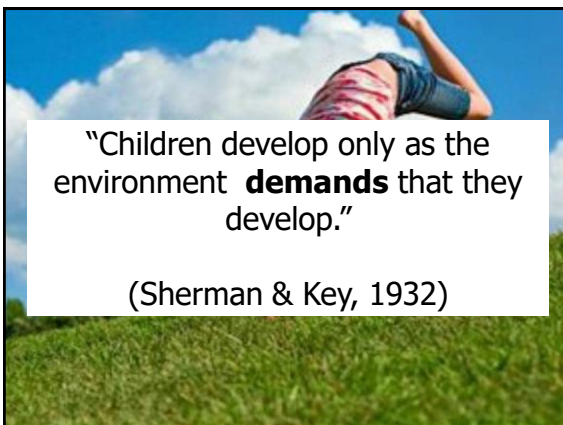
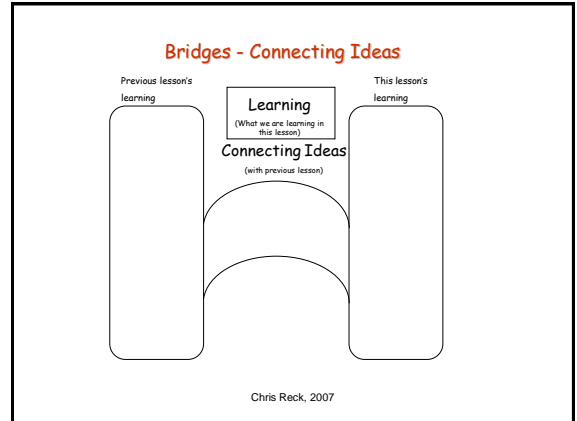
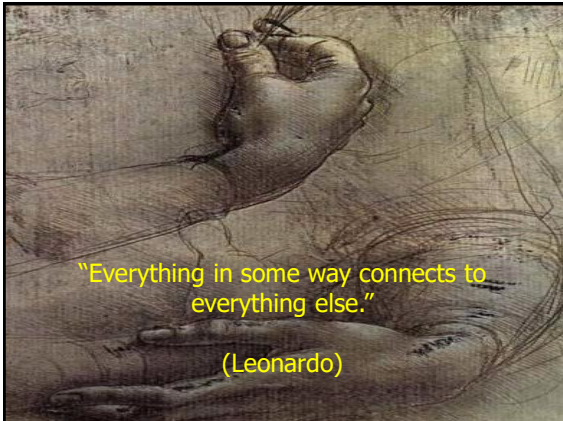
Webinar for
The Education People
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Aim



To provoke thought and reflection on the seminal role of intrinsic motivation in high quality formative assessment of learning



“Especially when tasks are demanding, the quality of pupils’ _____ rather than their _____ becomes the chief determinant of their learning outcomes”
(John Hattie, Visible Learning)

Define 'learning'

"A change in long-term memory"
(Kirschner, Sweller & Clark, 2006)

Watkins, 2005 p51:

"Human learning is about both appropriating and producing knowledge **yet the dominant model of classrooms does not start with practices which enhance student agency.**"

Where does learning happen?

The power of the classroom

The classroom level of effects is more influential than the school level of effects by a factor ranging from 4:1 in some studies to 15:1 in others

What are the key surface features of all these classrooms?

What are some characteristics of an enquiring learning community?

- A concern for truth, not just facts
- A valuing of process over product
- Toleration of error and uncertainty
- Space and time for thinking and reflection – “slow schools”
- A drive for deep learning (intrinsic motivator), not just performance (extrinsic motivator)

Reflection:

What do you think is the single biggest factor affecting learning?

“If I had to reduce all of educational psychology to just one principle, I would say this: the most important single factor influencing learning is what the learner already knows. Ascertain this, and teach him [or her] accordingly.”

(Ausubel, 1968)

“Practice in a classroom is formative to the extent that evidence about student achievement is elicited, interpreted, and used by teachers, learners or their peers, to make decisions about the next steps in instruction that are likely to be better, or better founded, than the decisions they would have taken”

(Black & William, 2009)

Instructional goals or objectives have an unintended *negative* impact on non-specified objectives ($d = -0.20$, Walberg, 1999).

An objective impairs the student's peripheral vision.

Surrendering objectives, a few alternatives to WALT & WILF:

- www... (**W**e **W**ere **W**ondering ...)
- AWOL (**A**nother **W**ay **O**f Looking ...)
- WISE (**W**hat **I**'m **S**till **E**xploring ...)
- IQ (**I**'m **Q**uestioning ...)

“Meta-cognition is the engine of learning.”

(Robert Marzano – synthesiser of meta-studies comprising >1 million learners)

Meta-cognition and meta-learning means being aware of how you are learning, and reflecting actively on the kind of thinking you are doing. This means selecting tools and strategies which can help improve your expanding mind.

What do we mean by ‘motivation’?

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- **Intrinsic** (autonomous): doing something for the thing itself – a focus on *process*
- **Extrinsic** (controlled): doing something for what it’ll bring as a reward – praise, prizes, performance grades, etc. – a focus on *product*

Intrinsic motivators – reflection/planning task

Identify at least one way in which one of these elements can support formative assessment:

- Curiosity
- Challenge
- Novelty
- Autonomy
- Sense of purpose
- Social interaction
- Mastery

Achievement goal theory

(Senko *et al*, 2011)

- Developed to understand students’ responses to achievement challenges
- Mastery goals – focused on acquiring and developing competence
- Performance goals – focused on demonstrating one’s competence and outperforming others

"I like mastery goals, and I like performance goals, but which are better?"

	Mastery	Performance
Find classes interesting	x	
Persist in the face of difficulties	x	
Value cooperativeness	x	
Seek help when confused	x	
Self-regulate effectively	x	
Use deep learning strategies (elaboration, connection)	x	
Manage tough decisions	x	
Experience positive emotion	x	
See the point of a task	x	
Lead to academic achievement	x	x

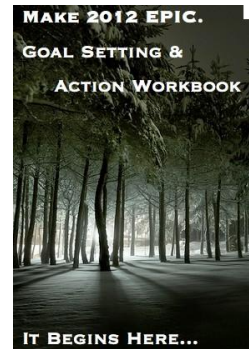
"If a person is engaged in some activity for reasons of intrinsic motivation and if he begins to receive the external reward, money, for performing the activity, the degree to which he is intrinsically motivated to perform the activity decreases"


(Edward Deci, 1971)

Have high expectations and tap into students' own understandings of their performances




Encourage your students to set challenging, mastery-oriented, personalised goals



 Harness the power of the PB!

- Two dimensions to the PB: 1. task-specific goals (what exactly is the student trying to achieve?) and 2. situation-specific goals (why does she want to achieve that outcome?)
- PBs have high positive relationships to educational aspirations, enjoyment of school, participation and persistence (Martin, 2006)

 Sample evidence-base (1)

- Marzano (2001) reports effect sizes ranging widely from 0.19 to 1.35 (percentile gains from 7-41) for feedback, but generally clustering at >0.5. These big differences reflect the nature and delivery-context of the feedback provided.
- Higgins (2011) reports potential gains for feedback of 9 months+ ($d = 0.73$) - i.e. *very high impact at low cost*



Sample evidence-base (2)

Yeh (2011) ranks "rapid formative assessment" as the most cost-effective of 22 approaches, including:

- School reform
- Computer-assisted instruction
- Longer school day
- Improvements to teacher education, experience or salaries
- Summer school
- Value-added teacher assessment
- Class size reductions
- 10% increase in pupil expenditure
- Head Start/Sure Start
- An extra school year, vouchers, charter schools



Sample evidence-base (3)

- Hattie (2009, 2012) ranks feedback at #10 (out of 150 influences on learning), with an effect size of $d = 0.75$. Formative evaluation is ranked #4, $d = 0.9$! Like Marzano, he finds "while feedback is among the most powerful moderators of learning, its effects are among the most variable." Summary: Feedback is a nuanced concept – done well it's magnificent, done poorly it's worthless.



Sample evidence-base (4)

- Hattie (2009, 2012) ranks self-reported grades as #1, quoting an overall effect size of $d = 1.44$ (a correlation of 0.8 between students' estimates and their subsequent performance in school tasks)
- Marzano (2001): "On average, the practice of having students track their own progress was associated with a 32 percentile point gain in their achievement"



Sample evidence-base (5)

- Marzano (2001) cites effect sizes from 0.46 to 1.37 (percentile gain: 18-41!)
- Hattie (2009, 2012) ranks goals as #35 and #48, quoting an overall effect size of $d = 0.56$ and 0.5 . (For SEN students, $d = 0.63$ - 0.67 for challenging goals)
- Wang (1994, p75) found that "... a student's capacity to plan, monitor, and, if necessary, re-plan ... had *the* most powerful effect on his or her learning."



Sample evidence-base (6)

Performances of students with the most challenging goals are 250% (!) higher than those with the easiest goals (Wood & Locke, 1997).



Sample evidence-base (7)

- Boaler, in Swann et al (2012, p82): "It is difficult to support [children's] development and nurture their potential if they are placed into a low group at a very early age, told that they are achieving at lower levels than others, given less challenging and interesting work, taught by less qualified and experienced teachers, and separated from peers who would stimulate their thinking."

Classroom implication:

"... teachers need to provide opportunities for students to be involved in predicting their performance; clearly, making the learning intentions and success criteria transparent, [and] having high but appropriate expectations ... is critical to building confidence in successfully taking on challenging tasks" (Hattie, 2009, pp53-4)

Aids to personalisation of goals – sentence stems

- "I want to know ..."
- "I'd like to find out more about ..."
- "A puzzle I'd like to crack is ..."
- "A challenge I'm determined to overcome is ..."
- "The aspect of this topic that I'd like to master is ..."
- "I'd like to relate ... to ..."

SATS contracts

- At the start of a term, both student and teacher list their top three learning goals
- Towards the end of term, each writes his/her own report, identifying 3 successes, and 3 failures en route to achieving these goals (and reasons for both)
- Share reports with each other



Good feedback – its nature (1)

- It's "corrective" – i.e. it provides students with an explanation of what they're doing right and wrong – but especially right. Test-like feedback produces weak or even negative effects.
- It's timely – i.e. generally, delayed feedback leads to delayed progress.

Good feedback – its nature (2)

- It's specific and criterion- (not norm-) referenced – i.e. it tells students where they stand relative to the targeted skill or knowledge, not where they stand in relation to others.
- It's invitational – i.e. students should increasingly be encouraged to provide their own.

3 good feedback moves (Hattie, p.176)

- 1. Task Level** – How well tasks are understood/performed (“You need to put more about toys in Tudor times.”)
- 2. Process Level** – The process needed to understand/perform tasks (“Try reading this a bit more slowly.”)
- 3. Self-regulation Level** – Self-monitoring, directing and regulating actions (“You know when you need full stops – check to see if they’re needed here.”)

Task-level feedback prompts

(adapted from Nuckles et al, 2009)

- Does this answer meet the success criteria?
- Is this right?
- Could you elaborate on this answer?
- What aspect of your response to this assignment are you pleased with/unhappy about?
- What other information do you need to meet the criteria?
- What’s the sticking point in this task?

Process-level feedback prompts

(adapted from Nuckles et al, 2009)

- What strategies are you using?
- Are there more efficient strategies you could use?
- What other Qs could you ask about this task?
- Do you grasp the concept underpinning this task?
- Have you done anything similar to this before?

Self-regulation-level feedback prompts

(adapted from Nuckles et al, 2009)

- What would be the best way of checking your work?
- How could you reflect on these answers?
- What happened when you ...?
- How can you account for ...?
- What learning goals have you achieved?
- How have your ideas changed?
- What aspect of this work could you now teach to others?

1 bad feedback move (Hattie, p.177)

- Feedback at the **self or personal level** (usually praise) is rarely effective
- Praise is rarely directed at the three feedback Qs and so is ineffective in enhancing learning
- When feedback draws attention to the self, students try to avoid the risks involved in tackling a challenging assignment, they minimise effort and have a high fear of failure